

DECODING DECISION MAKING: AI SENSEMAKING AND THE AUTHENTICITY DILEMMA IN IS STRATEGY

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ABSTRACT

The paper explores the strategic implications of generative AI in organizations. It starts with an overview of AI's evolution, highlighting the rise of machine learning, deep learning, and General Adversarial Networks. The paper emphasizes generative AI's transformative role across various sectors while noting the challenges of biases and fake content generation.

The paper introduces the 'Authenticity Dilemma' framework, advocating a knowledge-based approach for strategic AI integration. This framework focuses on AI capabilities in decision-making and sensemaking, distinguishing between authentic and fake processes. The paper presents four levels of strategic positioning - Smoke Screen, Echo Chamber, Chameleon, and Greenhouse - illustrating different organizational approaches to AI application.

In summary, the paper provides a framework for understanding and navigating the complexities of AI in organizational strategy. While offering valuable insights, the paper also acknowledges potential limitations in oversimplifying decision-making complexities and defining 'authentic' versus 'fake' AI applications.

KEYWORDS

Generative AI, IS strategy, sensemaking, decision making, ChatGPT

1. INTRODUCTION

The concept of artificial intelligence began in the 1950s with the work of pioneers such as Alan Turing and John McCarthy. This developed into the emergence of machine learning where algorithms learnt from data. Increased computational power and data availability led to breakthrough in deep learning in 2010s particularly through deep neural networks that propelled AI forward. In 2014, the development of General Adversarial Networks (GANs) by Ian Goodfellow and his colleagues (2014) was a landmark. GANs involved two neural networks contesting each other to generate new instances of data. Subsequently, the introduction of models such as Transformers improved natural language processing that led to development of more sophisticated generative models. Such models have had a transformative effect on organizations.

Generative AI is being used to create personalized content from marketing emails to targeted ads. AI models can generate new product designs, simulate performance and optimize manufacturing processes. Similarly, drug discovery and development has been expedited using such models. Chatbots and virtual assistants have gained greater prominence providing more natural and context aware interactions. Financial advice has been tailored to experiences of individual users (Dowling and Lucey 2023). Strategically, AI models have generated scenarios and forecasts to aid the strategic planning process.

Despite the significant benefits accrued by generative AI, it has been strategically problematic in organizations. AI systems perpetuate and amplify biases in the training data. This can lead to discriminatory outcomes in recruitment, lending and customer service. More problematic is the ability of AI models to create realistic fake content such as deepfakes raising concerns about misinformation, fraud, and an erosion of trust on how organizations can use such digital content. There are privacy concerns as many generative AI models rely on large training datasets that include sensitive personal information in potential violation of GDPR regulations. Similarly, questions arise around ownership as the models may have been trained on copyrighted materials.

While generative AI offers transformative potential for businesses, it is accompanied by a host of challenges that need careful strategic consideration. No previous studies has analyzed the strategic dimension of generative AI or its impact on organizational effectiveness and innovation (Korzynski et al. 2023).

Strategically, we adopt the knowledge-based view in this paper arguing that knowledge is the most important asset in any firm. We build on historical advances in information systems strategy from data processing to management information systems, strategic information systems and IS capabilities (Ferlie et al. 2015). We further develop this trajectory to mobilize knowledge by developing the ‘Authenticity Dilemma’ framework that advances the importance of two principal AI capabilities needed in the changing global environment; organizational decision making (authentic and fake) and AI sensemaking.

2. KNOWLEDGE BASED VIEW OF FIRM

The Industrial Organization (IO) perspective of strategy, rooted in the structure-conduct-performance paradigm, emphasizes the importance of industry structure in determining firm strategy and performance. It posits that competitive advantage is primarily derived from the external environment. However, this view is often criticized for its overemphasis on external factors, neglecting the internal capabilities and unique resources of firms. It assumes a relatively static environment and often fails to account for rapid changes and innovations in the market such as generative AI.

In contrast, the Resource Based View (RBV) focuses on the internal resources and capabilities of a firm as the primary sources of competitive advantage. This perspective argues that firms are heterogeneous in terms of the resources they control, and these differences can lead to sustainable competitive advantages. The RBV's emphasis on unique resources - tangible and intangible - allows firms to develop strategies that are more tailored to their specific strengths and weaknesses. This internal focus provides a more dynamic approach to strategy, enabling firms to adapt and evolve in response to changes in the business environment (Pereira and Bamel 2021).

