Building analytics on shifting sands

Mastering risk and unlocking opportunities with reference data and interoperability

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Methodology

This report was developed based on an executive roundtable hosted by Corinium Global Intelligence in collaboration with Moody's. The roundtable brought together leading experts in data, analytics, artificial intelligence (AI), and risk management from various industries — particularly financial services — to explore the evolving role of data in managing risk and driving business growth.

The insights shared in this report were gathered through a combination of the roundtable discussion and in-depth interviews with participants and other senior leaders in the data and analytics space. Contributors provided real-world examples and expert commentary on how their organizations are leveraging high-quality reference data, maintaining data governance, and achieving data interoperability to manage risk and unlock opportunities. ∎

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* The views expressed by the contributors in this report are their own and do not necessarily represent the views or policies of the companies or institutions they work for

Executive summary

A recent executive roundtable hosted by Corinium Global Intelligence and Moody's highlighted the critical role of data in proactive risk management and business growth.

This report shares how our roundtable participants and other leaders in data, analytics, and AI are seizing opportunities by leveraging high-quality data, creating robust governance processes, and prioritizing effective data interoperability to navigate an era of exponential risk.

The risk landscape is becoming increasingly complex and varied, especially for companies working in highly regulated industries. The need for high-quality data in these industries extends beyond regulatory standards to encompass real-time insights and proactive mitigation efforts.

For example, the banking sector prioritizes fraud detection and prevention, with different models for various types of fraud. High-quality reference data also plays a critical role in transaction monitoring, reporting, and regulatory filings.

A robust data governance framework increases data reliability, accuracy, and timeliness. Integrating data to provide a cohesive perspective across functions and external partners is crucial for efficient risk management and compliance. Achieving interoperability offers benefits such as faster decision-making, reduced operational costs, and enhanced collaboration.

In our roundtable discussion, industry leaders collectively agreed that data governance and risk management are deeply intertwined, particularly in highly regulated industries. A strong data governance framework can help mitigate risks by creating a "single source of truth" for decision-makers. Poorly governed data could also exacerbate risk, especially in compliance.

Integrating internal and external data sources is crucial for modern risk management strategies. Master data management (MDM) solutions can help boost data consistency and reliability, allowing for real-time risk management.

This report also explores how powerful data and analytics, AI, and machine learning (ML) create opportunities for innovation, operational efficiency, and customer-centric strategies. ■

CHAPTER ONE

Unlocking risk management with data-driven strategies

Businesses face myriad risks — from financial and operational risks to reputational concerns — that are growing at an exponential rate.

Risk management now extends into every facet of business strategy, demanding real-time insights and proactive mitigation efforts. As a result, the ability to leverage high-quality data has never been more critical.

"In financial services, it is all about risk management and building trust," says a chief analytics officer from a major US bank. "We talk about credit risk, market risk, operational risk, reputational risks, and more. And all of this risk management leverages data to predict and to forecast."

"One of the biggest issues that banking institutions are going to prioritize is fraud detection," says Sumedha Rai, Senior Scientist and AI and Natural Language Processing (NLP) Lead at Acorns Grow. "Whether it's credit card fraud, chargeback fraud, referral fraud, or anything else that is a financial liability, machine learning models have the potential to uncover patterns that we may not catch so easily." ▶

"Proactively using data to identify risks can be a powerful tool to protect revenue," adds Carolina Azar, Senior Director of Product Strategy at Moody's. "Identifying emerging risks early helps to manage risk exposure before it becomes a much deeper operational problem."

In today's world, where fraud typologies can emerge at pace and evolve unexpectedly, financial services businesses need to be resilient and adaptable. However, third-party networks can carry hidden threats and span multiple tiers and jurisdictions, making visibility difficult and continuous innovation time-consuming and resource-hungry.

As organizations in highly regulated industries like financial services work to stay competitive while complying with complex regulatory frameworks, transparency plays a critical role. Achieving it, however, can be hard when relying on standalone solutions or siloed data without a unified, holistic view.

