AI DRIVEN PROJECT MANAGEMENT TOOLS

CZU: 005.8:004.89
DOI: https://doi.org/10.53486/csc2025.13

ENACHE BIANCA ELENA
Alexandru Ioan Cuza University, Iaşi, Romania
bianca.enache.elena@gmail.com

GEORGESCU MIRCEA RADU
Alexandru Ioan Cuza University, Iaşi, Romania
mirceag@uaic.ro
ORCID ID: 0000-0002-7022-3715

Abstract. The concept of project management has significantly evolved over time, and it adapted periodically considering the needs on the market and technological advancements. In the latest years, the increased utilization of artificial intelligence (AI) tools has transformed project management by automating processes and improving efficiency. This paper explores the role of the AI tools on project planning, risk management, resource allocation, stakeholder engagement and team collaboration. The study employs a qualitative approach, analyzing existing literature and to assess the AI role in project workflow. Findings suggest that AI-driven project management solutions can improve processes, optimize workflows, accelerate tasks completion and enhance collaboration among teams. However, challenges such as data security, ethical concerns and workforce adaptation remain. The paper also discusses options for mitigating these risks in order to maximize the AI's potential in the field.

Keywords: Project management, artificial intelligence, risk management, resource allocation, team collaboration, automation.

JEL Classification: O32

INTRODUCTION

The rapid advancements in artificial intelligence over the past three years have significantly impacted various industries, specifically reshaping the way organizations approach project management. Within the field of project management, AI has evolved and it is now widely used and accessible. This transformation is changing all phases of the project, from initiation and planning to execution, monitoring and closure. Studies indicate that approximately 70% of projects fail due to various constraints and it highlight the need for innovative solutions to increase project outcomes and success (Trienpont International).

The evolution of project management methodologies reflects the ongoing adaptation to technological changes. Traditional "waterfall" methodologies dominated project execution between the 1980s and early 2000s and then Agile methodologies gained popularity in the 2010s (Nieto-Rodriguez). Today, hybrid project management approaches are necessary to address the complexities of modern projects. Research by Gartner (2019) predicts that AI will automate 80% of a project manager's administrative tasks by 2030 and in this way, it will allow professionals to focus more on other types of tasks, for instance related to leadership and innovation. AI-powered tools are developed to help project managers with automatization of reporting, risk assessment, resource allocation and other optimization. It provided access to templates, historical data or predictive analysis that can help both new project managers and experienced professionals.

MAIN CONTENT

1. AI-DRIVEN PROJECT MANAGEMENT

The adoption of AI in the project management field has led to the development of various AI tools designed to help professionals in this domain to optimize their daily tasks. These solutions are developed to facilitate communication, automatize reports, improve collaboration and help project managers allocate resources more effectively.

In the future period, the roles most likely to be taken over by artificial intelligence in project management include the project manager's assistant (52%) and project management advisor (44%). More than half of project managers expect an acceleration of digitalization in the business environment through the implementation of AI-based solutions (IPMA).

The adoption of AI can be seen as an opportunity, particularly since AI does not experience fatigue, does not require time off, and excels in processing large volumes of data quickly, and can make real-time predictions and recommendations based on historical data. Studies show that organizations investing in AI and utilizing AI tools experience an average productivity increase of 15% (Bainey, 43-55).

Utilization of AI tools can help professionals analyze faster and without many errors the historical data of other projects, identify patterns and help better forecast potential outcomes and risks or budget overruns. These details obtained faster with the help of AI tools enable project managers to be better equipped to reduce project failures. Furthermore, AI optimizes resource allocation by matching the right personnel to specific tasks based on skills, experience, and workload capacity.

An important contribution of utilization of AI is the automation of some repetitive tasks, such as reporting or document management. Considering this improvement in processes and project management time, it allows them focus on more creative or strategic tasks.

2. ADOPTION CHALLENGES

The use of AI has numerous advantages but also presents several challenges. Project documentation is often outdated or incomplete due to resource constraints or rapid Agile development cycles. Without accurate documentation, AI tools may produce unreliable results. Additionally, the lack of transparency in AI algorithms (Black Box Effect) raises concerns, prompting the need for Explainable AI (XAI) to improve trust and understanding (Pearce).

Challenges in AI adoption include data security or high implementation costs. Resistance to change and ethical concerns, such as biased training data, can also impact project outcomes (Institute Project Management). Ensuring fairness, transparency, and ethical compliance is important to mitigate risks. There can be different options to adapt to these challenges, where organization can set up procedures and guidelines, and provide training for better adoption.

CONCLUSIONS

AI tools have the potential to change the processes in project management and offer improved efficiency and better risk assessment and resource allocation and more efficient collaboration. At the same time the integration needs to happen in steps and mitigate the challenges that arises.

Future research should focus on real-world AI applications in project management and explore case studies that demonstrate the impact of AI on daily operations. In addition, studies should investigate best practices for overcoming adoption challenges and ensure that AI implementation will lead to sustainable improvements in project management.

REFERENCES

1. Bainey, K. (2024). *AI-Driven Project Management. Harnessing the power of Artificial Intelligence and ChatGPT to achieve peak productivity and success*. John Wiley & Sons, Inc., Hoboken, New Jersey, pp. 43-55.
2. Gartner, Inc. (2019, March 20). *Gartner Says 80 Percent of Today's Project Management Tasks Will Be Eliminated by 2030 as Artificial Intelligence Takes Over*. Available at: https://www.gartner.com/en/newsroom/press-releases/2019-03-20-gartner-says-80-percent-of-today-s-project-management [Accessed 28.02.2025].
3. Institute Project Management. (2023, June 9). *Artificial Intelligence in Project Management: Disruptions, Risks, Advantages, and Adaptation.* Available at: https://projectmanagement.ie/blog/artificial-intelligence-in-project-management-disruptions-risks-advantages-and-adaptation/ [Accessed 28.02.2025].
4. IPMA. (2021, January 15). *Report: More than half of project management professionals see the adoption of Artificial Intelligence in their profession in the next 5 years.* Available at: https://ipma.world/report-more-than-half-of-project-management-professionals-see-the-adoption-of-artificial-intelligence-in-their-profession-in-the-next-5-years/ [Accessed 28.02.2025].
5. Nieto-Rodriguez, A. (2024*). Hybrid Project Management, First Global Survey*. Available at: https://antonionietorodriguez.com/hybrid-project-management-survey/ [Accessed 28.02.2025].
6. Pearce, G. (2022, April 6*). Explainable Artificial Intelligence (XAI): Useful But Not Uncontested*. Available at: https://www.isaca.org/resources/news-and-trends/newsletters/atisaca/2022/volume-14/explainable-artificial-intelligence-useful-but-not-uncontested [Accessed 28.02.2025].
7. PMI. (2017). *A Guide to the Project Management Body of Knowledge (PMBOK Guide).* Sixth Edition. Project Management Institute, Pennsylvania.
8. PMI. (2020). *2020 Annual Report*. Available at: https://www.pmi.org/about/annual-reports/2020 [Accessed 28.02.2025].
9. PMI. (2024). *What is Project Management?* Available at: https://www.pmi.org/about/what-is-project-management [Accessed 28.02.2025].
10. Trienpont International. (2003, June 15). *Why do over 70% of software projects fail?* Available at: https://medium.com/@trienpont/why-do-over-70-of-software-projects-fail-deb4f48f18e6 [Accessed 28.02.2025].