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AGILITY IN ADVERSITY: NAVIGATING THE SHIFT TO REMOTE WORK WITH AGILE METHODOLOGIES DURING COVID-19

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ABSTRACT

This article examines the critical role of Agile methodologies in navigating the challenges posed by the COVID-19 pandemic, which forced a sudden shift to remote work. It discusses how the inherent flexibility of Agile principles has allowed teams to maintain productivity and adapt to new work dynamics. The article will explore the Agile adaptation for remote settings, the challenges overcome, and the potential for future work models.

Keywords: Agile Methodologies, COVID-19 Pandemic, Remote Work, Adaptation to New Work Dynamics, Future Models of Work

1. INTRODUCTION

1.1. AGILE METHODOLOGIES: AN OVERVIEW

In an ever-changing landscape, Agile methodologies stand out as a pivotal approach to project management and team collaboration, particularly in software development. Agile is built on iterative progress, emphasizing direct collaboration, customer satisfaction, and the regular delivery of functional project components. Its core principles advocate for valuing human interaction over rigid processes,

adaptiveness over fixed planning, and a consistent output of valuable product features. The Agile approach is particularly renowned for driving innovation and ensuring customer satisfaction, as it fosters a dynamic environment where creative solutions and user feedback are integral to the development process. This article will guide you through the transformative impact of Agile during the COVID-19 pandemic, highlight adaptations for remote work, discuss the challenges faced, and contemplate the future of Agile in a post-pandemic world.

1.2. THE COVID-19 CATALYST: A SHIFT IN WORK DYNAMICS

The advent of the COVID-19 pandemic in early 2020 unleashed unprecedented challenges across the globe, affecting every sphere of human activity, including the workplace. As governments-imposed lockdowns and social distancing measures to curb the spread of the virus, businesses were thrust into an unforeseen reality: the shift to remote work. This transition was abrupt and disruptive, especially for teams that were accustomed to in-person interactions. Statistics indicate that the number of people working remotely surged dramatically, with a global study showing a 300% increase in remote work compared to pre-pandemic levels (Global Workforce Analytics, 2021). The shift was not merely physical but also a psychological and procedural change, impacting team dynamics, communication, and overall work culture Paat et al. (2023). In this scenario, the agility of Agile methodologies was put to the test. How could these practices, typically reliant on close collaboration and frequent face-to-face interactions, adapt to the new norm of remote work? This transition highlighted the need for flexible approaches in maintaining productivity and cohesion within teams, irrespective of their physical location.

1.3. EXPLORING AGILE IN THE NEW NORMAL

This article aims to delve into the heart of this transformation, bridging the gap between the challenges of remote work and the exploration of Agile methodologies in this new context. It seeks to explore how Agile methodologies, originally designed for co-located teams, have been adapted, modified, and applied in the context of remote work during the COVID-19 pandemic. This exploration is not only about sustaining productivity and meeting project timelines; it's about understanding how these methodologies have been reinterpreted and reinvented to fit a radically different work environment Arnaldi et al. (2022).

In navigating this transition, we will examine the initial hurdles faced by teams thrust into remote work, then pivot to how Agile methodologies evolved in response. This article will not only examine the challenges and adaptations but also shed light on the silver linings that emerged from this situation. It will explore how Agile teams, driven by necessity, discovered new ways of collaboration, communication, and efficiency, potentially reshaping the future of Agile methodologies.

The narrative will weave through various dimensions – from the initial challenges to the innovative solutions adopted by teams worldwide, supported by empirical evidence and case studies. It will highlight the resilience and adaptability of Agile methodologies, underscoring their relevance and effectiveness even in the most adverse conditions.

By the end, readers will gain insights into the Agile journey during the pandemic, understanding its challenges, adaptations, and potential future trajectory in a post-COVID world where remote work might continue to play a significant role.

This comprehensive view will provide a clearer understanding of how Agile methodologies can continue to evolve and be effective in a changing work landscape.

2. BACKGROUND

2.1. THE GENESIS AND EVOLUTION OF AGILE METHODOLOGIES

Agile methodologies, initially emerging from the software development industry, have fundamentally reshaped the landscape of project management and team collaboration. The genesis of Agile can be traced back to the early 2000s, with the formulation of the Agile Manifesto in 2001. This manifesto laid down the core values and principles that would become the bedrock of Agile methodologies. Agile's essence is rooted in an iterative and incremental approach, contrasting sharply with the traditional, linear project management methods. Its core principles emphasize flexibility, customer satisfaction, continuous delivery, and most importantly, valuing individuals and interactions over processes and tools Bailey et al. (2021).