Effective risk management requires strong data governance and management frameworks that help make sure organizations use reliable, accurate, and timely data to assess and mitigate risks. Without robust governance, even minor lapses in data quality can cause significant financial and reputational damage, jeopardizing current operations and future readiness.

Creating unified perspectives in data governance

As companies navigate increasing scrutiny from regulators and investors, their ability to swiftly address emerging risks hinges on robust data governance.

"[Regulators] definitely care about consolidation and risk remediation," says Dan Power, Vice President of Data Governance at Raymond James. "They focus on risk data aggregation and reporting, and set very high standards. Meeting these principles is challenging for many institutions."

Data governance and risk management are inextricably linked. Effective data governance frameworks help make sure data is accurate, comprehensive, and compliant. ▶

"Whether it's credit card fraud, chargeback fraud, referral fraud, or anything else that is a financial liability, machine learning models have the potential to uncover patterns that we may not catch so easily."

— Sumedha Rai
Senior Scientist, AI and NLP Lead, Acorns Grow

This helps mitigate various types of risks by creating a centralized, comprehensive, and easily accessible data repository, or a "single source of truth" for decision-makers across an organization.

One of the most compelling examples of how data governance supports risk management comes from the financial sector, in which large institutions tend to operate across multiple jurisdictions, each with its own regulatory requirements.

"We manage thousands of databases for tens of thousands of employees," says Power. "Large financial institutions face complex regulatory environments requiring tiered attention to regulators based on their influence and jurisdiction."

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> Vice President of Data Governance, Raymond James

Moreover, poorly governed data can exacerbate existing risks, particularly concerning compliance, which may present a challenge for organizations without well-developed data governance frameworks.

This complexity underscores the importance of a robust data governance framework that can manage not only the huge volume of data that modern organizations produce but also the nuances of regulatory compliance across the globe.

Harnessing internal and external data for proactive risk management

A key aspect of modern risk management strategies is the integration of both internal and external data sources. External data, such as market trends or third-party financial data, can provide critical context that enhances risk model accuracy.

