



Digitalization Challenges on Management Decisions During the COVID-19 Pandemic in Romania

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ABSTRACT

Organizations with pre-existing digital infrastructures navigated disruptions more effectively, while those lacking digital strategies faced greater challenges in decision-making and workforce coordination. This research looks into the accelerated impact of digitalization on managerial decision-making process during the COVID-19 pandemic in Romania, by conducting 11 interviews with managers from various companies and industries. Results point out that an accelerated adoption rhythm of digital tools was necessary for remote work adaptation, business continuity and operational resilience. The study highlights both opportunities and challenges of digital transformation, emphasizing the need for digital skills development, cybersecurity enhancements, and adaptive crisis management. Many digital changes adopted during the pandemic have become permanent business practices, reshaping long-term strategies. The research underscores the importance of integrating digitalization into strategic planning to ensure business sustainability. Future studies should explore quantitative validations, industry-specific challenges, and the long-term impact of digital transformation beyond the pandemic.

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1. Introduction

The COVID-19 pandemic accelerated the digital transformation of businesses worldwide, forcing organizations to adapt rapidly to new technological solutions. The sudden shift to remote work, digital collaboration, and automated processes reshaped managerial decision-making, challenging traditional operational models and strategic frameworks. Across industries, leaders had to navigate uncertainty, economic fluctuations, and workforce restructuring, making digitalization a critical enabler of resilience and adaptability. The adoption of digital tools and platforms became essential for maintaining business continuity, workforce efficiency, and customer engagement. Organizations that had already integrated data-driven decision-making, cloud computing, and AI-driven automation were better positioned to manage disruptions. However, many businesses had to accelerate digital transformation efforts overnight, exposing gaps in technological readiness, digital literacy, and cybersecurity preparedness.

Beyond immediate operational concerns, the pandemic reshaped managerial mindsets toward digital adoption, emphasizing the need for agile decision-making and strategic foresight. Companies that traditionally relied on face-to-face interactions and hierarchical structures found themselves experimenting with decentralized decision-making and virtual leadership models. Digitalization was no longer a matter of competitive advantage but a fundamental necessity for survival in an increasingly unpredictable business environment. This shift also raised critical questions regarding long-term workforce flexibility, hybrid work models, and the integration of digital culture into corporate strategies.

Furthermore, the rapid expansion of digital processes introduced new strategic dilemmas for organizations. Managers had to balance efficiency with employee well-being, ensuring that digital transformation did not lead to technological fatigue or loss of human connection.

Also, the accelerated digitalization of many processes has provided new strategic challenges for organizations. Managers were put through having to balance the efficiency with the employee well-being, making sure that they did not get too distant or technological fatigue from this digital transformation. Relying too much on real-time analytics, AI support on decision making and other collaborative tools, imposed on leaders to upskill their competences in digital leadership, cybersecurity risk management and data-driven forecasting (Chen & Liu, 2021). These challenges reviewed the importance of digital skillset on almost every

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level of the company and a need for even more continuous training for employees and change management approaches.

The role of this article is to explore how digitalization makes up for managerial decision-making during the COVID-19 pandemic in Romania with a clear focus on how business leaders managed to adapt to technological forced changes. By looking into insights from managers from many business sectors, this research expects to reveal a better understanding how digital tools have influenced strategic decision-making, long-term transformations and organizational resilience. Furthermore, the discussions shed light on key challenges and opportunities that showed up during the pandemic, revealing insights of the upcoming digitalized business management.

2. Literature review

2.1. The Evolution of Digitalization and Its Role in Managerial Decisions

Digitalization has represented a radical shift in the way organizations conduct their activities and make decisions. Over the years, this transformation has evolved from the simple automation of operational processes into an integrated approach that affects all aspects of organizational activity. From the emergence of computers and the first information systems in the 1960s and 1970s to the development of emerging technologies such as big data, predictive analytics, and artificial intelligence (AI) today, digitalization has come a long way and has become a major force in the global business environment.

In the context of digitalization's impact on the business environment, the term "major force" refers to a significant phenomenon or change that profoundly and unpredictably influences the way businesses are conducted worldwide. Digitalization has become such a force, representing the transition from predominantly analog information processing and workflows to a digital and technology-driven approach.

