TRANSFORMING BUSINESS OPERATIONS: THE ROLE OF ARTIFICIAL INTELLIGENCE IN ROBOTIC PROCESS AUTOMATION

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ABSTRACT

Aiming to optimize and enhance corporate processes, this study explores the potent effects of fusing robotic process automation (RPA) and artificial intelligence (AI). Automation of repetitive, ordinary work has been the traditional usage of RPA. These systems become more intelligent, adaptable, and efficient when AI is incorporated into them, though, as new opportunities are created. We investigated recent findings and developments in AI-driven RPA using a Systematic Mapping Study (SMS) methodology, determining the various businesses that are utilizing these technologies. Especially in industries like manufacturing, healthcare, and finance, the results demonstrate notable increases in productivity, cost savings, and error reduction. There are still issues to be resolved, such as the dearth of AI applications in science and the requirement for improved assessment systems, in spite of these achievements. In order to close the knowledge gap between theory and reality regarding the application of AI-enhanced RPA, this study establishes the foundation for future research.

KEYWORDS: *Artificial Intelligence, Robotic Process Automation, AI-RPA Integration, Business Process Automation*