The Knowledge Based View (KBV) further extends the RBV by emphasizing knowledge as the most strategically significant resource of a firm. In today's information-driven economy, the ability to create, acquire, and leverage knowledge is crucial for maintaining competitive advantage. The KBV highlights the role of organizational learning, knowledge management, and innovation as key drivers of strategic success. Unlike the IO perspective, which is more static and externally focused, the KBV allows for a more adaptive, agile approach to strategy, reflecting the rapidly changing and knowledge-intensive nature of modern business environments (Singh et al. 2021).

Both the RBV and KBV offer significant advantages over the IO perspective by focusing on the internal strengths of a firm, advocating for a more dynamic and proactive approach to strategy. While the IO perspective provides valuable insights into the impact of industry structure and external forces, the RBV and KBV encourage firms to look inward and leverage their unique resources and knowledge. This internal focus is particularly relevant in today's fast-paced, innovation-driven business world, where adaptability and unique capabilities are key to sustaining competitive advantage.

While KBV emphasizes the strategic importance of knowledge within organizations, Artificial Intelligence (AI) sensemaking involves the use of advanced algorithms to interpret and derive meaningful insights from complex data sets. AI sensemaking, on the other hand, involves the application of AI technologies to analyze large and complex data sets, extracting patterns, trends, and insights that are not immediately apparent. This process enhances decision-making by providing a deeper, data-driven understanding of various aspects of the business environment. AI sensemaking tools can process information at a scale and speed far beyond human capabilities, leading to more informed and strategic decisions. It is this intersection of AI Sensemaking and organizational decision making that forms the basis of our proposed AI strategic framework as shown in Figure 1.

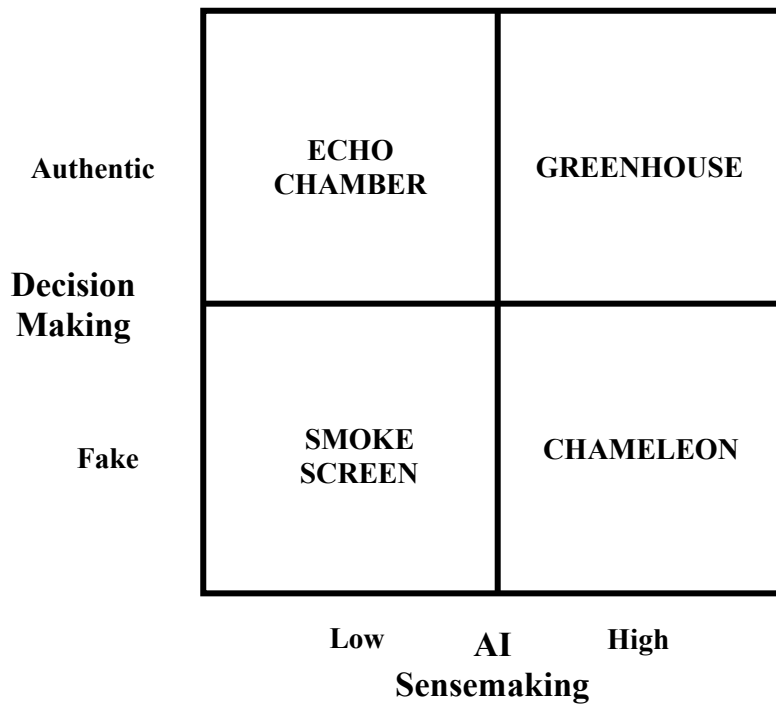


Figure 1. Authenticity Dilemma IS Strategy Framework

3. AI SENSEMAKING

Sensemaking is a process by which individuals or organizations interpret and create an understanding of the events, situations, or data they encounter. It involves constructing a narrative to make sense of the ambiguous, complex, or uncertain aspects of their environment. This process is inherently human and relies heavily on cognitive abilities like perception, interpretation, and the synthesis of information. In an organizational context, sensemaking is crucial for decision-making, strategy formulation, and adapting to change. It involves the collective pooling of insights, experiences, and knowledge of organizational members to navigate complex situations (Aguinis and Glavas 2019).

This includes understanding the significance of information within the context of past experiences, organizational culture and current circumstances. Stories provide a bridge to explain and give meaning to various events and data points. Social interaction becomes central through dialogue and discussion to shape a collective understanding (Christianson and Barton 2021).

AI sensemaking, in contrast, refers to the use of artificial intelligence technologies to analyze and interpret large volumes of data. Unlike human sensemaking, which is subjective and influenced by personal experiences and biases, AI sensemaking is based on algorithms and computational processes. It involves machine learning, data mining, and pattern recognition to identify trends, anomalies, and correlations in data sets that might not be apparent to human observers (Verganti, Vendraminelli, and Iansiti 2020).

