Journal of Information Systems Engineering and Management
2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Significance of Artificial Intelligence in Harmonizing Enterprise Resource Planning Systems

Vimaladhithan Salem Marimuthu Rajagopal
Gen Re - General Reinsurance, USA

ARTICLE INFO

ABSTRACT

AI as an embedded utility in enterprise resource plannig refers to a shift in the model of managing the business processes of modern companies. Companies face disparate processes, incoherent data models, and siloed operational modules. Process knowledge is useful corporate knowledge that can improve organizational performance. Information fragmentation occurs when different sources contain information expressed in different representation formats. Stack fragmentation issues are addressed by an automated fragmentation detection and resolution mechanism. The enterprise architecture enables embedding of artificial intelligence technologies in core business processes, as demonstrated by platforms such as SAP S/4HANA and SAP Business Technology Platform (BTP). Cloud-native environments — including Microsoft Azure, Amazon Web Services (AWS), and Google Cloud Platform — provide the scale required to run artificial intelligence workloads, while DevOps practices allow for artificial intelligence to be deployed quickly through continuous integration and delivery (CI/CD). SAP Joule, SAP's generative AI copilot, exemplifies how prompt engineering improves the enterprise capabilities of an artificial intelligence model. Greenfield implementations maximize data transparency, as organizations can build new capabilities during the design process. Brownfield transformation requires assessment of the existing data landscape, considering artificial intelligence processing criteria. Software automation ultimately increases the efficiency and reliability of the industrial productivity landscape. User-facing internal tools see the largest efficiency gains from artificial intelligence, and administrative dashboards see the most substantial increase in user satisfaction.

Keywords: Artificial Intelligence Integration, Enterprise Resource Planning Harmonization, Process Information Defragmentation, Cloud-Native Architecture, Software Automation Efficiency

1. Introduction

AI integration into enterprise resource planning systems represents a key advancement in contemporary enterprises. Leading ERP platforms such as SAP S/4HANA have increasingly embedded artificial intelligence capabilities directly into core business functions, enabling intelligent automation across finance, procurement, supply chain, and human resources. Yet organizations encounter difficulties: processes often remain fragmented, data models lack consistency, and organizational operational modules are isolated, limiting the effectiveness of fully integrated enterprise resource planning systems. Process knowledge is a form of corporate knowledge that can be a valuable asset for improving organizational performance [1]. However, process knowledge is often spread across several sources within an organization.

Information fragmentation can occur in two ways: first, sets of sources contain non-overlapping information, for example from different viewpoints. Second, stakeholders use different representation formats: business users tend to prefer verbal descriptions and work instructions [1]. Business analysts often prefer to work with graphical process representations, but as process model formats are incompatible with each other, process information ends up being fragmented. This challenge is particularly pronounced in large SAP landscapes where multiple modules — SD, MM, FI, CO, and HCM — operate with their own configuration layers and data models.

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

In some cases, disaggregated information can weaken organizational performance because it may contradict other documented processes [1]. These contradictions create barriers between what different stakeholders perceive as being the case, leading to counter-productive measures that departments inadvertently take towards each other. Even without contradiction, different sources need to be integrated — to provide a complete understanding of a process, work instructions, business rules, and graphical models need to be analyzed together.

Generative artificial intelligence is also perceived as a planned enabler that can reduce some of the fragmentation aspects. AI is found to influence planned decision-making in entrepreneurial as well as enterprise contexts [2]. SAP Business AI, SAP's overarching strategy for embedding AI across its enterprise portfolio, exemplifies this by integrating machine learning and generative AI capabilities directly into SAP workflows. The technology can identify patterns among multiple data sources, and machine learning can identify relationships among process elements. These natural language processing capabilities transform how organizations extract and aggregate knowledge across the enterprise from unstructured content sources.

Process information defragmentation techniques detect and solve such fragmentation issues [1]. They also take care of conflicting information taking place in multiple sources, bringing the entire process into one piece. The first challenge in addressing this issue is the ability to extract process information from heterogeneous sources in a structured form. The second challenge is the specification of mappings from the extracted process information to terminology and abstraction levels. Both problems require advanced algorithms that combine linguistic and domain knowledge.

