

Managing Complexity: Challenges for Leaders During the Next Quarter Century

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I have had the privilege of being associated with the Institute of Behavioral and Applied Management (IBAM) for over 20 years. I joined the organization as a doctoral candidate trying to establish myself, but I stayed on because of the collegial development at the core of the organization. I served in a variety of capacities over the years, as division chair, secretary, treasurer, conference chair, *Journal of Behavioral and Applied Management* (JBAM) editor, and now preparing to end my term as president of IBAM. As I draft this editorial, I am reading over 32 years of leadership notes for the institute and reflecting on Rowley's (1999)[†] article opening the first issue of JBAM. I am amazed at where we have come while I project on a potential future. "Managing the Next 25 Years: 2025–2050" will be a challenge, as all futures are, but allow me the liberty to present some thoughts—history will judge the correctness of it.

To provide some context, not all of my work is transparent; I served in the military, conducted conflict resolution negotiations between multi-national states, have a background in quality and artificial intelligence, and have researched the impact that environmental, social, and governance (ESG) disclosure has on performance. Having said that, I am grounded in strategic management. Given these aspects of my background, I am often asked about AI, conflict, quality, and ESG. Managing through the next 25 years will provide many challenges for firms, but there is a great deal of opportunity for management to gain competitive advantages by navigating these.

Artificial Intelligence (AI)

I am co-chair of my institution's Institutional Review Board (IRB). In a recent meeting, a proposal was put forward that we add additional questions to our IRB application that requires researchers to address the use of AI in research design. When questioned about it, one member stated, "This is NEW and we don't understand it!" In fact, that statement was/is completely inaccurate. I have been working in AI for more than 20 years, and AI has been explored long before that. In fact, what this particular IRB member was referring to is Large Language Models (LLMs) and the current adoption of applications such as ChatGPT, not "AI." Applications like spam filters, gram-

mar correctors, and smart recommenders are instances of AI, and they have been around for some time. Nonetheless, managers (leaders) will have to learn how to incorporate them into their organizations. I am already hearing of firms experimenting with how to streamline their operations using LLMs.

Cloud-based applications like Azure, Google Cloud, AWS, and others have made it such that one does not need to be an expert in AI or a mathematician; one merely needs to provision the cloud-based resources for the organizational need. There exists already for management a market for algorithms, capacity for deep data lakes, compute capacity that we could not have imagined 25 years ago, LLM, and more. One merely needs to know the business need and the application location to apply the needed resource.

When I started studying AI, language recognition was limited to modeling a "bag of words." To develop spam filters early on, programmers developed a bag of words that reflected typical spam characteristics to sort out unwanted content. Managers are now looking for ways to speed up productivity by using LLMs to generate code for applications, more precise imagery recognition, and so much more. As an example, the expansion of blockchain applications and cryptocurrency is resulting in more opportunities to build inclusivity while potentially exploiting others. Decentralized autonomous organizations (DAOs) seek to build more transparent communities using blockchain that motivate group goals (see www.metagov.org for examples). The next 25 years present increased promise for management to build employee owned and managed businesses using new forms of cryptography that is distributed, which will result in new challenges to drive organizational performance.

Conflict

We may distinguish between conflict "C" and conflict "c." Conflict "C" might be defined by national actors who take action against other nations. Big "C" conflict (i.e., major geopolitical, economic, and social conflicts) and little "c" conflict (i.e., organizational, interpersonal, and team-level disputes) over the next 25 years, considering the current global landscape, are likely to present major challenges for management. At the time of this writing, major Conflict is happening between the Israelis and Palestinians, and Russia and Ukraine (Minutolo et al., 2022). However, we might envision a time when tensions be-

[†]The article is incorrectly listed in Google Scholar and other sources as being published in 2016 since this is when the journal migrated to a new database and submitted it for a DOI.

tween the U.S. and China might escalate over Taiwan (Beckley & Brands, 2022). If we accept that climate change is happening, then global tensions over resources may escalate even further (Butler, 2023).

