

The Role of Artificial Intelligence in Enterprise Resource Planning Systems within Organizations

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ABSTRACT: Artificial intelligence (AI) is no longer a future concept in business-it is already embedded in the daily operations of organizations worldwide. This paper examines what happens when AI becomes part of Enterprise Resource Planning (ERP) systems and, more specifically, how this changes the way managers make decisions. The study combines a review of relevant management theory, a detailed case analysis of Microsoft Dynamics 365 Business Central and its AI assistant, Copilot and a survey conducted among 10 professionals who use the system in their everyday work and perform at least one of the basic Management roles and responsibilities. The results are clear: AI-integrated ERP systems have significant working time, reduce errors in routine processes, and give managers access to better, faster information. Survey respondents reported an average saving of around eleven hours per week. At the same time, the research highlights that technology alone is not enough - data quality and user readiness are equally important. The paper argues that the real value of AI in ERP lies not in replacing human judgment but in giving managers more room to use it.

KEYWORDS: artificial intelligence, enterprise resource planning, management, decision-making, Microsoft Dynamics 365, Copilot, automation, predictive analytics.

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Introduction

Every manager, regardless of the industry or organization size, faces the same challenge: making good decisions with imperfect information, under time pressure, while juggling multiple priorities at once. This is not a new problem – but the tools available to address it are changing rapidly. ERP systems have been part of organizational life for decades. The concept was introduced by Gartner in 1990 to describe integrated business software that could connect finance, procurement, sales, inventory and human resources in a single platform (GeniusERP, 2024). The promise was straightforward: instead of every department keeping its own records in its own system, everyone would work from the same data. In practice, this delivered real value – but it also had a clear ceiling. Traditional ERP systems are good at recording what happened. They are less helpful when you need to know what is likely to happen next or what you should do about it. That ceiling is now being pushed. According to McKinsey & Company (2024), 65% of organizations are now regularly using generative AI in their operations – up from 33% just a year earlier. This is not a gradual trend; it is a shift that is happening faster than most organizations anticipated. And one of the places where this shift is most visible is within ERP systems, where AI is moving these platforms from passive record-keeping tools toward something closer to an active decision-support partner.

This paper explores that shift. It draws on management theory and decision-making, a practical case study of Microsoft Dynamics 365 Business Central with embedded Copilot AI, and firsthand survey data from 10 professionals who use the system daily. The author works as a functional consultant for Business Central and has presented “AI-driven decision-making at the BizVision365 International conference in Amsterdam, which means this is not purely an academic exercise.

Research Aim and Research Questions

This paper aims to examine how AI integration within ERP systems affects managerial decision-making – both in terms of operational efficiency and decision quality.

Three questions guide the research:

- How does AI change what ERP systems can offer to managers?
- What do the numbers actually show regarding time savings and error reduction?
- What makes AI adoption work in practice – and what gets in the way?

Research Results

Management theory identifies planning, organizing, leading, and controlling as the core functions of a manager. Running through all of them is decision-making – the moment where analysis turns into action (Ashtalkoska, 2023). And the quality of that moment depends heavily on the information available at the time. This is where ERP systems have always played a role. By bringing together data from across the organization, they give managers a more complete picture than any single department

could provide on its own. In addition, the effective use of organizational knowledge and information contributes to higher levels of customer satisfaction and overall organizational performance (Kantardjieva et al., 2022).

Furthermore, organizational performance is influenced not only by technological capabilities but also by the continuous development of employee competencies and skills (Ashtalkoska et al., 2020). The global ERP market reflects how deeply embedded these systems have become – it was valued at 66 billion USD in 2024, with annual growth of 11.3% (Gartner, 2024). The move toward cloud-based ERP has made these systems accessible to smaller organizations that previously could not afford traditional implementations. But there is a well-known limitation. As Agrawal et al. (2018) point out, the value of information in decision-making depends not just on having it, but on being able to act on it quickly and accurately. Traditional ERP systems provide the data, but the work of analyzing it, identifying patterns, and generating forecasts has largely remained with the human on the other side of the screen. AI changes this by, as Agrawal et al. (2018) put it, reducing the “cost of prediction” near to zero. When forecasting becomes cheap and fast, a whole category of decisions that once required significant human effort can be handled differently. Gartner (2025) frames this as a transition from “systems of record” to “systems of intelligence” – and projects that by 2030, more than half of routine ERP tasks will be handled autonomously by AI.

