

Synthesis 1: Automated business process management – in times of digital transformation using machine learning or artificial intelligence (roumanie, 2017)

- Impact of digital transformation on business process management (BPM).
- Concept of digital transformation - major changes thanks to digital technologies.
- Definition of Business Process Management (BPM) as a means of optimizing operational processes.
- Differentiation between strong/weak AI, illustrated by examples: IBM Deep Blue and the Waze application.
- Results of a survey of 25 German companies on their perception of digitalization.
- Perceived benefits of digitization, but concerns such as costs.
- Need for better understanding of BPM, differentiation between deep learning, machine learning and AI.

Synthesis 2: Application of Bayesian Networks to Recommendations in Business Process Modeling

- Application of Bayesian networks to business process modeling to provide recommendations.
- Types of recommendations: subject-based and position-based.
- Recommendation algorithms producing more accurate results using context.
- Position-based classification: forward completion, backward completion and automatic completion.
- Strength of Bayesian network models in the direct use of graphical representation of business process diagrams.
- Use of Bayesian networks to accelerate the modeling process.

Synthesis 3: Preface to the Special Issue on Artificial Intelligence for Business Process Management 2019

- Anticipating major changes in business process management thanks to AI and machine learning.
- The role of AI and machine learning in fields such as industrial engineering.
- Five articles included in this paper: topics such as knowledge-intensive process execution, business process controllability, automated complaint handling support, user agent specification and execution, and the application of AI to process mining are covered.
- Use of OWL2 and SWRL rules to facilitate task completion.
- Linking the work model to Guard Stage Milestone's approach to project management.
- Exploring how classic process exploration tasks benefit from AI.

Synthesis 4: Business Process Management: Terms, Trends and Models

- Linking business process management (BPM) to a company's culture, organization and results.
- BPM as a tool for corporate governance, guiding decisions and ensuring transparency.
- BPM as a competitive advantage that impacts a company's structure and production directly.
- Importance of process knowledge and management for the successful implementation of new process management systems.

- Analysis indicates that areas such as quality management, process logic and continuous improvement will continue to grow positively.

General Summary: The papers reviewed converge on a deep understanding of Business Process Management (BPM) in the era of digital transformation and artificial intelligence (AI). The 2017 Romanian paper sets the historical context for digital transformation and highlights the need to understand BPM and AI, revealing gaps in companies' understanding of deep learning. In parallel, the Polish paper explores the application of Bayesian networks for BPM recommendations, highlighting the accuracy of results and ease of graphical modeling. The preface to the 2021 online publication offers a forward-looking perspective, highlighting the imminent impact of AI and machine learning on BPM, particularly in the field of industrial engineering. The included articles address different aspects, from the execution of knowledge-intensive processes to the application of AI to the exploration of complex processes. Meanwhile, articles from Brazil in 2018 focused on the essential connections between BPM, organizational culture and corporate governance. It emphasizes that a comprehensive understanding of the process is critical to the successful implementation of IT systems. These contributions converge in the review of BPM and show commonalities in the importance of understanding processes and their integration into digital transformation. However, contradictions arise, particularly the limited recognition of deep learning in Romanian papers, highlighting the need for greater awareness. Finally, these articles highlight the evolution of BPM through technology and provide complementary perspectives on its integration with AI, but also highlight points of divergence that require special attention.