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- **Paper title :** Automated Business process management - in times of digital transformation using machine learning or artificial intelligence
- **Source :** scholars.google.com
- **Keywords specific to the paper :** Artificial intelligence/ Data modeling

Summary : The paper discusses the impact of digital transformation on Business Process Management (BPM), emphasizing the role of machine learning (ML) and artificial intelligence (AI) in optimizing and automating processes. It begins by contextualizing the current stage of industrial evolution as the 4.0 digitalization era, marked by trends such as Smart Factory, Internet of Things, and Cloud Computing. In this landscape, BPM becomes crucial for companies to adapt to changing conditions and meet customer expectations.

The introduction outlines the necessity for companies to recognize and react to new competitive challenges in the digital age. Cloud computing and the Internet of Things are highlighted as key enablers of process management in the cloud, facilitating adaptability and analysis from anywhere.

In the face of Big Data and evolving supply chain dynamics, the paper argues for the importance of process management and automation to reduce response times and errors. It proposes ML and AI as solutions for agile, flexible, and automated BPM.

The scientific background section defines digital transformation, BPM, AI, and ML, providing clarity on key concepts. It distinguishes between strong and weak AI and explains the role of ML in generating knowledge from experience, particularly through supervised and unsupervised learning.

The research methodology involves a survey and shadowing of 25 digital companies in Germany to assess their utilization of ML and AI in BPM. The results highlight the prevalence of digital transformation in these companies, with a significant portion actively engaged in process optimization and automation.

Key findings include the high demand for ML and AI in BPM, especially for process optimization, and a gap between perceived and actual effectiveness of BPM and process automation.

In conclusion, the paper stresses the inevitability of digitization and the need for companies to leverage ML and AI for optimized process management. It emphasizes the importance of making smart decisions based on data and recommends targeted process automation as a critical success factor in the digital era.

Overall, the paper provides valuable insights into the intersection of digital transformation, BPM, and ML/AI, offering practical recommendations for companies navigating the complexities of modern business environments.

AI model used: Machine Learning and Artificial Intelligence

Introduction of AI models:

The paper introduces ML and AI as pivotal technologies for optimizing and automating business processes in the context of digital transformation. ML is discussed for its ability to extract knowledge from data through supervised and unsupervised learning, while AI is presented as a means of simulating human intelligence to enhance decision-making and automation.

Contribution to the proposed idea:

1. Identification of Key Technologies : The paper identifies ML and AI as essential components for modernizing business processes in the digital age, shedding light on their significance in driving efficiency and adaptability.

2. Addressing Challenges of Digital Transformation : By advocating for ML and AI in BPM, the paper addresses the challenges posed by digital transformation, offering solutions to cope with the complexities of evolving business landscapes.

3. Empirical Validation : Through the survey and analysis of 25 digital companies, the paper provides empirical evidence of the prevalence and demand for ML and AI in BPM, bridging the theoretical discussion with real-world applications.

4. Recommendations for Action : The paper concludes with actionable recommendations, emphasizing the strategic adoption of ML and AI for targeted process automation as a critical success factor in the digital era.

Overall, the paper contributes to the understanding of how ML and AI can revolutionize BPM in the face of digital transformation, offering insights and guidance for companies aiming to stay competitive in rapidly evolving markets.