This involves data processing vast amounts of data at volumes and speeds beyond human capability. Algorithms are used to detect patterns, trends and relationships within the data. Predictive analysis adopts statistical techniques and machine learning to make forecasts based on large volumes of data.

The primary difference between human and AI sensemaking lies in their approaches and capabilities. Human sensemaking is qualitative, context-rich, and narrative-driven, relying on cognitive and social processes. It excels in understanding the nuances of context, emotional undercurrents, and complex social dynamics. AI sensemaking, on the other hand, is quantitative, data-driven, and pattern-oriented. It excels in processing large data sets, identifying patterns, and making predictions based on statistical analysis.

Our conception of AI sensemaking does not see these two forms of sensemaking as mutually exclusive. They complement each other. AI can augment human decision making by providing comprehensive data analysis, while human sensemaking can add context, ethical considerations, and creative problem-solving to AI insights. Combining human and AI sensemaking bear significant synergies leading to more informed, nuanced and strategic decision making, leveraging the strengths of human insights and AI's analytical power (Schildt, Mantere, and Cornelissen 2020).

4. AI DECISION MAKING

The advent of generative AI has revolutionized the landscape of decision-making in organizations. This technology, capable of synthesizing and analyzing vast amounts of data, presents new opportunities and challenges in distinguishing between authentic and fake decision-making processes.

Authentic decision-making in the realm of generative AI is characterized by a genuine intent to leverage technology for insightful, ethical, and responsible outcomes (Newman, Fast, and Harmon 2020). It involves using AI to enhance human judgment, not replace it. In this paradigm, decisions are made with a clear understanding of the AI's capabilities and limitations, ensuring that the technology serves as a tool for augmenting human expertise and intuition. Authentic decision-making also prioritizes transparency, both in how AI algorithms function and in how decisions are derived from AI-generated insights. This transparency is crucial for maintaining trust among stakeholders and for the ethical use of AI (Vrontis et al. 2022).

Conversely, fake decision-making in the context of generative AI refers to the use of technology in a way that is deceptive, unethical, or solely for the sake of appearances. This might involve using AI as a facade to justify predetermined decisions or to give an illusion of innovation and modernity without a genuine commitment to these values. In fake decision-making, there is often a lack of transparency about how AI insights are generated and used, leading to decisions that may be biased, uninformed, or ethically questionable. This approach can erode trust and lead to strategic missteps, as the decisions are not grounded in a true understanding of AI's potential and limitations (Awan et al. 2021).

The distinction between authentic and fake decision-making in the context of generative AI has significant implications for organizations. Authentic decision-making can lead to more innovative, effective, and ethically sound strategies, enhancing the organization's competitiveness and reputation. It fosters a culture of trust and accountability, where AI is used as a force for good. On the other hand, fake decision-making can undermine an organization's integrity and lead to poor strategic outcomes. It can damage stakeholder trust and result in a misuse of AI capabilities, potentially causing harm or perpetuating biases (Abubakar et al. 2019).

5. INFORMATION SYSTEMS STRATEGY FRAMEWORK IN THE ERA OF GENERATIVE AI

As generative AI continues to transform the business landscape, the distinction between authentic and fake decision-making becomes increasingly critical. Organizations can choose either to understand and embrace the true potential of AI, using it to complement human decision-making processes or to act as a substitute or a smokescreen. By prioritizing authenticity, transparency, and ethical considerations in their use of AI, organizations can harness this powerful technology to drive genuine innovation and sustainable success. In the context of generative AI, we offer four strategic choices for organizations based on their emphasis on AI sensemaking and the nature of their decision making as shown in Figure 1.

5.1 Smoke Screen Strategy

An organization that engages in fake decision-making combined with low levels of AI sensemaking is likely to face significant challenges. Such an approach can lead to suboptimal strategic decisions, loss of trust among key stakeholders, and an inability to compete effectively in the modern business environment. We have adopted the metaphor of a 'Smoke Screen Strategy' to describe an organization that struggles to stay afloat due to lack of strategic direction and leadership where decisions obscure the true state of affairs creating a false sense of security and progress.

Fake decision-making in an organization refers to a superficial or deceptive approach where decisions are either a facade for hidden agendas or are made to give an illusion of sound management without genuine commitment to those decisions. This approach often involves bypassing thorough analysis and critical thinking in favor of decisions that are more performative than substantive. In such settings, decisions are not necessarily aimed at addressing real issues or leveraging opportunities but are more about maintaining appearances or satisfying short-term goals (Smith and Besharov 2019).

