Microsoft

Redefining Risk Management in an Era of Data and Disruption

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1. Introduction

The COVID-19 pandemic has affected all industries in an unprecedented manner. Financial services firms in particular are dealing with uncharted territory in terms of managing risk, including the physical risk of keeping employees safe, managing business continuity, recovering from the impact on their customer base, and reimagining the new blueprint for managing long-term risk.

As a result, market risk leads in financial services institutions face a seemingly daunting task. They must quantify the impact of dynamic shifts with an even broader perspective that factors in environmental, governance, and related impacts on lending and investment portfolios. At the same time, they have to conduct predictive analyses in an environment that is currently defying historical models. In addition, the impact of falling interest rates and spikes in costs from a resourcing and operations stability standpoint makes the situation even more complex.

Innovative technologies can be a critical tool and a key enabler in meeting these challenges. Our clients are reprioritizing projects to recover from the immediate impact and redefine the long-term strategy to manage risk across the enterprise. Legacy systems hamper the ability to go from risk data to insights in a seamless and timely manner, a requirement that is more critical than ever before.[1]

Financial institutions will need to fundamentally rearchitect their data management techniques and risk methodologies to reflect the new normal.[2] Adding to these pressures on financial services firms are pending regulatory deadlines, as well as demanding revenue and margin goals, prompting them to reassess their overall approach to manage the complex and interconnected nature of risk.[3]

[1] Why Banks Can't Delay Upgrading Core Legacy Banking Platforms, EY, 2019.
[2] Banking Models after COVID-19: Taking Model-Risk Management to the Next Level, McKinsey & Company, 2020.
[3] 2019 Global Risk Management Study, Accenture, 2019.

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2. Modernizing risk management

A large part of effective risk management involves accurate reasoning and decision-making in real-time using extraordinarily large and complex data sets.

Risk managers have used a number of risk models in the past to achieve insights. However, these models are insufficient in a post-pandemic world. **According to a recent McKinsey & Company report, there are three reasons why:**

- **First, model assumptions and boundaries defined at the design stage were developed in a pre-pandemic world.**
- **Second, most models draw on historical data, without the access to high-frequency data that would enable recalibration.**
- **Finally, while access to the needed alternative data is theoretically possible, models have been unable to integrate new information in an agile manner, because the systems and infrastructure on which they are built lack the necessary flexibility.[4]**

[4] Banking Models After COVID-19: Taking Model Risk Management to the Next Level, McKinsey & Company, 2020.

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Banks need to prepare an agile approach for adapting and evolving their risk processes and tools across market risk and credit risk. We will also begin to see an even greater focus on operational risk and the need to adjust stress-testing and prioritize model risk management and redevelopment. This speed and flexibility support ongoing changes in an organization's strategic direction, either proactively or reactively.[5]

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[5] "Accenture Capital Markets Technology 2022," Accenture, 2018.

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3. Examining the right data

The need for good quality data cannot be over-emphasized due to its directly proportional relationship with accurate insights, lack of which can have a material impact on reputation and long-term viability. Until recently, sound principles and implementation of fundamental and market data with reasoning and well-established models could be considered solid from a design principle standpoint. This provided the foundation for a cohesive risk management platform. Today, this data provides only half the picture to evaluate inherent risk.

Now, financial institutions have to include all types of unstructured data and alternative data, comprising news, social media, satellite information, geo-spatial information, climate metrics, and several other factors, to get a holistic view on risk with their end-clients.

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4. Data management and insights

As new technologies increasingly replace outdated systems, four trends in data management and analysis have emerged that are pressuring risk managers to develop new strategies and practices.

Individual data warehousing projects have created data silos. The time and cost of bridging these silos have been prohibitive.

The increased volume of data that needs to be examined is difficult to process using traditional analytics tools.

The many forms of unstructured data that have emerged to provide even more valuable insight into risk cannot be analyzed using traditional risk management frameworks.

Uncertainty in the markets and deeply disruptive events require daily recalibration of risk models, which many systems are unable to perform.

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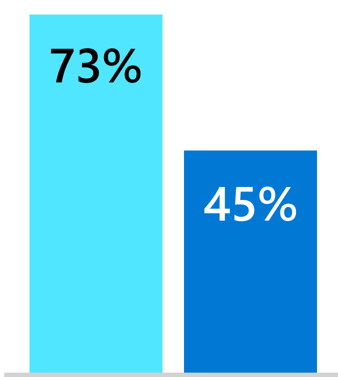
To tackle these issues, institutions must analyze all of their data, structured and unstructured, logically on a central hub/data lake. Data management is difficult and complex, but compiling data in a cohesive manner enables the ability to develop analytics that can offer the insights needed, quickly react to new market conditions, and adapt new risk modeling methodologies as needed.

Financial institutions are increasingly turning to the cloud to power their risk platforms that offer scalable, hyperscale architectures to model and compute large complex datasets and enable risk and business teams to flexibly tweak as needed with modern analytics. These platforms offer organizations the flexibility to adapt to changing circumstances and regulations without overhauling systems.

Firms are shying away from previous alternatives, which involved developing in-house, custom applications to manage and analyze data, requiring significant investment, ongoing management, and maintenance by IT. Even with significant investment, these systems have not been able to keep up with the pace of change among the business or regulatory environments especially in such unprecedented times.

Additionally, centralizing data and cloud solutions enables easier use of AI and machine learning to deliver analytic insights on broad data sets.