The evolution of digitalization over time reflects a continuous and accelerated increase in the use of technology within the business environment. Since the advent of the first computers and information systems in the 1960s and 1970s, digitalization has evolved rapidly, encompassing a wide range of emerging technologies such as big data, predictive analytics, and artificial intelligence. This ongoing evolution has brought significant changes to how organizations operate, influencing aspects such as communication, workflows, decision-making processes, and relationships with clients and business partners.

Through digitalization, companies have become more efficient in managing their operations, gained access to more relevant data and information, and been able to offer innovative products and services tailored to market demands. Moreover, digitalization has enabled greater flexibility and agility in adapting to environmental changes and customer requirements, leading to increased competitiveness and organizational resilience.

An important aspect of digitalization is its ability to transform data into useful information, providing organizations with clearer insights into their operations. By collecting and analyzing data, organizations can identify patterns, trends, and opportunities that might otherwise go unnoticed. For example, in a recent study conducted by Chen and Liu (2021), it was shown that the use of big data analytics in managerial decision-making can help organizations identify new market segments and develop customized strategies to better meet customer needs.

Another critical aspect of digitalization is its capacity to enhance operational efficiency and productivity. Through process automation and the implementation of advanced information systems, organizations can reduce costs and the time required to carry out daily activities. For instance, a study conducted by Smith and Johnson (2020) found that the implementation of Enterprise Resource Planning (ERP) systems led to a significant increase in operational efficiency across various industries, such as manufacturing, distribution, and services.

In addition to operational efficiency, digitalization can also improve the managerial decision-making process by providing more accurate and timely information. By leveraging technologies such as predictive analytics and artificial intelligence, organizations can anticipate future trends and make more informed and faster decisions. For example, in a recent study conducted by Wang and Zhang (2021), it was demonstrated that the use of machine learning algorithms in decision-making processes significantly increased the accuracy and effectiveness of decisions in various fields, including marketing, finance, and human resources.

In conclusion, the evolution of digitalization has had a profound impact on managerial decisions by facilitating data collection and analysis, enhancing operational efficiency, and improving the decision-making process.

So, in order to fully grasp the potential what digitalization can bring to the table, companies must invest in new technologies and develop internal abilities to manage and process large amounts of data.

2.2. The Impact of the COVID-19 Pandemic on Digitalization and Managerial Decisions

The COVID-19 pandemic acted as a mechanism for accelerating the digitalization process within organizations and had a huge impact on managerial decision-making. In the case of having to manage restrictions and social distancing and remote work as consequences of the pandemic, companies have had to quickly adapt to the digital options to keep their operations level as much as possible as efficient.

One of the most notable changes brought about by the pandemic was the widespread adoption of remote work and collaborative technologies. Organizations have had to invest in IT infrastructure and adopt solutions such as video conferencing platforms, online project management tools and real-time collaboration software to enable the pandemic led to a significant rise in telemedicine and health monitoring applications, while in education, it prompted a rapid transition to online learning and the use of e-learning platforms team communication and coordination. This shift significantly influenced managerial decision-making, as managers had to learn how to manage virtual teams and make decisions under conditions of uncertainty and rapid change (Gebauer et al., 2020; Wamba et al., 2017).

Moreover, the pandemic accelerated the adoption of digital technologies across various sectors, including e-commerce, healthcare, and education. Organizations in these industries had to quickly transform their business models and develop digital solutions to meet increased demand and adapt to new customer requirements. In the health care sector for one, a series rise in telemedicine and health monitoring applications had risen because of the pandemic, while in education it, online learning solutions through e-learning platforms took over.

The COVID-19 also put into perspective that some problems regarding to digitalization and managerial practices, where some organizations had to forcefully implement digital technologies despite cultural resistances and constraints. Moreover, this had generated a whole new set of challenges in the area of cybersecurity and how to protect data that became more sensitive in the online environment. The pandemic was seriously felt in every aspect of management, bringing about both opportunities and challenges, as researches published by McKinsey Digital (2020), Deloitte (2020), and Capgemini (2020) point out that it increased the rhythm of technology adoption at an unprecedented pace.

