TAKING SITUATEDNESS SERIOUSLY IN THEORIZING ABOUT COMPETITIVE ADVANTAGE THROUGH AI – A RESPONSE TO KEMP'S "COMPETITIVE ADVANTAGES THROUGH ARTIFICIAL INTELLIGENCE"

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In the recently published study "Competitive advantages through artificial intelligence: Toward a theory of situated AI", Kemp (2023) argues that AI can drive competitive advantage if three properties of AI can be overcome—its nature as a generic technology, its reliance on an explicit articulation of knowledge, and its tendency to be "myopic" due to its lack of contextual awareness. These challenges are said to impede the development of competitive advantage because they imply that any advantages accruing to a firm's use of AI can be replicated by other firms. The article's theoretical focus on situated AI argues that these three challenges can be overcome through the practices of grounding (which addresses the challenge of the generic nature of AI), bounding (which addresses the challenge that articulated knowledge can leave the boundaries of the firm), and recasting (which addresses the challenge of myopia). The author further argues that the firm's technological choices (i.e., the use of supervised or unsupervised learning and the explainability of the AI solutions) moderate the degree to which a firm can realize a competitive advantage from their use of situated AI.

While Kemp's article constitutes a welcome addition to recently published articles on AI in AMR (Balasubramanian, Ye, & Xu, 2020; Gregory, Henfridsson, Kaganer, & Kyriakou, 2021; Lindebaum, Vesa, & Den Hond, 2020; Raisch & Krakowski, 2021; Murray, Rhymer, & Sirmon, 2021), we believe that its contribution could be strengthened if it were to recognize that a firm's pursuit of a new AI capability might actually undermine a firm's competitive advantage. Three salient issues arise in this context.

First, Kemp's theorization relies on overly rational assumptions that do not take social values or the dark side of AI into account (e.g., Glaser, Pollock, & D'Adderio, 2021; Lindebaum et al., 2020; Moser, den Hond, & Lindebaum, 2022a; Omidvar, Safavi, & Glaser, 2022). AI inherently relies on algorithms which are instantiations of technique—"the rational pursuit of standardized means or practices for attaining predetermined results" (Lindebaum, Moser, Ashraf,

& Glaser, 2023: 575). Technique induces the process of mechanization of values, in which social values can collapse into an all-consuming pursuit of efficiency and profit as the goal function of an AI application. Technique can undermine a firm's core capabilities by subordinating the values that are the foundation of organizational activities (Kraatz & Flores, 2015) and strategic purpose (Rindova & Martins, 2023). For example, companies that employ logistics optimization algorithms to improve delivery efficiency might, in the short-term reduce labor and equipment costs while unintentionally undermining their team members' abilities to provide appropriate levels of customer service. Hence, firms pursuing competitive advantage with AI risk that successful deployment of their AI strategy might actually undermine foundational relationships with stakeholders (van Houwelingen & Stoelhorst, 2023).

Second, while Kemp's article considers the agency of AI based on the work of Emirbayer and Mische (1998), seminal pieces on the agency of technology, such as theorizing on sociomateriality (Orlikowski, 2007; Orlikowski & Scott, 2008), human-technology assemblages (Glaser et al., 2021; Omidvar et al., 2022), and embodied realities (Newlands, 2020), have been neglected. These studies question the instrumental view on technology (including AI; see also den Hond & Moser, 2022) and argue that when people interact with AI, their interactions fundamentally change work processes: technology not only 'gets the job done' but it changes the job and people, too (Moser, den Hond, & Lindebaum, 2022b; Orlikowski & Scott, 2023). This may lead to detrimental consequences that, through the mechanization of values (Lindebaum et al., 2023), harm firm, stakeholders, and society in the long-run. Indeed, "when companies deploy such [AI-facilitated pricing] strategies without considering their potential societal impacts, they risk harming people, inviting customer outcry and public outrage, and even reduced prospects for long-term survival" (Bergen et al., 2021). This has happened to Facebook, which focused on maximizing page views without people being aware (Bucher, 2017), thus compromising their

explicit core mission of connecting communities in pursuit of profit (Frenkel & Kang, 2021). Similarly, Uber harmed their drivers by using AI and send them to longer distance and less profitable locations (Bergen et al., 2021). This means that the successful application of grounding, bounding, and recasting activities may end up actually harming not only the firm, but also society more broadly, due to the mechanization of values—putting crucial boundary conditions on Kemp's theory.

Third, the theorizing of the algorithmic assemblage and human involvement in different elements of the algorithmic routine seems somewhat incomplete (see Lindebaum et al., 2023). To explain why Kemp's focus on human agency over material agency is problematic, consider propositions 3, 4, and 5. These propositions make the argument that supervised machine learning techniques and explainable AI will lead to a situated AI capability because human involvement and control of the process can lead to the construction of a 'unique' capability. However, we argue that a broader conception of agency in AI can help us envisage alternative assemblages that would falsify these propositions. For instance, a firm with a novel data set (e.g., Gregory et al., 2021) could leverage unsupervised learning algorithms to generate insights into their business that would be more inductive and novel than those generated by using supervised learning techniques. Although the unsupervised learning algorithm itself might not be unique, the firm's assemblage of data, algorithms, and professionals offers a unique resource in that the same algorithm learns differently from data that are unique for each firm, because they have been collected over time and in a particular context by its employees. Cases in question are ChatGPT where firms develop custom interfaces[1], or Netflix that uses unsupervised learning to try and

[1] Examples include Siemens (https://blogs.sw.siemens.com/art-of-the-possible/2023/07/19/the-potential-impact-of-llms-on-cae/), dm (https://retail-optimiser.de/en/dm-drugstore-launches-own-ai-chatbot-dmgpt/) and AXA (https://www.axa.com/en/press/press-releases/axa-offers-securegenerative-ai-to-employees).

understand customer preferences (Chong, 2021). As such, resource-dependent firms might sustain competitive advantage (Barney, 1991) even without what Kemp calls situated AI capability. Similarly, we suggest that supervised learning methods and explainable AI could also be part of an algorithmic assemblage that undermines competitive advantage, as a supervised learning model might be especially susceptible to "algorithmic inertia" (Glaser, Omidvar, & Safavi, 2023) by not being able to take environmental changes into account in a way that is rapid enough to deal with environmental dynamism. Overall, we suggest that situated AI activities may be enacted using different types of algorithmic assemblages, and that propositions 3, 4, and 5 require further refinement.

In sum, while Kemp makes an important contribution, this commentary suggests that two critical issues need to be addressed to advance the theorizing. First, recognizing that situated AI can undermine core capabilities and values through the mechanization of values. Second, conceptualizing algorithmic assemblages as entangled sociomaterial configurations rather than focusing solely on human agency. With greater attention to these issues, scholars can offer guidance to help managers deploy AI strategies that are beneficial for firms while avoiding unintended societal harms.

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