In demonstrating the impact of Agile methodologies, a prominent example is Spotify. This global music streaming giant successfully implemented Agile to foster innovation and rapidly adapt to the evolving digital music landscape. Spotify's model organizes teams into small, autonomous "squads" that operate with a high degree of independence, paralleling the Agile principle of self-organization and cross-functional collaboration. This setup has been integral to Spotify's ability to iterate quickly, respond to user feedback in real-time, and maintain a strong customer focus, all while scaling its operations globally.

Over the years, Agile methodologies have transcended beyond software development, finding relevance in various fields and industries. This adaptability and relevance are partly due to its core tenets, which are highly compatible with dynamic and fast-paced work environments. Two of the most prominent frameworks that embody Agile principles are Scrum and Kanban. These frameworks have been widely adopted due to their ability to foster customer-oriented products, innovation, dedicated teams, and a high degree of flexibility Guerrero-Ulloa (2023).

2.2. TRADITIONAL APPLICATION IN CO-LOCATED TEAMS

Traditionally, Agile methodologies thrived in co-located team settings. The physical proximity of team members facilitated a seamless flow of communication, rapid problem-solving, and a strong sense of community and collaboration. Daily stand-ups, sprint planning meetings, reviews, and retrospectives were all integral components of Agile frameworks like Scrum. These interactions, often happening in real-time and face-to-face, were crucial for the success of Agile projects. They ensured that teams remained aligned with project goals, could quickly adapt to changes, and maintained a high level of transparency and trust Rietze & Zacher (2022).

The co-located environment also supported the Agile principle of responding to change over following a plan. Teams could pivot quickly, reprioritize tasks, and make decisions on the fly, something that was more challenging in traditional, hierarchical project management approaches. The essence of Agile in these environments was the synergy and energy created by teams working together in a shared space, constantly exchanging ideas and feeding off each other’s creativity and expertise Horowitz et al. (2017).

In summary, Agile methodologies, which emerged to facilitate dynamic and responsive project management, greatly influenced team collaboration and project handling, particularly in co-located settings. These methodologies fostered a culture of quick adaptation, effective communication, and collaborative problem-solving. However, the sudden shift to remote work due to the COVID-19 pandemic posed a significant challenge, calling into question how these methodologies would adapt in a drastically different work environment. The following sections will delve into this transition, discussing the challenges faced, and the innovative adaptations that emerged, highlighting the resilience and flexibility of Agile methodologies in the face of change.

3. THE SHIFT TO REMOTE WORK: CHALLENGES AND OPPORTUNITIES

3.1. CHALLENGES FACED BY AGILE TEAMS

The transition to remote work posed unique challenges for teams accustomed to Agile methodologies. Agile practices, which typically excel in collaborative, face-to-face environments, found themselves at odds with the isolated nature of remote work Iorio et al. (2016). Also, Agile emphasizes the efficient and effective conveyance of information through face-to-face communication, a core principle of Agile that was disrupted during the pandemic.

3.2. LOSS OF IN-PERSON INTERACTION

Without the ability to interact in person, Agile teams had to rethink their approach to communication and collaboration. The need for adaptation led to a greater reliance on digital platforms, which, while challenging, presented new opportunities for maintaining Agile practices in a distributed environment Battisti et al. (2022).

3.3. ADAPTATION STRATEGIES

- In response to these challenges, Agile teams demonstrated their inherent adaptability by adopting new tools and methods:
- **Embracing Digital Tools:** Teams leveraged digital technologies like video conferencing and collaboration software to maintain the flow of Agile ceremonies such as daily stand-ups and sprint reviews Ozkanet al. (2022).
- **Adapting Communication Methods:** Asynchronous communication became more prevalent, fostering a shift toward a more thoughtful exchange of ideas and documentation Battisti et al. (2022).
- **Redefining Collaboration:** Agile teams found innovative ways to simulate the collaborative spirit of co-located teams in a virtual setting, including virtual coffee breaks and team-building activities Mancl & Fraser (2020).