According to McKinsey (2020), the pandemic triggered a sudden shift toward the use of technology across all economic sectors, with companies needing to quickly adapt their operations to survive and remain competitive. This research highlights that the pandemic prompted many organizations to invest heavily in digital solutions to address challenges and maintain their activities in a remote work environment. A study conducted by Deloitte found that over 80% of organizational leaders reported that the pandemic hastened the technology adopting processes in their organization. An estimate of 40% of the companies that were surveyed expressed that their digitalization rate was increased by at least two years. Moreover, Capgemini reports indicates that the pandemic accelerated digitalization globally at an unprecedented pace. According to this report, 61% of companies affected by the pandemic accelerated their digital transformation plans, and 80% of respondents stated that they would continue to accelerate digitalization and digital transformation after the pandemic.

To address new demands and challenges, organizations must continue investing in digital technologies and developing internal capabilities to effectively manage the digitalization process and make informed decisions in a rapidly changing environment (Westerman et al., 2011; Bughin et al., 2018).

The discussion around the impact of digitalization on management is by no means new. Previous studies have highlighted the importance of digitalization in increasing operational efficiency, improving customer service, and enhancing organizational competitiveness (Chesbrough & Spohrer, 2006; Brynjolfsson & Hitt, 1996). Additionally, the decisive role of managers in the adoption and implementation of digital technologies within organizations has been emphasized (Zhu et al., 2006).

In the context of the COVID-19 pandemic, digitalization became a strategic priority for many organizations that were forced to accelerate their digital transformation to cope with new challenges and opportunities. Studies have highlighted the positive impact of digitalization in maintaining business continuity and adapting to the new conditions imposed by the pandemic (Sutherland et al., 2020; Galera et al., 2021).

2.3. Impact of the COVID-19 Pandemic across various sectors

In equity-based financing and financial management, a stable liquidity management and company size, led to improving the companies' economic activities during the pandemic. Throughout the analyzed period (June 2019 – June 2020), the total net profits of the market declined by 37.43%. Furthermore, it was observed that, regardless of company size, all service sectors, including hotels and restaurants, the pharmaceutical industry, and the real estate sector, experienced significant declines. In contrast, small companies in sectors such as agriculture, commerce, construction, IT research and development, and transport and logistics recorded significant improvements in net profits during the pandemic compared to the pre-pandemic period (Achim et al., 2022; Dinu & Bunea, 2022).

Regarding labor market, among the identified benefits of remote work, enforced due to COVID-19 restrictions, were time savings from reduced commuting, lower stress caused by traffic congestion or crowded public transport, increased flexibility in work schedule organization, the opportunity to spend more time with family, and the ease of organizing meetings via video conferencing platforms (Rădulescu et al., 2021).

In the Banking and Consumer Behavior, during the pandemic, the use of banking services increased compared to the pre-pandemic period. Close monitoring of customer perceptions and needs was necessary, particularly because a significant portion of users was expected to continue using digital banking services even after restrictions were lifted. Additionally, efforts to provide online financial education courses were intensified

to enhance users' digital competencies and familiarize them with digital banking channels (Baicu, Gârdan, & Epuran, 2020).

On certain specific sectors, such as tourism, between March and June 2020, the COVID-19 crisis had a severe financial impact on businesses, entrepreneurs, and the workforce in the Romanian tourism sector. The pandemic placed unprecedented pressure on Romania's tourism ecosystem. Respondents in a study estimated a decline in revenue between 70% and 90% (Volkman et al., 2021). In 2021, tourism was expected to be sustained mainly through active tourism, including agritourism, excursions, ecotourism, and cycling tourism. It was also anticipated that nature reserve tourism would gain popularity, while spa and festival tourism would be the most affected (Matei, Chiriță, & Lupchian, 2021).

Mobility restrictions imposed during the pandemic significantly impacted the HoReCa sector, creating a high level of uncertainty. However, flexible organizations adapted to the context by integrating digital technologies into the ordering and delivery process, developing their own delivery services, or using pre-existing ones. Despite the lack of strategic planning and crisis management strategies, many organizations managed the situation as effectively as possible. Nonetheless, some businesses were forced into bankruptcy due to restrictions and the inability to continue operations (Motoc, 2020).