"Organizations must be both present-ready and future-focused, but achieving this requires a solid foundation of high-quality, interoperable data," says Andrew Hansen, Director of Product Strategy at Moody's. "Many companies struggle to piece together data locked in internal silos, along with disparate external datasets that aren't integrated. Without a unified data system, it becomes difficult to obtain and act on timely, holistic intelligence needed to manage risks effectively." ▶
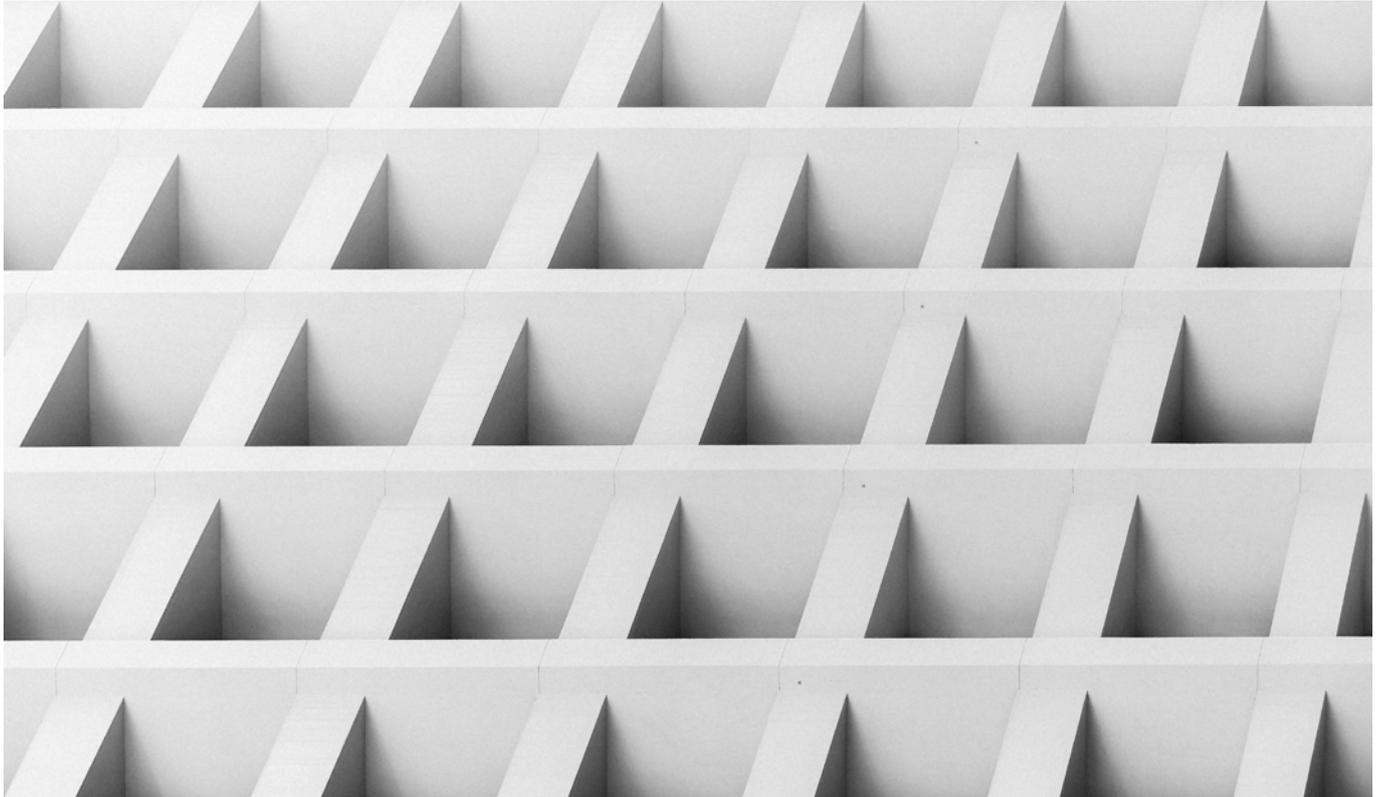
The volume of external data available also presents challenges. Institutions must make sure this data is accurate, up-to-date, and relevant before integrating it into their risk management systems.

MDM systems play an important role in making data from both internal and external sources consistent and reliable. They provide a unified view of key data entities, such as customers, suppliers, and transactions. By consolidating disparate data into a "single source of truth," MDM systems can help institutions reduce operational risks, improve decision-making, and maintain compliance.

However, MDM systems' importance extends beyond aggregating data; they can also allow for real-time risk management. Institutions can better anticipate and respond to emerging threats by maintaining a consistent, up-to-date view of critical data.

For example, in the case of operational risk management, the ability to monitor supply chain data in real time allows organizations to identify potential disruptions before they occur.

Haroon Abbu, SVP of Digital Technology and Data Analytics at Bell and Howell, says, "We depend on vendor parts, and in manufacturing identifying global risks ahead of time is crucial. We must stay on top of these risks through data by identifying our critical failure points and bottlenecks in our supply chain." ▶

"Data accuracy is one of the top causes of system implementation failures, including ERP and CRM systems. The adage 'garbage in, garbage out' really applies here."

— **Dan Power**
Vice President of Data Governance, Raymond James

The impact of data quality and timeliness on risk management

Without high-quality data, even the most sophisticated risk models are likely to produce unreliable results. Poor data quality can lead to missed opportunities, inefficiencies, and increased risk exposure.

"The quality and consistency of data are critical for any new system implementation," says Power. "Data accuracy is one of the top causes of system implementation failures, including enterprise resource planning (ERP) and customer relationship management (CRM) systems. The adage 'garbage in, garbage out' really applies here."

Timeliness is also essential, particularly when dealing with external data. Organizations must make sure the data they are using is current and relevant. Outdated data can compromise decision-making and lead to inaccurate risk assessments.