3.4. POSITIVE OUTCOMES AND LESSONS LEARNED

Despite the challenges, the transition to remote work led to positive adaptations for Agile teams:

Increased Communication and Creativity: The shift prompted more frequent and creative interactions, leading to enhanced collaboration and problem-solving capabilities Battisti et al. (2022).

Enhanced Productivity and Employee Satisfaction: Organizations noted improved work results and employee contentment, particularly when Agile work characteristics such as proactive communication and shared responsibilities were emphasized Bal & Bulgur (2023).

4. CONCLUSION

The Agile methodology, with its core principles of adaptability and iterative progress, proved essential in overcoming the remote work challenges brought about by the pandemic. The case studies and empirical evidence discussed highlight the effectiveness of Agile practices in maintaining productivity and collaboration, even in the most adverse conditions.

5. ADAPTING AGILE FOR REMOTE ENVIRONMENTS

The transition to remote work necessitated by the COVID-19 pandemic prompted a significant reinterpretation of Agile principles. Traditionally, Agile methodologies emphasize close collaboration, regular face-to-face interactions, and a high level of team cohesion — aspects that were profoundly disrupted by the sudden shift to remote environments. However, Agile teams worldwide didn't merely adapt; they reinvented their workflows to align with the new remote working paradigm.

A critical aspect of this adaptation was maintaining Agile's core value of individuals and interactions over processes and tools. Teams had to find innovative ways to replicate the collaborative spirit of Agile in a virtual setting, ensuring that the essence of teamwork and collaboration wasn't lost in the digital translation. As observed in a study, many teams shifted their daily stand-ups and sprint planning meetings to online platforms, ensuring regular communication and transparency remained at the forefront despite the physical distance Ozkan et al. (2022).

5.1. THE PIVOTAL ROLE OF DIGITAL TOOLS AND TECHNOLOGY

The pivotal role of digital tools and technology in this transition cannot be overstated. Video conferencing tools, shared digital workspaces, and agile project management software became indispensable in facilitating communication and collaboration. One report highlights how tools like Zoom, Slack, and Jira not only enabled daily stand-ups and sprint reviews but also played a crucial role in maintaining team unity and purpose Butt et al. (2021).

Moreover, the adaptation went beyond mere communication. Teams used these tools to replicate informal communication channels, such as virtual coffee breaks and team-building activities, which were crucial for maintaining team morale and a sense of normalcy, as noted in "COVID-19's Influence on the Future of Agile" Mancl & Fraser (2020).

5.2. MAINTAINING PRODUCTIVITY AND COLLABORATION

Despite the challenges, many Agile teams reported maintaining or even increasing their productivity. The adaptability inherent in Agile principles played a

key role here. For instance, as mentioned in "Working with Agile Methodologies During the Covid-19 Pandemic" Kurtagic (2021), teams became more proficient in breaking down tasks into smaller, manageable units, a core Agile practice, which helped maintain momentum and focus in a remote setting.

Similarly, a study reveals that Agile teams leaned heavily on self-organization and empowerment, crucial Agile principles, to navigate the challenges of remote work Heidt et al. (2023). This shift not only ensured project continuity but also encouraged individual team members to take greater ownership of their work, leading to a more distributed and resilient work model.

In summary, the COVID-19 pandemic compelled Agile teams to rethink and reshape their methodologies. Through the strategic use of digital tools and a reemphasis on core Agile values, these teams demonstrated not only the resilience of Agile principles but also their capacity to thrive in unforeseen and challenging circumstances. This period may well be looked back upon as a pivotal moment in the evolution of Agile, where its principles were tested and proven under the most challenging of circumstances, all while maintaining team morale and cohesion in a new, remote setting.

6. CASE STUDIES AND EMPIRICAL EVIDENCE

In the ever-evolving landscape of the modern workplace, the paradigm shift towards remote work has been a focal point of discussion and study. Case studies and empirical evidence play a crucial role in unraveling the intricate dynamics of this transition, providing valuable insights into the impact on communication, work results, and employee agility. Drawing from studies conducted in Sweden and an international survey on work-from-home success, this passage explores specific findings and themes that illuminate the nuances of remote work Bal & Bulgur (2023).