In the agriculture sector, most farmers complied with the measures imposed by authorities to limit the spread of COVID-19 and reported satisfaction with these policies. However, they faced challenges in adopting technology and selling agricultural products, highlighting the vulnerability of Romania's agricultural systems. This suggests the need for close monitoring and support of the agricultural sector to maintain food security during crises. Meanwhile, similar situations present great opportunities to score agricultural production systems and create new strategies for innovation, sustainable practices and digital solutions (Popescu & Popescu, 2022).

The use of digital tools in customer and employee relations reflected that only 34.9% of organizations in Romania used digital tools for customer communication (Tartarin, Țichindelean, & Haaker, 2020). However, digitalization contributed to the growth of e-commerce activities in Romania. While digitalization was considered a key factor in building resilient business models during the pandemic, effective implementation requires investments not only in technology but also in employee training to address new demands and challenges.

3. Research Methodology

This research employs a qualitative approach to explore how digitalization influenced managerial decision-making during the COVID-19 pandemic in Romania. The study is based on in-depth interviews conducted with managers from various industries, aiming to capture their perspectives on the adoption and impact of digital tools in organizational decision-making processes.

3.1. Research Design and Approach

The research follows a qualitative exploratory design, as it seeks to understand the experiences, perceptions, and strategic adjustments made by managers during the pandemic. Given the complexity of digital transformation within organizations, qualitative methods were chosen to provide nuanced insights that may not be captured through quantitative surveys alone.

3.2. Data Collection – In-depth Interviews

The primary data collection method consisted of semi-structured in-depth interviews with 10 managers from different industries in Romania. The selection criteria for participants included: "holding a managerial position before and during the COVID-19 pandemic", "having direct involvement in decision-making processes related to digital transformation", "representing diverse industries, including technology, media, advertising, and software development".

The interview questions were designed based on an extensive literature review, ensuring that the discussions covered key topics relevant to digitalization and managerial decision-making. The interview guide included the following themes:

- a. Digital tool adoption: Experiences with digital tools before and during the pandemic.
- b. Crisis management strategies: The existence and effectiveness of contingency plans before COVID-19.
- c. Digital skills of employees: The role of digital competencies in managing organizational transitions.
- d. Organizational agility: How companies adapted their operations to digitalization pressures.
- e. Challenges and opportunities: Key barriers and benefits experienced in the digital transformation process.

Interviews were conducted remotely, using video conferencing tools to ensure accessibility and flexibility for participants. Every interview lasted between 45 and 60 minutes in order to give depth to the discussions while maintaining a structured approach.

3.3. Data Analysis

The collected data was written down and thematically analysed, identifying patterns and insights that relate to the digitalization impact on managerial decision-making. The analysis focused on common strategies

and challenges faced by managers in digital transformation, comparative perspectives on digital adoption before and during the pandemic, perceived long-term effects of digitalization on business operations.

To enhance validity and reliability, findings were cross-referenced with insights from existing literature, ensuring alignment between theoretical perspectives and real-world managerial experiences.

3.4. Ethical Considerations

Participants provided informed consent before the interviews, ensuring confidentiality and voluntary participation. All data was anonymized to protect the identities of respondents and comply with ethical research standards.

4. Results and Discussion

The qualitative research involved 10 in-depth interviews conducted between June and July 2024 with managers from diverse industries. Participants were selected to ensure varied perspectives on digitalization and managerial decision-making during the COVID-19 pandemic. The snowball sampling method was used to expand the participant pool, leveraging professional networks to capture a wide range of organizational experiences as seen in table 1.

Table 1. Interviewed professionals

Name	Role	Experience	Industry	Team size
V.Ş.	Head of Digital Media	15	Media	60
F.M.	Scrum Master	8	Software Development	6
C.P.	Head of Digital Sales	25	Salex	5
S.T.	Financial Manager	9	Media	3
A.I.	Digital Sales Specialist	12	Advertising	8
T.P.	Partner Manager CEE	17	Media	25
C.Ş.	Product Marketing Manager	20	Cybersecurity	40
S.C.	Director agentie	30	Banking	6
A.G.	Head of Research	17	Media	3
A.S.	Marketing manager	15	Retail	9
D.P.	Chief Commercial Officer	23	Retail	70

4.1. The Impact of COVID-19 on Managerial Decision-Making

Respondents described varied experiences regarding the transition to remote work. Some organizations adapted quickly, supported by strong IT and HR infrastructures, while others expressed elevated stressful and uncertain status. Communication and teamwork were identified as main aspects, where managers relying on video conferencing tools and digital collaboration platforms worked on keeping a similar efficiency level.

