BUSINESS MANAGEMENT CHALLENGES AND THEIR IMPROVEMENT BY ARTIFICIAL INTELLIGENCE

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ABSTRACT

The main purpose of our study is to analyze the influence of Artificial Intelligence (AI) on firm performance, notably by building on the business value of AI-based transformation projects. This study was conducted using a four-step sequential approach: (i) analysis of AI and AI concepts/technologies; (ii) in-depth exploration of case studies from a great number of industrial sectors; (iii) data collection from the databases (websites) of AI-based solution providers; and (iv) a review of AI literature to identify their impact on the performance of organizations while highlighting the business value of AI-enabled projects transformation within organizations.

In the e-commerce and financial industries, AI has been deployed to achieve better customer experience, efficient supply chain management, improved operational efficiency, and reduced mate size, with the main goal of designing standard, reliable product quality control methods and the search for new ways of reaching and serving customers while maintaining low cost. Machine learning and deep learning are two of the most often used AI approaches. Individuals, businesses, and government agencies utilize these models to anticipate and learn from data.

KEYWORDS: *Business Management, Artificial Intelligence, Management Improvement, Artificial Intelligence Development, Machine Learning.*

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6. McCulloch and Pitts invented in 1943 the first mathematical model of the biological neuron, the formal neuron, using a physiological approach to AI (Benko&Lányi, 2009; Haenlein& Kaplan, 2019; McCorduck, Minsky, Selfridge, & Simon, 1977).

7. Wiener develops cybernetics, the science of how the human mind works, with the aim of modelling the mind as a "black box" with behavior dependent on feedback mechanisms. But this approach postulates that the brain and the architecture of its hundreds of billions of cells are mathematically mobilizable. This approach was further sublimated by the work of Donald Hebb, who is helping to endow formal neurons with learning capacities (Brown & Milner, 2003).

8. Herbert Simon introduced the notion of limited rationality in 1947. Later, in 1945, Allen Newell introduced the notion of heuristics for problem solving; an empirical method of problem solving, whose validity or efficiency is not proven. Their work also illustrates the cross-fertilization between computer science and AI. Firstly, the development of computer science makes it possible to conduct AI experiments; and secondly, the problems posed by AI experiments lead to the production of tools that serve the development of computer science (Benko&Lányi, 2009; Haenlein& Kaplan, 2019; McCorduck et al., 1977).

9. Between 1937 and 1948, Shannon established the link between Boolean algebra and electrical circuits and thus designed the digital electronics and information theory (Verdu, 1998).

10. In 1956 Newel, Simon and Shaw developed the Information Processing Language (IPL), with list structures, allowing the manipulation of chained elements to reproduce the associative character of human memory (Benko&Lányi, 2009; Haenlein& Kaplan, 2019; McCorduck et al., 1977).

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