"It's essential to have a relationship with third-party vendors wherein data quality can be evaluated over time based on the performance of the models," says Rai. "If the quality of the data is deteriorating, or if it's not available fast enough, then it's important to have a conversation about it with the data providers."

Risk management is an evolving field, and organizations that invest in data infrastructure and governance will be better equipped to stay ahead of the curve, improve compliance, enhance transparency, and maintain a competitive advantage in the face of shifting challenges. ∎

CHAPTER TWO

Data-driven insights for market growth and innovation

As well as being crucial to risk management, data and analytics are creating unprecedented opportunities for innovation, operational efficiency, and customer-centric strategies

Forward-thinking organizations use data as a powerful tool for opportunity identification. By leveraging advanced analytics and predictive models, companies can stay ahead of market trends, forecast customer demands, and capitalize on opportunities before competitors.

Haroon Abbu highlights this shift: "Data presented a new opportunity for us. Our traditional business model involved stationing service engineers at specific customer locations to service industrial automation equipment. However, we expanded into the retail segment by shifting to a new business model of remote monitoring and repair based on data-driven insights."

He continues, "By equipping [remote service engineers] with the right information and enabling predictive maintenance and parts replacement, we optimized our operations. These efforts led to new monetization opportunities and improved bottom lines."

This shift toward data-driven opportunity identification is particularly crucial in highly regulated industries. By analyzing regulatory changes and customer sentiment, organizations have the potential to uncover new revenue streams. ▶

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> SVP of Digital Technology and Data Analytics, Bell and Howell

Driving business growth through MDM and customer analytics

Financial institutions can use their data and MDM systems to fine-tune their operational strategies, optimize pricing models, and develop new products that align with customer needs.

Organizations are increasingly using AI and ML models to forecast market trends, analyze customer sentiment, and provide actionable insights that drive strategic decision-making.

In the financial sector, the use of AI-driven analytics is becoming more prevalent as companies seek to gain a competitive edge. Creating a unified customer

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> **— chief analytics officer from a major US bank**

view is also fundamental to enhancing customer experience and presenting opportunities for business growth.

For example, businesses may use AI tools to analyze social media traffic to aggregate their customers' reactions to a new product or

service and to strategize future product development.

"When it comes to understanding what the customers are feeling about a new product, AI and NLP techniques are actually some of the best and fastest ways to get feedback," says Sumedha Rai. "You can understand what is really going on with your product in real time and gauge what the customers like and dislike about it."

A chief analytics officer from a major US bank adds, "We want to learn from the data we have about our customers so we can better serve them. Machine learning predictions really allow us to mine the data, understand the customer journey, and maximize customer lifetime value."