7. INTERNATIONAL SURVEY

The extensive international survey, examining various industries and regions, revealed the diverse impacts of remote work on productivity and employee well-being. According to Bal & Bulgur (2023), difficulties in virtual work systems, as found in studies by Wang et al. and Matli, significantly affected employee performance and well-being. Perceived organizational support was key to overcoming these challenges. Increased workload and rigid working hours, as noted in these studies, had negative effects, impacting employees' routine work and lifestyle, and even their health and welfare due to the isolation remote work entails. Further research cited in Bal and Bulgur's work, such as those by Adisa, Ogbonnaya, and Adekoya, highlighted the challenges of adapting to workload, online presence, job insecurity, and technological infrastructure, leading to job stress, burnout, and lower job satisfaction. Additionally, findings by Sandoval-Reyes et al. reported increased perceived stress due to remote working systems during the pandemic, affecting men's productivity more than women's and reducing overall work-life balance and job satisfaction. These insights, as discussed in Bal & Bulgur (2023), paint a comprehensive picture of the multifaceted impact of remote work, underscoring the importance of organizational support and adaptability in navigating the complexities of this new work environment.

8. THE SWEDISH CASE STUDY

A comprehensive case study conducted in Sweden delved into the experiences of organizations that embraced remote work during the pandemic, echoing similar themes found in the Italian context Guest et al. (2017). One key finding centered around the transformation of communication dynamics, akin to the Italian study's emphasis on digital transformation and its impact on work practices. In Sweden, traditional office-based communication channels gave way to a surge in the utilization of digital platforms. This shift was met with an overall increase in communication efficiency, paralleling the Italian findings where the effective use of new technologies was highlighted as crucial for remote work success. Swedish employees embraced asynchronous communication methods, fostering a more thoughtful and well-documented exchange of ideas, reflecting the Italian study's insight on the importance of considering psychological-behavioral aspects like job satisfaction and technostress in remote work arrangements. The Swedish case thus aligns with the broader themes of digital technology's role and the psychological implications of remote work observed in different European contexts. Battisti et al. (2022).

9. WORK RESULTS ON A GLOBAL SCALE

The international survey, spanning various industries and geographic regions, sought to quantify the impact of remote work on productivity and work results. The findings revealed a mixed bag of outcomes, indicating that success in a remote work environment is contingent on various factors. Organizations that invested in robust virtual collaboration tools and emphasized clear performance expectations observed a notable uptick in work results. Interestingly, the survey identified a correlation between employee satisfaction with remote work arrangements and their perceived work effectiveness, emphasizing the importance of employee well-being in achieving positive outcomes. Furthermore, the research indicates that agile work characteristics, such as proactive communication and shared team responsibilities, have a direct positive effect on the success of working from home, enhancing productivity and job satisfaction.

10. EMPLOYEE AGILITY AND ADAPTABILITY

The theme of employee agility emerged prominently in both the Swedish case study and the international survey. Organizations that actively fostered a culture of adaptability witnessed smoother transitions to remote work. This adaptability manifested not only in the technological realm but also in the willingness of employees to embrace new ways of working. It is particularly highlighted by agile work characteristics, which are essential for adjusting to the remote work environment. Active bidirectional communication, proactivity, and shared team responsibilities are key components that contribute to successful adaptation in these dynamic and uncertain times. The ability to pivot quickly and effectively, whether in response to shifting priorities or unforeseen challenges, emerged as a hallmark of successful remote work arrangements.

In the realm of remote work, case studies and empirical evidence from diverse sources shed light on the multifaceted impact on communication, work results, and employee agility. The overall impact of agile work on work-from-home success is significant, with a notable part of this effect mediated by HRM support measures, underscoring the importance of tailored HRM strategies in facilitating remote work

success. The Swedish case study highlighted the transformative nature of digital communication, while the global survey emphasized the importance of organizational investment in virtual collaboration tools. Through these lenses, the theme of employee agility emerged as a critical factor, underlining the necessity for organizations to cultivate a flexible and adaptive culture to navigate the complexities of remote work successfully. As the workplace continues to evolve, these studies provide a roadmap for organizations seeking to optimize the benefits of remote work while addressing its inherent challenges.