Big “C” conflict refers to large-scale societal, geopolitical, and systemic conflicts, such as international tensions, climate change-driven resource conflicts, economic disruptions, and technological power struggles. Over the next 25 years, management has opportunities to explore, including innovation in crisis management, geostrategic advantages, ethical leadership and corporate diplomacy, AI-driven resilience, and ESG capitalism. Companies can develop new risk-mitigation strategies, leverage scenario planning, and innovate solutions for operating in uncertain environments. Organizations that anticipate geopolitical shifts can position themselves advantageously in emerging markets or diversify supply chains for resilience. Businesses can play a role in peacemaking, sustainability, and corporate social responsibility, helping stabilize volatile regions. AI and automation can help businesses navigate uncertainty, reducing dependence on unstable labor markets and conflict-prone supply chains. With increasing societal focus on ethical governance, companies that embed ESG principles into their strategy may gain legitimacy and long-term value. This is true regardless of the administration (see ESG section).

However, Conflict will present significant challenges over the next 25 years, including supply chain and economic disruptions, digital warfare, political and social polarization, and regulatory displacement and inequality. Geopolitical conflicts, trade wars, and climate-related crises may lead to resource scarcity and higher operational costs. Rising cyber threats pose risks to intellectual property, data security, and financial stability. Companies will have to navigate increasing ideological divisions, balancing stakeholder expectations without alienating customers or employees. Rapid changes in laws related to AI, data privacy, environmental policies, and human rights may create compliance challenges. Automation, geopolitical migration, and socio-economic disparities may reshape labor markets, requiring new workforce management strategies.

Little “c” conflict refers to organizational disputes, interpersonal tensions, and team-level disagreements that shape workplace dynamics. Management will have opportunities to promote a culture of “constructive disagreement,” leverage hybrid and new collaboration models, use AI and mediation technologies, and engage in leadership development. Firms that foster open dialogue and psychological safety can use conflict as a driver of creativity and problem-solving. Organizations that navigate remote work tensions well can create more flexible, productive, and inclusive work environments. Emerging tech like AI-driven conflict resolution and mediation tools can help organizations manage disputes efficiently. As workplaces become more complex, leaders who excel at conflict resolution will gain a competitive advantage.

However, there will likely be workplace polarization, remote work tension, generational shifts in values and expectations, job security conflicts, and mental health and burnout issues. Political and social issues will increasingly spill into the workplace, making conflict resolution more complex. Hybrid and fully remote models create challenges in communication, trust, and team cohesion. Younger workers may challenge traditional authority structures, requiring adaptive management styles. Employees may resist automation and AI integration, fearing job displacement. Poorly managed conflict may lead to stress, disengagement, and turnover, affecting overall organizational health.

Over the next 25 years, the ability to manage both big “C” and little “c” conflict will define the success of organizations. While big “C” conflict presents macro-level uncertainties, it also drives innovation and resilience-building strategies. Little “c” conflict, when managed well, can enhance team dynamics, creativity, and leadership effectiveness. Organizations that proactively develop conflict resolution capabilities at both levels will be better positioned to thrive in an increasingly complex world.

Quality

Given the AI and conflict opportunities and challenges presented here, the role of quality leaders will be extremely important over the next quarter century. Quality leaders have the opportunity to use quality as a competitive differentiator, use technology to drive quality improvement, use it for sustainability and ethics, develop quality-centric models, mitigate risk, align supply chains, and engage. With consumers and businesses increasingly prioritizing reliability, ethical sourcing, and sustainability, companies that embed quality into their goods, services, and operations will gain a competitive advantage. AI, machine learning, and IoT enable real-time quality monitoring, predictive maintenance, and automated quality assurance, reducing defects and inefficiencies. Quality is no longer just about performance, but sustainability, fair labor practices, and environmental impact. Organizations that lead in these areas will gain trust and market share. Advances in data analytics allow for hyper-personalization without sacrificing consistency, enhancing customer satisfaction and brand loyalty. Strong quality management reduces operational risks, including compliance failures, cybersecurity breaches, and reputational damage, making businesses more resilient in an unpredictable world. End-to-end quality management, supported by blockchain and digital tracking, ensures transparency and consistency across global supply networks. Organizations that prioritize a culture of quality, from leadership to frontline employees, foster innovation, efficiency, and long-term success.

Nonetheless, quality managers will face challenges to maintain high levels of performance. They will struggle to balance tradeoffs among cost, speed, and quality. Pressures to deliver faster and cheaper goods/services often conflict with maintaining high-quality standards, requiring new models of efficiency. Regulatory complexity and

compliance burdens will increase as industries face regulations on AI ethics, sustainability, data privacy, and more. Ensuring compliance without stifling innovation will be challenging. Cybersecurity and digital quality risks will need to extend beyond physical products to include cybersecurity, software reliability, and AI decision-making integrity. Managing global supply chain variability will need to be strengthened to ensure consistent quality across dispersed suppliers, especially in politically unstable or resource-scarce regions.