Coupled with this is the aspect of low levels of AI sensemaking, where an organization either underutilizes AI technology or uses it ineffectively. This could be due to a lack of expertise, inadequate investment in AI infrastructure, or a superficial application of AI tools without a deep understanding of their potential or limitations. As a result, the organization fails to harness the power of AI for data-driven insights, predictive analytics, and strategic decision-making.

Such organizations are likely to face unique and detrimental challenges. Decisions not grounded in reality or data-driven insights are likely to lead to ineffective strategies, missed opportunities, and operational inefficiencies. Stakeholders, including employees, customers, and investors, may lose trust in the organization's leadership and its ability to make informed decisions, leading to a decline in employee morale, customer satisfaction, and investor confidence. The perception of inauthenticity and technological ineptitude can harm the organization's reputation, making it harder to attract talent, partners, and customers. Without proper AI sensemaking, there is a risk of relying on biased algorithms or unethical use of data, leading to further legal and reputational risks. Ultimately, such organizations are likely to lag competitively behind their rivals in the long term.

5.2 Echo Chamber Strategy

In the contemporary business landscape, the integration of Artificial Intelligence (AI) in decision-making processes is increasingly seen as a cornerstone of strategic management. However, not all organizations are equally equipped to leverage AI for sensemaking - the process of interpreting and understanding complex data sets.

Authentic decision-making refers to a process where choices are made based on genuine understanding, ethical considerations, and a commitment to the organization's values and goals. In such an organization, decisions are transparent, involve stakeholder input, and are driven by a true desire to achieve the best outcomes. This approach fosters trust, boosts morale, and often leads to ethical and sustainable business practices. However, the absence of advanced AI sensemaking capabilities can present unique challenges. We have adopted the metaphor of 'Echo Chamber Strategy' for such organizations to describe the same ineffective decisions and strategies being adopted without gaining new insights or understanding.

Low levels of AI sensemaking imply that the organization either lacks the technological infrastructure, the expertise, or both, to effectively analyze and interpret large data sets. In the age of big data, this limitation can be significant. AI sensemaking tools offer the ability to process information at a scale and speed that human cognition cannot match, uncovering insights that can inform and enhance decision-making processes (Fernandez and Shaw 2020).

The organization may struggle to fully harness the wealth of data available in today's digital world. This can lead to missed opportunities, as data-driven insights often reveal trends and patterns not immediately apparent through traditional analysis methods. Without AI's rapid data processing capabilities, the organization might be slower in responding to market changes, customer needs, or emerging trends, potentially losing competitive advantage. While human insight is invaluable, over-reliance on it in the absence of AI support can lead to biases or errors in judgment, especially in complex or ambiguous situations. Leadership decisions are made without the full backing of AI-driven insights.

5.3 Chameleon Strategy

In an era where artificial intelligence (AI) is revolutionizing business operations, the juxtaposition of high AI sensemaking capabilities with fake decision-making presents a unique and paradoxical scenario.

High levels of AI sensemaking imply that the organization has robust capabilities in analyzing and interpreting vast amounts of data. This includes predictive analytics, trend spotting, and generating deep insights into customer behavior, market dynamics, and operational efficiencies. Such capabilities should, in theory, empower the

organization to make informed, strategic decisions that are aligned with its goals and market realities. We have adopted the metaphor of a 'Chameleon Strategy' to describe how such organizations adapt and blend into their various environments with skill, while hiding their true nature.

Despite the advanced AI capabilities, if the organization's decision-making is characterized as 'fake', it indicates a disconnect between the insights generated and the actions taken. Fake decision-making can manifest as decisions made for appearances, to conceal real motives, or to maintain the status quo. It might involve ignoring AI-generated insights in favor of personal agendas, political maneuvering within the organization, or decisions that prioritize short-term gains over long-term sustainability.

While having access to high-quality data and insights, such organizations fails to leverage them effectively. This underutilization of resources can lead to missed opportunities and poor strategic choices. Externally, the organization might gain a reputation for being data-rich but insight-poor, which can affect its brand image and customer trust. Ignoring AI insights can lead to operational inefficiencies, financial losses, and a failure to adapt to market changes, putting the organization at a competitive disadvantage. There may be ethical implications if AI insights are used to manipulate or mislead stakeholders, customers, or the market, leading to potential legal and compliance risks (Raisch and Krakowski 2021).