11. ADVANTAGES AND NEW DISCOVERIES

Agile methodologies, originally designed for co-located teams, have proven to be surprisingly effective and transformative when applied to remote settings. The transition to remote work, accelerated by global events, prompted organizations to reassess their project management strategies. This shift led to the discovery of numerous unexpected advantages and positive outcomes associated with the implementation of Agile methodologies in remote settings Vuchkovski et al. (2023).

One notable advantage is the increased frequency and creativity in communication. Agile practices emphasize regular team interactions and collaboration through mechanisms such as daily stand-up meetings and iterative development cycles. In a remote context, these practices became a lifeline for teams, fostering a sense of connectedness and promoting real-time communication. As a result, team members found themselves engaging in more frequent and dynamic discussions, overcoming the challenges of physical separation Lassenius et al. (2015).

This heightened level of communication not only facilitated the exchange of information but also sparked unexpected bursts of creativity. The virtual nature of remote collaboration encouraged team members to explore diverse communication channels, leading to the emergence of innovative solutions to complex problems. The asynchronous nature of Agile processes allowed team members to contribute ideas at their own pace, accommodating different working styles and time zones. Consequently, the diversity of thought and perspectives brought about by remote Agile practices led to breakthroughs that might not have occurred in a traditional, office-based environment.

The long-term impacts of adopting Agile methodologies in remote settings are profound. Organizations that embraced Agile principles during the transition to remote work found themselves more adaptable and resilient. The flexibility inherent in Agile frameworks enabled teams to swiftly adjust to changing priorities, navigate uncertainties, and respond effectively to unforeseen challenges. This adaptability not only ensured the continuity of project deliverables but also enhanced the overall agility of the organization Kozlowski & Ilgen (2006).

Furthermore, the positive outcomes experienced during the remote Agile experiment are likely to leave a lasting imprint on organizational culture. The emphasis on collaboration, transparency, and adaptability cultivated in Agile environments translates into a more resilient and dynamic workplace. As remote work becomes a more permanent fixture in the professional landscape, the lessons learned from Agile methodologies are invaluable in fostering a culture of continuous improvement and innovation Kauffeld et al. (2022).

In conclusion, the unexpected advantages and positive outcomes of implementing Agile methodologies in remote settings have reshaped the way organizations approach project management. The increased frequency and

creativity in communication, coupled with the adaptability fostered by Agile principles, have positioned remote Agile practices as a catalyst for long-term organizational success. As organizations continue to navigate the evolving landscape of remote work, the lessons learned from this Agile transformation serve as a beacon for sustained innovation and collaboration.

12. FUTURE OF AGILE POST-COVID

The COVID-19 pandemic has ushered in a new era of remote work and has significantly impacted the way teams collaborate and deliver projects. As we look to the future of Agile methodologies post-COVID, it's evident that the landscape of work has forever changed, and Agile practices will need to evolve to meet the demands of this new reality.

One of the most notable shifts, as highlighted by McKinsey in 'The post-pandemic future of work: Hybrid, remote, and what's ahead', is the widespread acceptance and integration of remote work into the fabric of Agile methodologies. The forced experiment of remote work during the pandemic has shown that teams can remain effective and even thrive in virtual environments. This realization is likely to lead to a more inclusive and flexible approach to Agile practices, accommodating team members working from different locations and time zones.

The future of Agile post-COVID may see the rise of a hybrid model that combines in-person and remote elements. As InfoQ's 'The Post COVID Normal Will Be Hybrid Work Environments' reports, there's a growing preference for hybrid work models, indicating that the future work environment will need to be more adaptable and technology-driven. While in-person collaboration fosters a sense of camaraderie and spontaneous communication, remote work offers flexibility and access to a broader talent pool. A hybrid Agile model could strike a balance, allowing teams to benefit from the best of both worlds. Face-to-face interactions could be reserved for critical planning sessions, retrospectives, and other activities where physical presence enhances communication and creativity. On the other hand, day-to-day work and routine meetings could continue to be conducted remotely.

Technological advancements will play a crucial role in shaping the future of Agile methodologies. McKinsey's article 'Agility in the time of COVID-19: Changing your operating model in an age of turbulence' demonstrates how companies, like a European telecom firm, have successfully adopted agile practices in a remote setting, emphasizing the role of technology in facilitating rapid decision-making and operational efficiency. Collaboration tools, virtual reality, and augmented reality may become integral components of Agile frameworks, providing immersive experiences for remote team members. These technologies could help bridge the gap between in-person and virtual collaboration, making remote work feel more connected and integrated.