Workforce skill gaps and resistance to change will present challenges as automation and AI reshape quality management. Organizations must upskill employees and manage resistance to new technologies and processes. Consumer expectations and the perception of quality will extend beyond just durability and functionality to include ethics, sustainability, and user experience. Companies that fail to adapt risk losing consumer trust. Finally, AI bias and ethical dilemmas in automated quality control might lead to unintended ethical and operational consequences.

Quality will remain a central pillar of competitive advantage, risk mitigation, and customer trust over the next 25 years. However, it is evolving beyond traditional definitions of product excellence to include sustainability, ethics, cybersecurity, and digital reliability. Organizations that can embed quality into every level of decision-making—while balancing cost, speed, and regulatory pressures—will be the ones that thrive.

Environmental, Social, and Governance (ESG)

At the time of writing this editorial, it seems as if all advancements made in the area of ESG are rolling back. I am asked frequently what changes made at the national level mean for ESG. My response is the same each time—nothing. Society is holding organizations accountable in ways that it never has in the past, driven largely by the advances discussed herein. Access to information and the processing of that information through automation is allowing markets to make better informed decisions. As mentioned already, blockchain technology allows for immutable and transparent reporting of activities. Further, over the next 25 years, we are likely to see the use of blockchain to trace goods from cradle to cradle, which will help improve quality and safety.

When talking with corporate leaders of privately held companies, I hear, “ESG does not matter to us because we are privately held.” This is incorrect; even privately held companies have to be concerned about ESG because their customers are publicly traded and they have to get their suppliers to report so that they themselves can report. Furthermore, if a firm is doing business with anyone in the European Union, they need to be concerned with ESG.

Reporting agencies like Reuters, Bloomberg, Sustainalytics, and others provide access to ESG measures that institutional investors are using to make informed decisions. The ESG measure proxies for the risk inherent in an investment. Machine learning techniques are allowing researchers and investors to find nonlinear relation-

ships between ESG disclosure and firm performance (Minutolo et al., 2019). Hence, while it may seem like ESG is being rolled back in some parts of the world, it is here to stay. As extreme weather events increase, management will be challenged to find ways to mitigate the impact that it has on business operations and reduce risk. As firms try to address the United Nations Sustainable Development Goal (UN SDGs) over the next 25 years, management will need to understand better the value that they create or destroy. Firms that innovate and provide quality in this context will have a competitive advantage, and research is needed to help facilitate this process.

Conclusion

As my mentor John Camillus often says, we are living in a VUCA environment—volatile, uncertain, complex, and ambiguous. He has written extensively on wicked problems (Camillus, 2016), referring to complex, multifaceted issues that are difficult or impossible to solve due to their high level of uncertainty, interconnectedness, and ever-changing nature. These problems are characterized by several traits:

1. No clear solution. Wicked problems do not have a definitive or one-size-fits-all solution; any solution may create new problems or have unintended consequences.
2. Interconnectedness. These problems are often intertwined deeply with other issues, making it difficult to address one aspect without affecting others.
3. Unique. Each wicked problem is unlike any other, and solutions that worked in one context may not apply in another.
4. Stakeholder disagreement. Disparate groups of people might have different perspectives on what the problem is and what the solution should be.
5. Uncertainty and ambiguity. Information about wicked problems is often incomplete and unclear, and outcomes of potential solutions are difficult to predict.

Examples of wicked problems include climate change, conflict, the role of quality, and AI. These problems are often tackled through collaborative, iterative, and flexible approaches, recognizing that solutions will evolve. All of the areas discussed here are complex and intertwined. Without quality in business operations, there is no ESG, and without ESG-focused operations, the potential for conflict increases. For example, use and expansion of AI is putting increased pressure on power grids and greenhouse gas emissions, increasing the technological divide. Behavioral and applied management, and the research thereof, is necessary over the next 25 years to help organizations lead through VUCA environments to address wicked problems. The Institute of Behavioral and Applied Management (IBAM) has spent more than 30 years at the leading edge of research in applied management, and I suspect it will be needed for the next 25 to help leaders navigate these wicked problems.

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