At the enterprise level, artificial intelligence drives standards and process harmonization between business functions. It also improves data consistency and governance through smart automation [2]. Artificial intelligence also improves planned decision-making when customary enterprise planning functions are embedded with artificial intelligence capabilities to improve cross-function visibility. Redundant and unique customizations decrease over time with harmonization efforts and system integration, enabling scalable digital transformation.

Artificial intelligence dramatically changes how an organization analyzes and consumes information and makes decisions. To gain a competitive advantage in fast-moving markets, an aligned enterprise architecture is essential. These systems are built on enterprise resource planning infrastructure — most notably SAP S/4HANA running on cloud environments such as Microsoft Azure — improved by AI capabilities that give them a level of agility and accuracy previously unavailable.

2. Problem Statement and Research Gap

Large enterprises carry out their operations using various enterprise modules such as finance, supply chain management, human resources, procurement, and manufacturing, generating high volumes of structured and unstructured data. In SAP environments, these modules correspond to core components of SAP S/4HANA, where multi-module collaboration entails wide-ranging coordination mechanisms to ensure integrated operations [3]. These systems therefore require smart recognition and management capabilities. Customary approaches to integrating modules do not account for the multidirectional data flow between functions.

One of the classic issues with configuration in enterprise system management is the misconfiguration problem, which occurs at multiple levels of the system and can impact system reliability [4]. In SAP landscapes, configuration errors across transport layers, client settings, and integration scenarios are a well-known operational risk. Configuration errors can pose a risk to system availability, security posture, and performance characteristics. Being dependent on certain run-time conditions to surface and often involving subtle misconfigurations, the investigation of these types of configuration errors can be challenging.

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/
Research Article

Configuration errors can be subdivided by their means of resolution. For example, syntax errors occur if the expected formal syntax of the configuration language is violated [4]. Semantic errors occur if logically conflicting specifications are allowed in a configuration. Constraint violations occur if bounds are violated. A cross-component error occurs when two or more connected modules interact incorrectly due to mismatched configurations between them.

Multi-module systems can also have the property that the configuration of one module depends on that of another module, and vice versa [3]. Not propagating the change of configuration to the other module can lead to inconsistencies. These inconsistencies can also compound over time as organizations evolve the modules. This drift from the intended state compromises system integrity and predictability. This is a recognized challenge in SAP implementations, where dependencies between modules such as Materials Management (MM) and Financial Accounting (FI) require careful synchronization.

The fundamental gap occurs when enterprise-wide artificial intelligence returns are limited. While substantial investments have been made in smart technologies — including SAP Business AI and cloud deployments on Microsoft Azure — few returns have been realized. Particularly challenging is lift-and-shift transformations. At low reengineering levels, architectures are not reengineered and fragmentation patterns are maintained, while poor data harmonization keeps the information landscape a black box for AI implementations.

Computer vision and smart recognition techniques can provide partial solutions to the module coordination problem, automating the identification of data patterns in different modules [3]. Smart algorithms are used to optimize the management system and reduce the information handling overhead, but this requires standardized data representations; the lack of such data structures limits the applicability of the advanced recognition methods.

Systems approaches to configuration management describe how to manage technical discrepancies [4]. Automated verification tools can check for configuration errors before a system is deployed. Runtime monitoring detects drift from expected configurations, while recovery mechanisms return the expected configurations upon error. These systematic approaches require organizational support to reduce the frequency of configuration-related failures.

It addresses the issue of the necessity for systematic approaches to implementing intelligence, automation, and prediction across the value chain, and to harmonizing enterprise data, to enable successful artificial intelligence. Without the right data architecture, a smart system cannot deliver additional performance. To close the divide between AI investment and impact, stakeholder harmonization efforts are needed.

Configuration Error Category	Error Characteristics	Affected Enterprise Modules	Detection Complexity
Syntax Errors	Violations of configuration language rules	Finance, Procurement	Low
Semantic Errors	Logically inconsistent specifications	Supply Chain Management, Manufacturing	Medium
Constraint Violations	Parameters exceeding permissible boundaries	Human Resources, Finance	Medium
Cross-Component Errors	Incompatible settings between interconnected modules	All Modules	High

Table 1: Taxonomy of Configuration Errors Across Enterprise System Modules [3, 4]

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

3. Artificial Intelligence Integration Framework

Enterprise-wide integration of artificial intelligence into information systems requires the application of an overarching architectural approach. The combination of technical and domain knowledge is essential for successful integration [5]. SAP Business Technology Platform (BTP) serves as the primary integration and extension layer in SAP landscapes, supporting the adoption of AI capabilities across business processes. Enterprise architecture supports the adoption of artificial intelligence technologies for business processes, and cloud-native architecture on platforms such as Microsoft Azure, AWS, and Google Cloud Platform supports the scaling of artificial intelligence workloads. Microservices architecture decomposes applications into smaller functional services. The components of applications are packaged and run independently in a container for portability and isolation. Orchestration mechanisms can then allocate resources according to demand.