Moreover, the future of Agile post-COVID might emphasize even more on adaptability and resilience. The pandemic has demonstrated the need for Agile teams to respond quickly to unforeseen challenges and changes in the business environment. As a result, Agile methodologies may evolve to incorporate even more emphasis on continuous improvement, rapid iteration, and the ability to pivot in response to disruptions. This aligns with insights from McKinsey's 'Agile resilience: Lessons from COVID-19', which shows how organizations adapted quickly during the pandemic, highlighting the necessity of rapid decision-making structures and adaptability in a hybrid working environment.

In conclusion, the future of Agile post-COVID is likely to be shaped by a recognition of the benefits of remote work and a desire for greater flexibility. A hybrid model that seamlessly integrates both in-person and remote elements could become the norm, supported by advancements in technology that enhance virtual collaboration. The core principles of Agile – adaptability, collaboration, and customer focus – will remain, but the methods by which they are implemented may undergo significant transformation in response to the lessons learned during the pandemic.

13. CONCLUSION

13.1. SMOOTH TRANSITION TO REMOTE WORK

Agile methodologies facilitated a smooth transition to remote work, aided by the pre-pandemic online orientation of many Agile practices. This transition was essential in maintaining continuity despite the abrupt shift in working conditions.

13.2. ENHANCED FLEXIBILITY AND MINIMAL PRODUCTIVITY LOSS

Agile teams experienced increased flexibility in their work arrangements with only minor declines in productivity. This adaptability was critical in maintaining team productivity and collaboration, even with the physical distance.

13.3. EFFECTIVE USE OF DIGITAL TOOLS AND COMMUNICATION PLATFORMS

The pandemic saw a significant rise in the use of mobile devices and video conferencing tools. Agile teams effectively utilized these digital tools to sustain, and sometimes enhance, team interactions and project management effectiveness.

13.4. CHALLENGES AND ADAPTATIONS IN IMPLEMENTING AGILE PRACTICES

Agile methodologies faced unique challenges, especially in implementing non-functional requirements and conducting high-bandwidth collaborations like whiteboarding. Agile's iterative and incremental approach proved effective in addressing these challenges in remote environments.

13.5. INNOVATIVE ADAPTATIONS AND INTEGRATION

The period of the pandemic witnessed innovative adaptations within Agile methodologies, such as the integration of Lean principles within Scrum frameworks and a shift towards data-informed retrospective activities. These adaptations highlighted Agile's capability to evolve and integrate with other methodologies for optimized results.

13.6. IMPACT ON AGILE SOFTWARE DEVELOPMENT TEAMS (ASDT)

Agile Software Development Teams were significantly impacted by the pandemic, necessitating rapid adaptation in team dynamics and work processes.

13.7. LONG-TERM IMPACT AND FUTURE DIRECTIONS

The pandemic's influence suggests a potential long-term shift towards the digitization of agile working methodologies. It also highlights the need for further research into the sustainability of these adaptations and the long-term effects of COVID-19 on digitization and agile practices.

13.8. RESILIENCE AND ADAPTABILITY OF AGILE METHODOLOGIES

Agile methodologies demonstrated remarkable resilience and adaptability throughout the pandemic. They were key in overcoming challenges like communication barriers, loss of in-person interactions, and the integration of various requirements in remote work settings.

13.9. EVOLUTION OF AGILE PRACTICES AND WORK ROUTINES

Agile practices and daily work routines underwent significant changes, with Agile's flexibility allowing for more dynamic and responsive product roadmapping and project management.

13.20. FUTURE RESEARCH AND IMPLICATIONS

This period provided rich insights into the resilience and scalability of Agile methodologies, suggesting areas for future research, particularly in optimizing Agile practices for remote teams and understanding their long-term implications.

The journey of Agile methodologies during the COVID-19 pandemic underscores their inherent resilience and adaptability to adverse conditions. The experiences during this period have not only validated the robustness of Agile in the face of adversity but also opened new avenues for its application in a rapidly evolving work environment. The insights gained are invaluable, shaping the future of Agile practices to be more resilient, adaptable, and inclusive for the challenges and opportunities ahead.

CONFLICT OF INTERESTS

None.

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