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UNDER THE SUPERVISION OF Pr. NORBERT LEBRUMENT



The challenges of generative artificial intelligence for digital services companies

As we witness the emergence of generative AI systems, how can companies in the digital sector respond to these new challenges?

I Context



The Generative AI Armada navigating uncharted waters !

The emergence of generative AI systems, such as ChatGPT, since November 2022 has triggered a buzz around artificial intelligence.

These technologies raise fundamental questions about their nature and implications for business, making this topic crucial for digital services companies.

OK. But how can we analyze all these ?



CGI's CEO plans to train 100% of workforce in generative AI.



Executives of Atos mentioned that they "drink their own champagne" in reference to the internal use of their generative AI systems.

IBM's CFO says "AI-driven productivity continues to be a top priority for businesses for both cost reductions and new revenue opportunities."

II Theoretical framework

Dynamic capabilities refer to a firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece, Pisano, & Shuen, 1997).

Let's take on the challenge of explaining this concept through the analogy of boxing.

Dynamic Capabilities explained through boxing ?
Challenge accepted !

Boxer's basic training



Let's start with the basics. Just like a boxer develops basic skills (strength, technique, endurance) to prepare for fights, a company has static resources like technology and management processes (Teece et al., 1997).

Match begins !

Once the match has started, the opponent's strategies and the fight conditions change, as our boxer begins to perceive new weaknesses in his opponent, similar to the rapidly changing technological and business environment companies face (Peteraf et al., 2013).



Dynamic capabilities

Teece's model of dynamic capabilities involves three core processes to maintain a competitive advantage :



- **Sensing opportunities:** Just as a boxer must be alert to their opponent's weaknesses, companies need to sense changes in the market.
- **Seizing opportunities:** Once an opportunity is identified, they must quickly seize it, akin to a boxer landing a decisive punch.
- **Transforming resources:** Finally, companies must transform and reconfigure their resources continuously, much like a boxer who constantly hones their skills and adjusts their training regimen to stay ahead (Teece, 2007; Eisenhardt & Martin, 2000; Helfat et al., 2007).

But, what is planned for the study ?

III Epistemology & Methodology

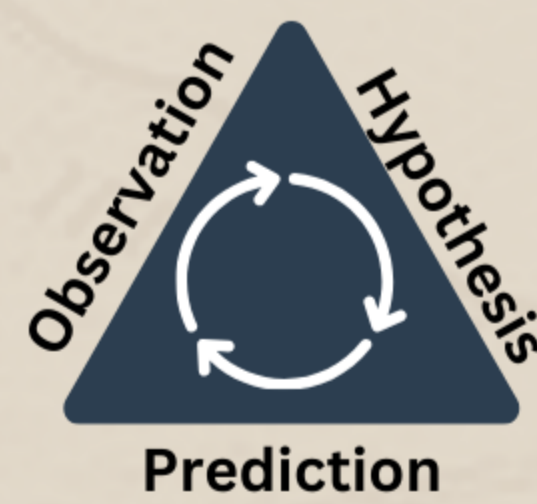
Epistemology

I have adopted **critical realism (Bhaskar, 2008)** as the epistemological foundation for this study. This framework is grounded in a **realist ontology** that acknowledges an independent reality, composed of **generative mechanisms** distinct from the events they produce and the knowledge observers have of them (Avenier & Thomas, 2011).

Ontology	Reality that exists independently of human observation, structured and differentiated.
Epistemology	Epistemic relativism: reality is not directly observable, but experienced events are knowable.
Purpose of knowledge generation	Identify the generative mechanisms responsible for events and patterns.
Status and form of knowledge	Plausible conceptions corresponding to the generative mechanisms activated. Field-testable statements.