Leveraging data from internal and external sources allows institutions to build a comprehensive picture of market trends, customer preferences, and regulatory changes. It also assists institutions in making more informed decisions about where to invest resources and how to position themselves in the market. ▶
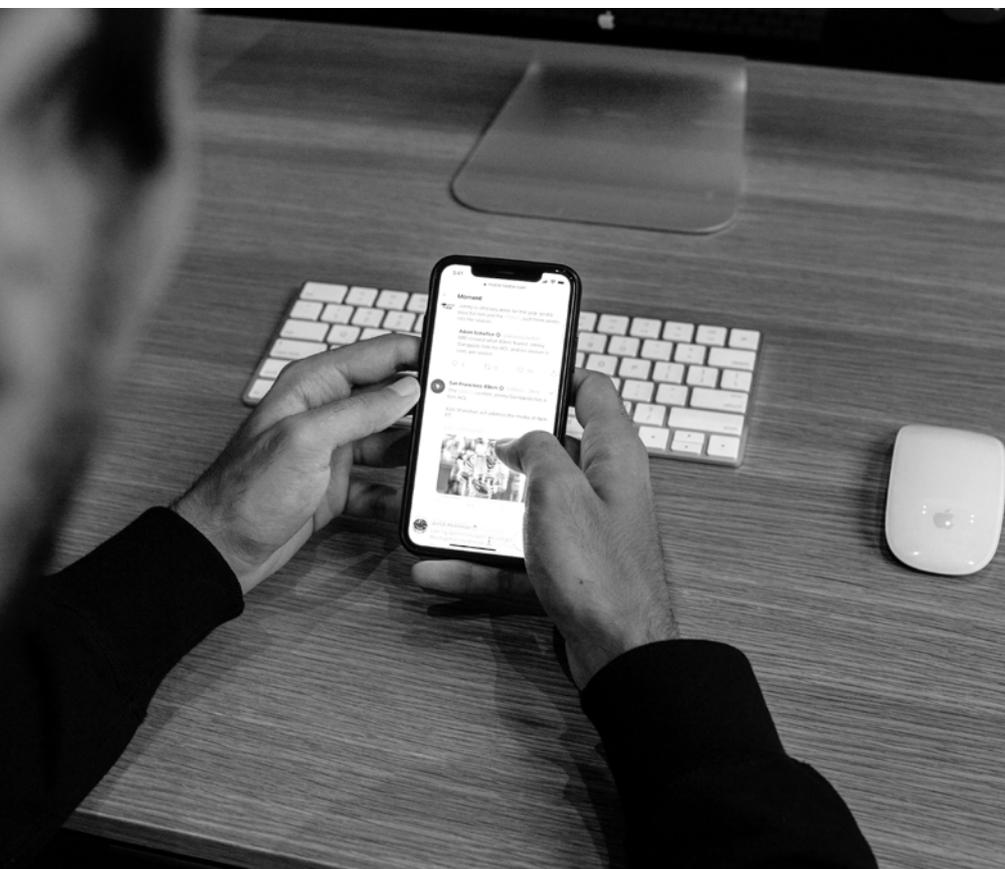
Maximizing strategic growth with AI, ML, and data governance

AI and ML are transforming the way organizations approach strategic growth. By analyzing large datasets, these technologies can uncover previously hidden patterns, thereby helping organizations make better, more informed decisions. However, as organizations increasingly adopt AI, the ability to maintain and improve data maturity and governance becomes even more important.

Abbu says, "Data has been a competitive differentiator in the [manufacturing] industry, allowing us to develop monetizable products and optimize our cost models while increasing our business volume."

Resilience in AI-enabled data ecosystems depends on the models being fed high-quality inputs, helping organizations be more responsive to market changes.

Power says, "If the data governing these [AI] models is poor, the models might be incorrect or biased, leading to trust issues among users, or regulatory challenges. Ensuring the quality of the data that trains AI models is essential for both internal trust and compliance with potential regulatory standards."

To fully harness AI's and ML's power for strategic growth, organizations must address data maturity by prioritizing robust data governance frameworks. Accurate, unbiased data is vital for effective performance as well as building transparency and trust across an organization. Without this, organizations risk eroding internal confidence and compliance with regulatory frameworks, potentially hindering long-term growth.

Organizations that prioritize data quality, resilience, and governance can better position themselves to leverage AI and ML to drive innovation, capitalize on market opportunities, and maintain a competitive edge in an increasingly complex business landscape. ▶

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SVP of Digital Technology and Data Analytics,
Bell and Howell

Data-driven decision-making for long-term business planning

Data-driven decision-making helps business models align with business objectives, evolving customer needs, market dynamics, and new risks.

Alaa Moussawi, Chief Data Scientist for the New York City Council, highlights how data can help simplify decision-making: "For non-technical users, our focus is on identifying projects that yield significant benefits with minimal manual effort. We often create dashboards that synthesize existing data into accessible formats, enabling users to make informed decisions."

A critical aspect of strategic growth is making sure that organizations can integrate ready-to-use data across systems. Haroon Abbu's organization achieves this by democratizing data.

"We adopt both a top-down and bottom-up approach, ensuring data is ready to use, managed properly, and integrated from various systems like ERP, CRM, and field service management. Ultimately, making clean data available to decision-makers is crucial for effective communication and fostering change within the organization," Abbu says. ▶

Power adds that integrating data linkages also helps create a holistic view for better decision-making: "Democratization of data suggests a self-service model where data is readily accessible and assembled. This requires a robust underlying infrastructure, including a massive data warehouse or lake with high-quality, well-managed data, and a governance platform that includes metadata management to ensure data quality."