By processing enterprise system data streams in real-time and forecasting business trends based on historical information, organizations can automate operational decision-making processes that would otherwise need human involvement. SAP S/4HANA deployed on Microsoft Azure, for instance, leverages Azure's AI services alongside SAP Business AI to deliver predictive analytics and intelligent automation across financial, procurement, and supply chain functions. Data streams monitored by machine learning models for anomaly detection and trend prediction drive transformation across many areas of the enterprise.

DevOps practices improve the artificial intelligence lifecycle through continuous integration and continuous delivery (CI/CD) practices [5]. CI/CD allows machine learning models to be delivered quickly and reliably via pipelines. Microsoft Azure DevOps provides robust pipeline management capabilities that organizations use to automate the deployment of SAP extensions and AI models. A related discipline, DataOps, includes data quality, governance and security functions and is a set of data pipeline management processes that help create reliable AI datasets through automation. DevOps and DataOps are complementary practices that create ecosystems for developing artificial intelligence applications.

SAP Joule, SAP's generative AI copilot, is a prominent example of how prompt engineering is operationalized within enterprise systems. Embedded across SAP S/4HANA, SAP SuccessFactors, SAP Ariba, and other SAP solutions, SAP Joule enables users to interact with enterprise data through natural language, retrieve insights, and execute workflows without navigating complex menu structures. To improve performance, prompt engineering is often used in enterprise use cases to reduce mistakes, biases, and inconsistency that arise due to the limitations of the artificial intelligence model itself. Results from studies of prompt engineering training show that 79.56% of respondents reported seeing much or very much improvement in performance [6]. Well-constructed prompts lead to better performance of large language models in many enterprise areas.

In some studies, 78.1% of participants rated various prompt engineering techniques as very effective or effective for achieving operational autonomy [6]. Fine-tuning instructions is more effective in reducing model hallucinations and improving responses. SAP Business AI applies this principle by grounding AI outputs in SAP's business context, domain-specific data models, and process knowledge, thereby improving response accuracy and reducing irrelevant outputs in enterprise workflows.

The framework has several algorithmic methods for various operational requirements. Machine learning supports pattern recognition in large data sets. Automation protocols enable systems to perform tasks without human input. Natural language processing — as exemplified by SAP Joule's conversational interface — focuses on human-system interaction [6]. The reliability of automated grading and comment generation is rated at 82%, and the overall quality of generated content is rated as excellent by 41% of customers and as good by 37%. Prompt patterns are reusable solutions for improving interaction with language model applications.

An important application of AI-enabled automation is understanding business processes end-to-end. SAP Business AI integrates process intelligence capabilities that analyze workflows across the SAP

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

ecosystem to identify inefficiencies and recommend optimizations. Robotic process automation can take over high-volume, repetitive tasks at speed, freeing people to focus on creative and strategic work. Supply chain management benefits from improved inventory levels and demand forecasting, and customer service operations can deploy intelligent response systems.

The successful application will require the interplay of model training and data quality [5] and the system integration of application programming interfaces and middleware solutions. SAP Integration Suite on BTP and Microsoft Azure Integration Services are prominent examples of middleware ecosystems that enable seamless data exchange between SAP and non-SAP applications. Cross-functional collaboration is also required to align technical capabilities with business requirements. 92% of employer stakeholders surveyed believe that a fundamental expertise of AI-driven technology is very important or fairly important to operational success [5]. Data governance policies that consider privacy and regulatory compliance considerations are one layer in a multi-layer architecture that allows organizations to embed intelligence at all operational levels.