5.2 Greenhouse Strategy

The synergy of authentic decision-making and high AI sensemaking in organizations offers a blueprint for success in the rapidly changing external environment. This approach allows organizations to make decisions that are not only smart and data-driven but also ethical and aligned with their core values. As AI continues to evolve, the organizations that will thrive are those that manage to balance the power of technology with a deep commitment to authenticity and ethical responsibility. We use the metaphor of 'Greenhouse Strategy' to describe a nurturing environment where informed decisions allow for growth and flourishing of innovative ideas. This presents a powerful paradigm for organizational success.

Authentic decision-making is characterized by transparency, ethical considerations, and a genuine commitment to the organization's values and goals. It involves making choices that are not only beneficial in the short term but also sustainable and responsible in the long run. In an organization that prioritizes authenticity, decisions are made with stakeholder interests in mind, fostering trust and credibility.

When this authentic approach is combined with high levels of AI sensemaking, the organization is equipped to make decisions that are not only ethically sound but also deeply informed by data and advanced analytics. AI sensemaking involves using sophisticated algorithms to analyze large datasets, uncovering patterns and insights that might be invisible to the human eye. This capability allows organizations to anticipate market trends, understand customer needs more deeply, and identify potential risks and opportunities with greater precision (Ma and Sun 2020).

The integration of AI sensemaking into authentic decision-making processes enhances the organization's ability to make strategic, data-driven decisions. This combination ensures that decisions are not just based on human judgment and experience but are also backed by empirical evidence and predictive analytics. As a result, the organization can navigate complex business environments more effectively, making decisions that are both morally sound and strategically astute. Such organizations are likely to be at the forefront of innovation and generate significant competitive advantage.

Perhaps one of the most significant impacts of this combination is the reinforcement of ethical integrity and stakeholder trust. In an age where consumers and employees are increasingly concerned about ethical business practices, organizations that demonstrate a commitment to authenticity, bolstered by the responsible use of AI, can build stronger relationships with their stakeholders. This trust is invaluable, translating into customer loyalty, employee engagement, and a positive brand reputation.

6. CONCLUSION

The framework of authentic vs. fake decision-making and AI sensemaking is a valuable tool for researchers, managers, and organizational leaders. It provides a comprehensive approach to understanding and navigating the complex interplay between human decision-making and AI technologies in modern organizations.

This framework offers researchers a rich analytical tool to study organizational behavior and decision-making. It allows for a more nuanced understanding of how decisions are made, and the role technology plays in these processes. Researchers can use this framework to identify emerging trends and patterns in organizational decision-making, particularly in relation to the adoption and impact of AI technologies. The framework encourages cross-disciplinary research, combining insights from management science, information technology, ethics, and psychology (Desouza, Dawson, and Chenok 2020).

Managers can use this framework to assess their own decision-making processes and the extent to which they are leveraging AI for sensemaking. It helps in aligning decision-making strategies with organizational goals and values. Understanding the pitfalls of fake decision-making and the benefits of AI sensemaking can aid managers in risk assessment and mitigation strategies. The framework can guide managers on how to effectively integrate AI into their decision-making processes, ensuring that technology is used ethically and effectively.

Leaders can use this framework to foster a culture of authenticity and ethical use of AI in their organizations. It serves as a guide for developing policies and practices that support ethical decision-making and responsible AI use. This framework aids leaders in understanding the long-term implications of their decision-making strategies and the role of AI, helping them to plan for sustainable growth and innovation. By emphasizing authentic decision-making and responsible AI use, leaders can build and maintain trust with stakeholders, which is crucial for reputation management and customer loyalty (Fernandez and Shaw 2020).

The limitations of this framework are an over-simplification of the complexities and nuances inherent in organizational decision-making processes. Determining what constitutes 'authentic' versus 'fake' decision-making can be highly subjective and context dependent. Different stakeholders may have varying perceptions of authenticity, making it challenging to apply a uniform standard across diverse organizational contexts. There is a risk of technological determinism, where the role of AI in decision-making is overemphasized. The framework does not explicitly address the ethical implications and potential biases inherent in AI systems. AI sensemaking is only as good as the data and algorithms it relies on, which can perpetuate existing biases if not carefully managed. This framework primarily focuses on internal organizational processes and may underestimate the impact of external environmental factors on decision-making and AI implementation. Market dynamics, regulatory changes, and socio-economic factors play a significant role in shaping organizational strategies. The framework does not explicitly consider the skill gaps that might exist in organizations, particularly in understanding and leveraging AI technologies. The effectiveness of AI sensemaking is contingent upon the capabilities of the workforce which underlies the knowledge-based view of the firm.

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