Looking ahead, the key to successful data-driven decision-making lies in making sure that people and departments have access to the data they need. Data is only valuable if it is shared and placed in decision-makers' hands, allowing them to use it effectively to drive meaningful change. By democratizing data, businesses can empower their teams to make informed decisions that support long-term goals and adapt to new opportunities as they arise.

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One of the most exciting developments in data-driven decision-making is the creation of composite data products, which bundle various datasets to provide deeper insights for market expansion, product development, and customer engagement strategies.

"Ultimately, the goal is to create composite data products from these datasets that address specific needs," Power notes.

"By managing data as a product, you can determine which datasets are suitable for particular uses, trial them, and integrate them with other data to build solutions like AI models or dashboards."

As industries continue to evolve, those that prioritize data as a strategic asset have the advantage of staying ahead and positioning themselves for long-term success. ∎

CHAPTER THREE

Why reference data is key to accuracy and compliance

In financial services and other highly regulated industries, reference data is a critical asset that helps maintain and improve accuracy in transactions, reporting, and regulatory filings.

Reference data refers to the standardized information organizations use to classify and describe key entities such as customers, suppliers, financial instruments, and geographic locations. This data is not transactional, but it helps provide essential context that allows organizations to conduct business efficiently and compliantly.

Reference data plays a crucial role in MDM systems by helping maintain consistency across all data systems.

"Reference data is the key that brings all the data together," says a chief analytics officer from a major US bank. "It's a taxonomy that allows different lines of business, IT, and engineers to speak the same language."

For regulated industries, reference data is the foundation that supports compliance efforts. Poor reference data management can lead to significant compliance risks. ▶

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— chief analytics officer from a major US bank

The operational impact of poor reference data

Regardless of industry, poor management of reference data can lead to operational inefficiencies, misinformed decisions, and compliance risks.

These issues can range from minor operational hiccups to severe financial and regulatory penalties. For example, an incorrect legal entity name or address in a financial transaction could result in a failed transaction, regulatory scrutiny, or financial penalties.

One of the most common challenges with reference data is inconsistency across systems.

"Implementing effective master data management is still a challenge for many organizations...People are still struggling to bring the data together."

— chief analytics officer from a major US bank

In large organizations, various departments may use different versions of the same reference data, leading to discrepancies that can impact decision-making and compliance.

"Implementing effective master data management is still a challenge for many organizations," a chief analytics officer from a major US bank observes. "People are still struggling to bring the data together."

In this context, maintaining a "single source of truth" through an MDM framework can help all systems use consistently accurate reference data. ▶

Improving accuracy with reference data best practices

Organizations can adopt best practices for managing reference data through an MDM system. An effective MDM framework makes sure that reference data is accurate, up-to-date, and consistent across all systems and departments.

Consolidating reference data from various systems into a central MDM system can help organizations make sure all departments and business units use the same data. This reduces the risk of discrepancies and helps make sure all decisions are based on accurate, consistent information.

Another best practice is to regularly update and validate reference data to maintain its accuracy. Outdated reference data can lead to incorrect financial transactions, regulatory filings, and business decisions.

Finally, organizations should implement strong data governance policies to make sure reference data is managed effectively. Data governance encompasses the processes, policies, and standards that guide how data is managed across the organization. ■

CHAPTER FOUR

Data interoperability: the foundation for seamless operations

KEY FINDING

In industries such as financial services, health care, and insurance, data interoperability is essential to help data move seamlessly across departments and external partners when necessary.

Without data interoperability, organizations often face siloed systems and disjointed workflows that can hinder effective decision-making and compliance efforts.

"The biggest risk in data is lack of interoperability," says Abbu. "Without it, you can't trust your data, leading to increased manual labor and inefficiency. Ensuring interoperability is crucial because everything depends on it."