Throughout many industries, traits like agility and digitalization were identified as vital in order to keep business alive. Companies that had experience with remote work and workflows navigated the transition better while companies that had less such experience and initiatives struggled with employee coordination.

4.2. Digital Tool Adoption Before and During the Pandemic

Before the COVID-19 pandemic, many companies already had adopted digital tools such as Adobe Analytics, Salesforce, Hubspot, and Microsoft Teams for customer analytics, automated communication and performance monitoring. Even so, the volume of utilizing varied technologies differed from company to company, where some had integrated predictive analytics and cloud computing while others just kept a basic communication tool like Zoom or Google Hangouts.

In the pandemic, reliance on digital platforms had increased more and more and managers expressed the importance that these collaborative digital platforms had gained, making them indispensable for performing, ensuring transparency and clear workflows, as well as AI analytics for forecasting and resource planning.

4.3. Crisis Preparedness and Organizational Agility

The research points out a considerable variety in adopted risk management strategies. Few companies had already put in place contingency plans but found them useless for such a public health crisis. Others lacked formal crisis strategies, leading to reactive decision-making and spontaneous solutions. Companies with structured business continuity plans managed the disruption more efficiently, implementing team rotation models and hybrid work strategies to ensure operational resilience.

Managers stressed the importance of organizational agility, with those in agile companies reporting better adaptation to market shifts and operational disruptions. Firms that had experimented with digital

transformation before the pandemic found it easier to scale remote work, optimize digital workflows, and adjust to changing market demands.

4.4. Digital Skills and Workforce Adaptation

The pandemic exposed gaps in digital competencies, with significant variation in training initiatives across organizations. Some companies had ongoing digital upskilling programs, particularly in cybersecurity, data analytics, and cloud computing, while others lacked formal employee training frameworks.

Post-pandemic, organizations intensified digital training efforts, introducing mandatory online learning programs and expanding AI and automation-focused training. Respondents agreed that pre-existing digital skills among employees significantly influenced adaptation speed, with tech-savvy teams transitioning more seamlessly into remote work environments.

4.5. Challenges and Opportunities in Digitalization

While digitalization facilitated remote operations, key challenges included security concerns like protecting sensitive data and ensuring cybersecurity in a fully remote environment, platform overload where managing multiple digital tools across partner organizations led to inefficiencies and integration challenges. Employee resistance appeared when adapting to new technologies required extensive training and change management strategies. Loss of face-to-face collaboration in particularly in industries reliant on in-person interactions, the digital shift impacted team dynamics and decision-making processes.

Despite these challenges, the pandemic-driven digital transformation created significant opportunities, such as: expansion of remote work models, leading to improved work-life balance and reduced commuting stress, increased reliance on data-driven decision-making, leveraging AI and machine learning for enhanced forecasting, greater flexibility in workforce management, allowing for hybrid work arrangements and increased global talent accessibility. Other industry-specific adaptations include adoption of digital banking services surged, prompting firms to enhance customer digital literacy through online financial education, or in tourism where the industry suffered a 70–90% revenue drop (Volkmann et al., 2021), leading to shifts towards agrotourism, ecotourism, and digital service integrations also in agriculture where farmers struggled with technology adoption and product distribution, highlighting vulnerabilities in Romania's agricultural supply chains and not lastly in retail & e-commerce where organizations expanded digital sales platforms, investing in automated supply chain management and AI-driven customer insights.

4.6. Discussion and Implications

Findings suggest that pre-existing digitalization efforts were a key determinant of resilience during the pandemic. Organizations with strong digital infrastructures and agile management practices successfully navigated disruptions and leveraged opportunities for long-term transformation.

This study underscores the critical role of digital skills development, proactive risk management, and technological integration in shaping post-pandemic organizational strategies. The findings offer practical insights for business leaders, highlighting the need to invest in continuous digital transformation, workforce upskilling, and adaptive crisis management frameworks to sustain competitive advantages in an increasingly volatile environment.

