Understanding the role of Artificial Intelligence and its impact on digital transformation

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Abstract: Artificial intelligence can help organizations to be more efficient and make better decisions. Although its value proposition it's not clear how to implement and its role in the digital transformation context. In this research we expect to answer these questions though qualitative surveys (interviews) with digital leadership in organizations. We expect to stablish some relationships between these on a theoretical framework.

1. Introduction

Digital transformation is often used to describe the changing process in organizations to address new behaviors in a more digitized society. These changes are associated not only with technology but also with business models and society shifts [1]. Many companies are dealing with these transformations. The number of waves or digital transformation projects conducted seems to be what sets apart the digital transformation leaders from the laggards [2].

Artificial intelligence (AI) can be described as a system - not a specific technology - with automated or supportive decision-making capability. It is often delineated around the application in which it's presented. Companies understand it as means for improving or addressing challenges in process automation, data analytics and customer engagement [3][4]. The decision-making aspect, although seen as its key-concept, raises questions regarding the ethics behind the algorithms. The unadvised usage of pattern finding, input-output models increase the harming-risk of human individual values - freedom, equality, solidarity, right to life, non-discrimination, privacy, transparency and safety. Companies must carefully address this socio-ethical matter in order to reach sustainable development [5][6].

The 'triple bottom line' concept understands business sustainable development as a result of equal economic, social and environmental value creation. A wide range of applications explicits artificial intelligence's economic potential, supported by the increasing investments on tech giants and startups related to the topic in the last few years [7][6]. The wave-based approach of digital transformation (successive waves or projects) foresees artificial intelligence as one of its latest wave. Although businesses recognize potential in it, having some specific organizational characteristics is crucial for a successful and high impact implementation. In this matter, business outcomes are associated with strong digital capabilities - strategic, technology, data and security capabilities [1][2].

This research seeks to design and test an Artificial Intelligence implementation framework considering the required digital capabilities (human skills) and organizational ecosystems in terms of available technologies and decision-making process. Our research questions are:
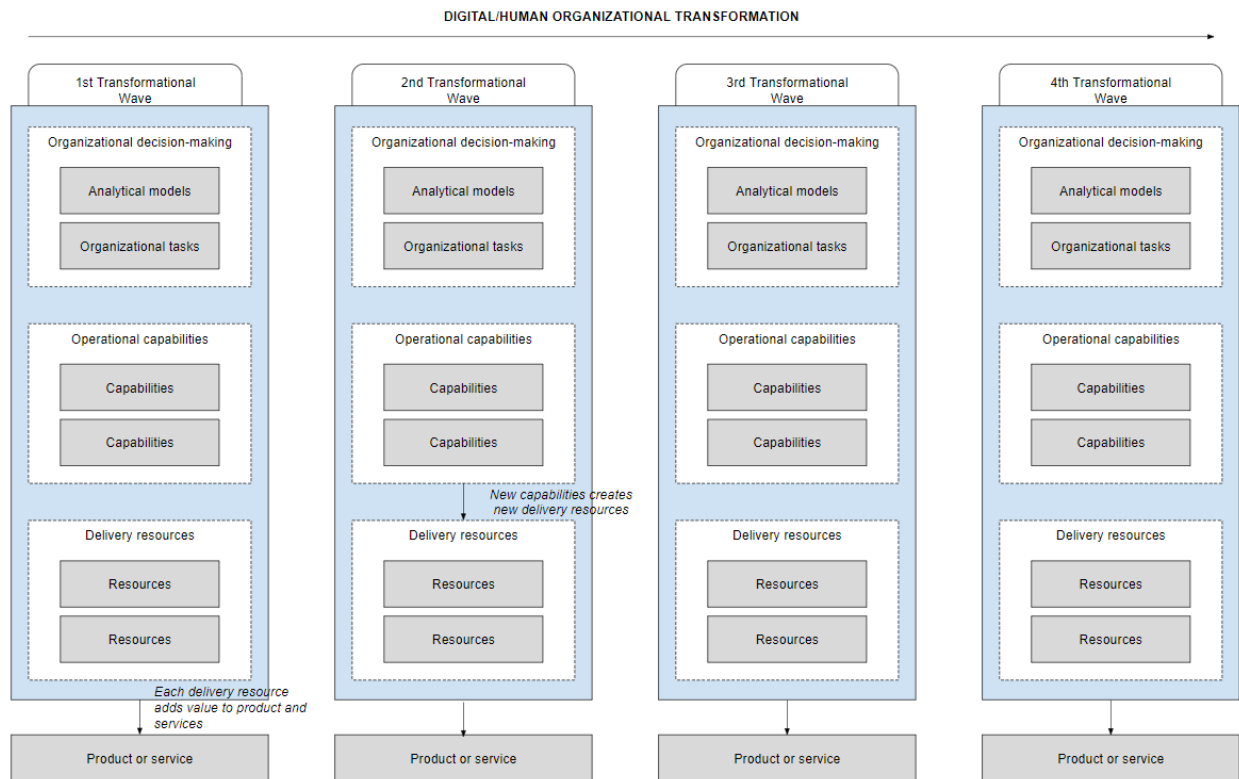- How artificial intelligence impacts digital transformation in organizations?
- What are the requirements for artificial intelligence implementation in terms of capabilities (human resources), organizational processes and technology?

2. Addressing Artificial Intelligence in the Digital Transformation agenda

The wave-based definition for Digital Transformation is adopted and the previously mentioned factors should be evaluated across stages. The number of waves as well as organizational decision-making, operational capabilities and delivery resources details are yet to be discovered.
Delivery resources can be understood as the company unique assets used to generate value (according to the triple bottom line value definition) through products or services. Operational capabilities are the skills necessary to use

properly the resources described previously. Organizational decision-making says about how organizational leadership make decisions, whether is totally human-based or algorithm-supported.

We believe these three factors can describe digital transformation and expect to see changes between companies that use artificial intelligence and those that do not. This hypothesis is yet to be validated through research qualitative survey – details also to be defined.

3. References

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