Achieving data interoperability can offer numerous benefits for organizations. The most immediate advantages are faster decision-making, reduced operational costs, and enhanced collaboration across business units and with external partners.

Data interoperability has the power to significantly enhance decision-making by providing seamless access to data from various sources, allowing different areas of an organization to access what they need to analyze trends and assess risks. It also reduces operational costs by reducing duplication and manual reconciliation across siloed systems, and by streamlining data management to improve efficiency. ▶

Interoperable systems can foster better collaboration, allowing for secure and efficient data exchange between internal teams and external partners, such as regulators and service providers, so all parties have access to consistent, up-to-date information. This is not always easy to achieve but is worth the effort.

"Interoperability is crucial for us, especially since we manage both cutting-edge and legacy systems," says Abbu. "This integration is essential, but it's challenging. We're an old company with many legacy systems alongside modern data lakes. Aligning all this data is an ongoing effort."

Driving interoperability with integration platform as a service

One of the most effective ways to achieve data interoperability is using integration-platform-as-a-service (iPaaS) solutions.

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IPaaS environments support the integration of diverse systems and data sources through robust application programming interfaces (APIs) and standardized protocols.

These platforms provide flexible, scalable solutions that allow organizations to connect disparate systems, automate data flows, and maintain data consistency across the enterprise.

"We utilize a platform-as-a-service approach to integrate legacy systems alongside modern data lakes," says Abbu. "By employing an integration service platform and using APIs, we connect everything from billing to customer systems."

Organizations can create a more seamless, integrated data ecosystem that supports operational efficiency and compliance by leveraging iPaaS platforms and APIs. This approach reduces the complexity of managing multiple systems and makes sure data is accessible across an organization. ▶

Managing data as a product for seamless interoperability

Another strategy for achieving data interoperability is treating data as a product. This means designing datasets that different systems can easily integrate and consume so they are ready for use in various applications.

By treating data as a product, organizations can create standardized, high-quality data packages that can be readily accessed and used by different departments and external partners.

"A significant part [of data interoperability] is managing data as a product," says Dan Power. "This means treating certain datasets as "published" — indicating they are finalized and reliable, explaining why, and making them available for analysis."

"The challenge lies in managing how data is shared — ensuring sensitive data is protected or tokenized while still providing useful access," he continues.

However, achieving this level of transparency and integration requires overcoming the challenges posed by low data maturity, siloed systems, and fragmented processes. Without a unified, clean data ecosystem, organizations may struggle to maintain operational efficiency, regulatory compliance, and a competitive edge.

By adopting strategies such as using iPaaS platforms, treating data as a product, and creating robust data linkages, organizations can address these challenges and achieve interoperability. In doing so, they have the power to build greater resilience and adaptability, allowing them to operate effectively in an environment marked by exponential risks and increasing complexity.

As organizations continue to navigate complex regulatory frameworks and highly competitive markets, data interoperability, MDM, and data governance can play a pivotal role in determining their success.

Those who invest in building mature, interoperable data ecosystems are arguably better positioned to seize opportunities, foster innovation, and maintain compliance in a rapidly evolving commercial landscape. ∎

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SVP of Digital Technology and Data Analytics, Bell and Howell

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Solutions for Master Data

As organizations search for ways to optimize their data management strategies, master data management (MDM) rises to the top as an effective, secure, and scalable solution. Company reference data, when paired with an enterprise master data solution, assists organizations with controlling their data and unlocking numerous potential monetary and productivity growth opportunities. Our global company reference data — encompassing firmographics, company size metrics, and corporate hierarchies, along with our proprietary data types — caters to an enterprise's functional and analytical requirements. With industry-leading coverage of over 550 million entities, our company reference data promotes enterprise-wide interoperability and is available via a wide range of data integration options and applications to provide seamless delivery to almost any third-party or in-house data management system.

www.moodys.com/master-data

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Gareth Becker is an experienced editor and content marketer and produces B2B stories that focus on emergent trends in data and analytics, cloud computing, information security, and more.

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