5. Limitations and Further Research

Even if this research provides valuable insights importance of digitalization on managerial decision-making during the pandemic, it has some limitations. Firstly, the research being qualitative in nature and based on in-depth interviews with 11 managers from various industries is only a general point of start for such a study. While this method allows for a deep understanding of managerial perspectives, the findings cannot be generalized to all organizations. A larger, more diverse sample across multiple industries and hierarchical levels would offer a broader perspective on the long-term implications of digital transformation. Additionally, the study primarily focuses on managerial decision-making, without extensively capturing the perspectives of employees, customers, or technology providers, who are also key stakeholders in digitalization processes.

Further research should consider quantitative studies to validate these findings on a larger scale, assessing measurable impacts of digitalization on business performance, employee productivity, and customer engagement. Additionally, a comparative analysis between industries could highlight sector-specific barriers and accelerators of digital adoption. Future studies could also explore the role of emerging technologies, such as AI, blockchain, and IoT, in shaping digital transformation beyond the pandemic. Finally, longitudinal research tracking the evolution of digital practices over time would provide a clearer picture of how organizations sustain digital innovation in a post-pandemic business environment.

6. Conclusions

This study brings out a detailed analysis of the impact of adopting digital tools for managerial decision-making process during the COVID-19 pandemic, concluding from 11 in-depth interviews with managers across various industries in Romania. The findings highlight that digitalization was not merely a temporary adaptation

strategy but a transformational force that reshaped managerial approaches, operational frameworks, and business resilience.

The accelerated adoption of digital tools played a critical role in enabling remote work, maintaining communication, and guaranteeing business stability. Organizations with pre-existing digital infrastructures adapted more efficiently, while those with limited digital maturity faced significant challenges in transitioning to new work models. As one participant noted, *"Before the pandemic, we were only experimenting with digital tools—now, they are at the core of our decision-making process."*

A key takeaway from the research is that digitalization facilitated not only survival but also innovation. Several managers reported that their organizations expanded their use of AI-driven analytics, cloud-based collaboration tools, and process automation to improve efficiency and reduce operational bottlenecks. One respondent emphasized, *"We initially turned to digital solutions out of necessity, but we soon realized they opened new opportunities for optimizing our workflow and scaling operations faster than before."*

Despite its advantages, digitalization also introduced significant challenges. The lack of digital skills among employees, the need for cybersecurity enhancements, and integration difficulties between legacy systems and modern technologies were frequently cited concerns. As one manager explained, *"We underestimated how difficult it would be to transition an entire workforce to remote operations overnight. The learning curve was steep, but we had no alternative."* This highlights the importance of structured digital training programs to ensure that employees can effectively leverage digital tools in an evolving business environment. Another critical insight is the shift in organizational agility and crisis management. Many companies lacked formal contingency plans for a public health crisis, and their ability to adapt depended largely on leadership responsiveness and digital readiness. One interviewee noted, *"We had a risk management plan in place, but it never accounted for a scenario like this. We had to improvise, and digital tools became our best ally."* Organizations that had previously embraced agile management principles found it easier to reconfigure their operations, restructure teams, and implement flexible work policies.

The findings also suggest that some pandemic-induced digital changes have become permanent. While there was initial uncertainty regarding the longevity of remote work and digital collaboration, most participants reported that their companies continue to rely on digital platforms for hybrid work models, data-driven decision-making, and customer engagement. *"What started as a crisis-driven necessity has now become a competitive advantage,"* remarked one manager, reinforcing the idea that digital transformation is no longer optional but essential for long-term business sustainability.

Moving forward, organizations must integrate digitalization into strategic planning to ensure sustained growth, operational resilience, and adaptability to future disruptions. The research highlights the need for continued investments in digital skills development, AI-driven analytics, and cybersecurity to mitigate risks and enhance efficiency. Additionally, collaborative innovation with technology partners and industry-wide knowledge-sharing will be key drivers in shaping the next phase of digital transformation.

Future research should consider quantitative analyses to validate these findings across a broader sample size and explore sector-specific variations in digital adaptation. Moreover, examining the long-term organizational and economic impacts of digitalization will provide valuable insights into how businesses can leverage technology for sustainable competitive advantage in the post-pandemic landscape.

By embracing a proactive digitalization strategy, companies can strengthen resilience, enhance adaptability, and sustain innovation, ensuring long-term success in an increasingly digitalized and volatile business environment.

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