Table 1

Frequency of AI use by position

Frequency	Consultants	Key Users	Project Managers	Total
Daily	2	1	2	5
Several times/week	1	1	1	3
Rarely	1	1	-	2
Never	-	-	-	-

Source: author’s own development.

Five of ten respondents use AI functionalities every day, while three use them several times per week. Two respondents reported using AI rarely, which, in both cases, reflected limited exposure to specific functionalities rather than a deliberate choice to avoid it. No respondent reported never using AI, which in itself says something about how embedded these tools have become in the work of people working closely with the system.

Table 2

Weekly time savings by Position

Position	Estimated weekly saving	Main users
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Functional consultants	~15 hours	Documentation, problem analysis, data summarization
Key users	~12 hours	Bank reconciliation, error analysis, supplier/product analysis, email summarization.
Project managers	~20 hours	E-mail drafting, budget analysis, project planning.

Source: author's own development.

The highest time savings were reported by project managers, who estimated saving approximately 20 hours per week – primarily through AI-assisted email drafting, time-tracking analysis, budget tracking and project plan preparation. Functional consultants reported the second-highest savings at around fifteen hours per week, mainly through automated documentation and problem analysis. Key users reported more moderate but still meaningful savings. Averaged across all respondents, the estimate comes to approximately 11 hours per person per week. On accuracy, the responses revealed a more nuanced picture than a simple scale could capture. Five out of ten respondents stated that accuracy depends heavily on the type of task: for organization, summarization and for analytical tasks, AI responses are generally reliable; for step-by-step process guidance on specific solutions, errors appear more frequently. Two respondents said they encounter inaccuracies “sometimes, but not often”, two said “often”, and one said “rarely”. This distribution suggests that the practical reliability of AI is closely tied to the nature of the task being performed. Regarding how respondents actually use AI recommendations, key users reported accepting Copilot’s suggestions directly in over 80% of cases for routine transactions. For larger or more consequential decisions, everyone reported doing additional checks. Three of the four respondents in these roles said they feel noticeably more confident in their decisions when Copilot has provided input, not because they follow it blindly, but because having a structured analysis available changes how they approach the decision. Project managers noted that AI-supported onboarding had shortened project timelines by roughly 10-15%, mainly by supporting documentation, testing scenarios and user adaptation during the transition period. One finding that cuts across all respondent groups is worth naming explicitly: nobody described AI as a threat to their job. The consistent framing was the opposite – AI handles the repetitive parts, freeing up time for strategic decision-making and work that requires judgment. This aligns with what Iansiti and Lakhani (2020) argue: the organizational value of AI lies not in replacing human decision-making but in giving people greater capacity to do it well.

Conclusions

The question this paper started with was whether AI integration in ERP systems actually changes how managers make decisions – and the answer, based on the evidence gathered, is yes, in ways that

are both measurable and meaningful. At the operation level, the effects are concrete. Routine processes that once took hours are completed in minutes. Errors resulting from manual data entry have been significantly reduced. Information that previously required an IT request or a waiting period is available on demand when a decision needs to be made. At a deeper level, something more interesting is happening. Managers in this study are not just faster – they report feeling better informed and more confident. The shift from reactive to proactive decision-making that AI enables is not just about efficiency; it changes the nature of what managers spend their time on. Two conditions consistently determine whether AI delivers on this potential. First, data quality: AI does not compensate for bad data or poor management; it amplifies it. Organizations that invest in AI without investigating in data governance are likely to be disappointed. Second, user readiness: knowing when to trust an AI recommendation, when to question it, and when to disregard it is a skill that needs to be developed – it does not come automatically with system access. The key takeaway is that AI cannot turn a bad manager into a good one, but it can ensure good managers have the right tools and insights to do their work even better when used carefully and effectively.

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