According to Accenture, among machine-learning users in the field of risk management, 73 percent are satisfied with two-year progress on projects versus 45 percent for users who don't use machine learning.[6]

[6] "2019 Global Risk Management Study," Accenture, 2019.

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5. TD Securities moves to the cloud to increase agility, compute power

TD Securities, the brokerage arm of TD Bank Group, is a leading provider of advisory and capital markets products and services. The company uses its xVA software to price complex derivative products in a limited amount of time. Running these sophisticated algorithms requires a massive amount of compute power.

The company realized that the public cloud would be the best option for the compute performance they needed while simultaneously keeping infrastructure costs low. They turned to Microsoft Azure to address their known performance needs while gaining the flexibility to expand and contract as those needs change.

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Microsoft Azure gave us the ability to change the configuration of our infrastructure almost on demand. That allows us to iterate very quickly through different solutions and find the right fit for the business problem, or for the client, almost at no notice and respond to the client's demands on the spot.

Mikhail Dron,
Managing Director and Vice President,
TD Securities

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6. Risk management in the future will need to consider ESG

Good risk managers have made it a practice to evaluate environmental, social, and governance (ESG) factors, with research showing that companies with good ESG practices financially outperform competitors.[7] According to the Financial Times,[8] more than half of ESG investment funds outperformed the wider global stock index in the market downturn following the COVID-19 pandemic. This has been due in part to avoiding investment in the oil industry. Some analysts also suggest that companies with good ESG practices scrutinize their businesses more thoroughly, identifying issues and fixing them quickly.

According to the Financial Times,[8] more than half of ESG investment funds outperformed the wider global stock index in the market downturn following the COVID-19 pandemic.

[7] "Five Ways That Create ESG Value," McKinsey Quarterly, 2019.
[8] "ESG Funds Continue to Outperform Wider Market," Financial Times, 2020.

In October 2019, the Bank of England became the first regulator to stress test its entire financial system against different climate scenarios, from net zero carbon by 2050 to a more catastrophic "business as usual" scenario.[9] The bank's governor reports that "conversations about climate-related financial risks have moved from the fringes to the forefront."

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Regulatory drivers and pressure from institutional investors will create a notable shift. Instead of voluntary disclosures and ad-hoc responses to questionnaires by corporations, there will be an industry-standards-based process, framework, and policy on how ESG data is sourced, managed, analyzed, and reported. This will reduce subjectivity and ambiguity while generating more robust metrics and factors that are uniform across providers. This will make comparisons and rankings of corporations regarding their ESG policies more accurate.

In addition, it will support governance leading to stronger risk management frameworks to measure the impact of climate-related risks to social and governance factors across lending, trading, and portfolio optimization.

Microsoft is working with clients to power innovative solutions that use cloud services and AI to support ESG requirements. For example, BNY Mellon collaborated with Microsoft to develop three new data and analytics solutions offerings running on Azure that help investment managers support the customization of investment portfolios to preferred ESG factors.[10]

Microsoft is working with clients to power innovative solutions that use cloud services and AI.

[9] "BofE to Stress Test Financial System Against Climate Pathways," Finextra, 2019.
[10] "BNY Mellon Launches New Data and Analytics Solutions Offerings, Collaborates with Microsoft to Build Solutions on Microsoft Azure," PR Newswire, 2020.

7. Regulatory compliance

Dramatic regulatory changes are also prompting financial institutions to reassess their risk management approach and models. The deadline for global compliance with the Fundamental Review of the Trading Book (FRTB-January 2022) and the revised rules on capital and liquidity (CRR2-December 2020 and CRDV-May 2021) as well as the overhaul of LIBOR are approaching, as are many other regulatory deadlines around the world. Many financial services institutions have taken some steps to adhere to new compliance guidelines. Some have also begun to rethink their digital strategies to provide greater efficiency and real-time insight.

However, there is still massive opportunity for change. Regulatory reporting uses different formulas than other risk-management scenarios. Many organizations are turning to managed services to handle regulatory adherence while focusing their primary risk work on core areas of the business.

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Global fines and penalties against financial institutions hit $36 billion in 2019, as ramifications from the 2008 financial crisis continue to reverberate throughout the financial services industry.

Compliance Week,
February 2020[11]

[11] "Study: Post-financial Crisis Fines Against Financial Institutions Hit $36 Billion," Compliance Week, 2020.

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8. How Microsoft can support your platform modernization journey

Microsoft recognizes that companies need agility in a rapidly changing market. Our comprehensive cloud platform, Microsoft Azure Cloud, empowers companies to respond to shifting requirements, providing the analytics and collaboration capabilities to identify trends, as well as a seamless framework to adapt risk management business processes.

Azure offers data sourcing, visualization, and reporting through its connections to multiple applications. This gives risk management leads a fuller picture of risk. In addition, Microsoft's large ecosystem of partners can provide solutions that specialize in solving unique industry, regulatory, and risk challenges—all built on Microsoft Azure Cloud.

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With end-to-end capabilities, Microsoft has made investments in enabling our clients in their cloud journeys in a secure, compliant manner via a multipronged strategy:

- **Direct engagements with financial services regulators to educate, build trust, and influence modernization of regulation.**
- **Execute with customers to ensure our cloud services and commercial terms meet regulatory requirements.**
- **Build community among regulators and customers to enable progressive players to influence others and establish a feedback loop to enhance and propel our compliance leadership.**

Microsoft

To learn more about how we can help you and your business, visit our Banking and Capital Markets site