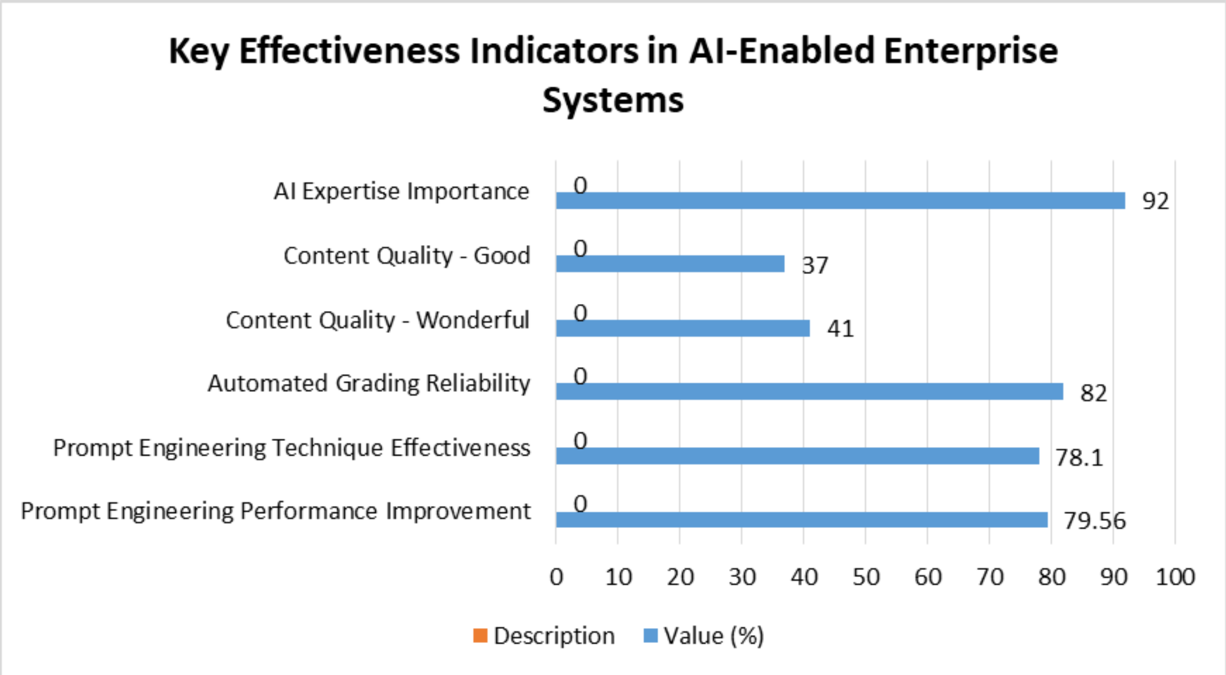

Figure 1: Key Effectiveness Indicators in AI-Enabled Enterprise Systems [5, 6].

4. Technical Implementation Approaches

Implementation strategies vary widely according to the level of organizational transformation maturity. Greenfield implementations of SAP S/4HANA on cloud platforms such as Microsoft Azure can achieve greater transparency because the system is newly built without legacy constraints. The cost of migrating a greenfield ERP implementation to a new package is around 24 million dollars for seven years of use [7]. Such an exercise gives enterprises opportunities to absorb SAP Business AI capabilities, SAP Joule integration, and cloud-native softwarization trends into the new system. Microsoft Azure's infrastructure, including Azure Virtual Machines optimized for SAP workloads and Azure NetApp Files for high-performance storage, allows SAP systems to achieve enterprise-grade availability and performance. Cloud-based architectures increase mobile productivity and allow moving work out of customary office styles.

In contrast, brownfield transformations of existing SAP ECC or SAP S/4HANA landscapes require a thorough understanding of the data landscape, which is usually hard to obtain for an organization

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/
Research Article

performing a transformation with low levels of reengineering [8]. The most negative influence (path coefficient of -0.328) with respect to the degree of data landscape transformation is caused by legal and regulatory constraints. Technical and operational impediments, with a negative coefficient of -0.163, are less impactful but still important. The Q-squared values of 0.577 from the transformation models indicate a moderate to strong predictive capability to explain the implementation success factors.