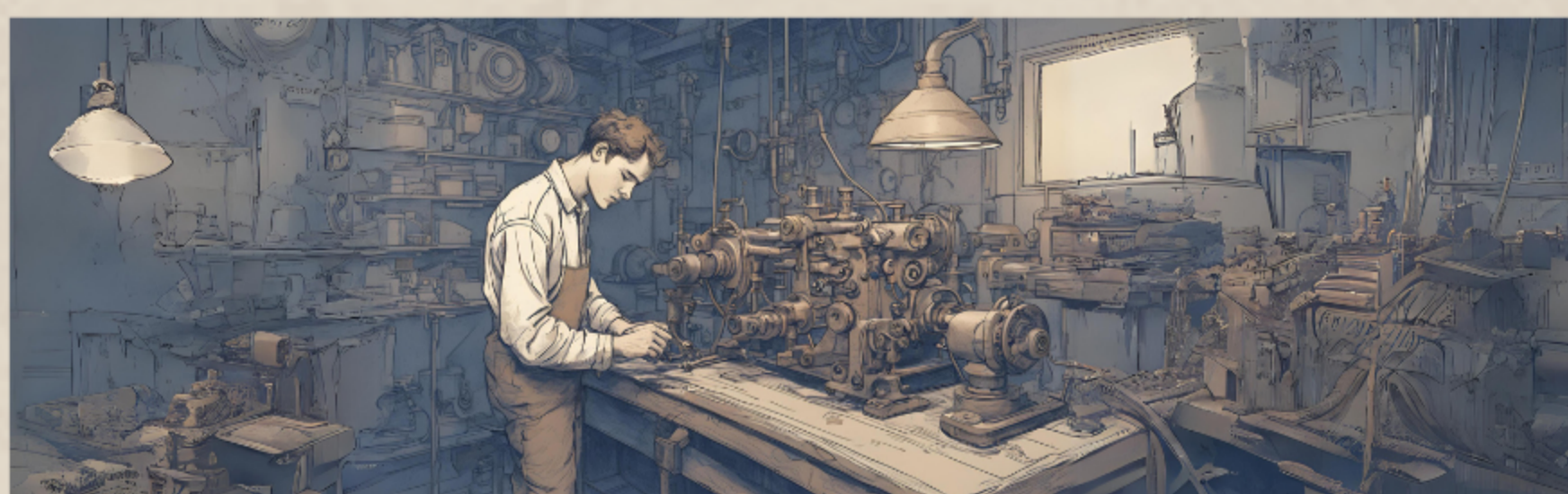
Abductive reasoning

I adopt abductive reasoning, which, in a critical realist paradigm, **does not aim to establish rules but seeks to identify plausible causes of observed phenomena by utilizing all available information, even if heterogeneous (Avenier & Gavard-Perret, 2018).** It is particularly suitable for discovering "other variables and relationships".



Methodology

I use mixed-research based on both quantitative and qualitative data analysis to get a grasp on the multifaceted impacts of generative AI adoption. This methodology allows for a comprehensive understanding of the phenomenon, combining statistical analysis of large datasets with in-depth insights from interviews and case studies to explore both broad trends and individual experiences.



A little added value to my research ? I'm a real tinkerer in Python programming !

IV Expected Results

At sector level

Initial analyses reveal that generative AI began serious integration into digital service companies in early 2023. Executive speeches highlight **organizational reinvention, focusing on improving internal operations and enhancing customer business.**

At the organizational level

Work in progress

My qualitative research aims to understand the strategic dynamics induced by generative AI for digital services companies using the theoretical framework of dynamic capabilities (Teece et al., 1997).

At the individual level

Work in progress

My aim is to measure the impact of generative AI adoption within digital services companies using the UTAUT2 framework, providing insights into how individual characteristics and situational variables influence the adoption and utilization of generative AI.

My contributions

I want my research to offer a unique empirical perspective on generative AI systems.

It should stand out by exploring how digital services companies, often neglected in the literature, integrate and adapt their practices to these disruptive technologies.

And, by the way, we shouldn't say "an AI", because AI is a discipline !

So, how about the results ?

References

• Ambrosini, V., & Bowman, C. (2009). What are dynamic capabilities and are they a useful construct in strategic management? *International Journal of Management Reviews*, 11(1), 29-49.

• Avenier & Thomas (2011). « Mixer quali et quanti pour quoi faire? Méthodologie sans épistémologie n'est que ruine de réflexion ».

• Bhaskar, R. (2008). *A Realist Theory of Science*. Classical Texts in Critical Realism. London; New York: Routledge.

• Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities, what are they? *Strategic Management Journal*, 21, 1105-1121.

• Gavart-Perret, Gotteland, Haon & Jolibert (2018). *Méthodologie de la recherche en sciences de gestion: réussir son mémoire ou sa thèse*. 3e éd. Montreuil: Pearson.

• Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., & Teece, D. (2007). *Dynamic capabilities: Understanding strategic change in organizations*. Blackwell Pub.

• Peteraf, M., Di Stefano, G., & Verona, G. (2013). The elephant in the room of dynamic capabilities: Bringing two diverging conversations together. *Strategic Management Journal*, 34(12), 1389-1410.

• Teece, D. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 32.

• Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 25.

• Venkatesh, Thong, & Xu (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly* 36, no 1: 157.

• Zollo, M., & Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, 13(3), 339-351.

DID YOU KNOW?
EVERY SINGLE
PICTURE YOU SEE
HERE IS WHIPPED UP
BY AN AI SYSTEM !