Integration is a key part of implementation. 44% of transaction data in enterprise systems is created externally [7] to the organization. In SAP environments, this reliance means that SAP Integration Suite, application programming interface integration, and electronic data interchange are critically important. Studies have shown that 40% of enterprise resource planning implementations fail to meet expectations because of a lack of integration infrastructure. Furthermore, 63% of companies cite connectivity losses due to integration failures. AWS also offers SAP-certified infrastructure and migration tooling through its SAP on AWS program, providing organizations with an alternative cloud pathway for SAP deployments. These numbers further stress the need for thorough integration planning during implementation.

The infrastructure must be able to allow agents autonomy during operations to increase reliability. The survey revealed that governance challenges can considerably influence outcomes for development [8]. The 87.37% return rate for the questionnaire strengthens the validity of the findings. Financial and economic constraints (path coefficient = -0.180) clearly have a far-reaching negative impact on implementation viability. Technical barriers also exist, including vague standards and lack of human resources to meet them.

Further complicating the modernization effort is customization. One study found that 91% of enterprise system users have customized functionality with additional code [7], a challenge especially prevalent in long-standing SAP ECC environments where years of custom ABAP development complicate migration to SAP S/4HANA. 92% of users said their customizations were causing, or would cause, issues trying to move to modern platforms. SAP's clean core strategy and the use of SAP BTP extension applications are specifically designed to address this challenge — moving custom logic outside the core ERP system to enable easier upgrades and AI adoption.

Skills shortages are a substantial barrier to implementation, with 86% of organizations experiencing integration delays, the most reported barrier being a lack of expertise [7]. By 2027, only 30% of organizations expect to have sufficient data quality for the use of advanced AI in enterprise systems. This skill gap is particularly evident in SAP landscapes, where expertise in SAP Business AI, SAP Joule configuration, and Azure-SAP integration architecture is still emerging. Thus, it is necessary to integrate governance, environmental, financial, and operational drivers into transformation protocols [8].

Implementation Factor	Greenfield Characteristics	Brownfield Characteristics
Data Transparency	Optimal transparency during design phase	Requires careful assessment of existing landscapes
System Customization	Minimal custom code recommended	91 percent of users employ customized code
Migration Cost	Average 24 million dollars over seven years	Variable based on existing infrastructure
Integration Delays	86 percent experience delays due to expertise shortage	86 percent experience delays due to expertise shortage
Legal Regulatory Impact	Path coefficient negative 0.328	Path coefficient negative 0.328

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Technical Operational Impact	Path coefficient negative 0.163	Path coefficient negative 0.163
Financial Economic Impact	Path coefficient negative 0.180	Path coefficient negative 0.180
Model Predictive Relevance	Q-squared value 0.577	Q-squared value 0.577

Table 2. Implementation Characteristics and Challenge Factors in Enterprise System Transformation [7, 8].

5. Benefits and Performance Metrics

Several operational metrics show improvement post-AI implementation. Software automation holds the potential to improve operational efficiency, productivity, and operational reliability in most industries [9]. In SAP environments, SAP Business AI enables automation across procurement (SAP Ariba), financial close processes (SAP S/4HANA Finance), and workforce management (SAP SuccessFactors). Automation technologies replace manual, repetitive, and time-consuming tasks by performing these tasks through automated systems. Automation is generally faster and more reliable than manual labor, and systematic application of automation technologies consistently yields predictable results across enterprise functions.

Successful applications of software-based automation can be found in production line management, inventory management, and quality control [9]. In SAP-managed supply chains, SAP Business AI-powered demand sensing and inventory optimization help reduce excess stock while improving service levels. Predictive maintenance capabilities, accessible through SAP Asset Intelligence Network, allow for equipment failure to be averted before it occurs, thus minimizing downtime and prolonging the lifetime of equipment.

Software is also used to detect defects repeatedly with greater reliability through advanced sensors and imaging [9]. Product standards can be checked continuously through real-time monitoring. Furthermore, the use of real-time automated detection systems allows for immediate corrective actions, and systematized quality control automation leads to waste minimization and improved product quality. SAP's integration with Microsoft Azure IoT and Azure Machine Learning services further extends these capabilities into smart factory and Industry 4.0 scenarios.

User-facing internal tools are another way to deploy artificial intelligence to improve efficiency [10]. SAP Joule serves as the primary user-facing AI interface within the SAP ecosystem, enabling employees to query enterprise data, generate reports, and complete transactions using natural language. As tested on several datasets, task completion times with AI-integrated tools range between 26.7 and 30.2 seconds depending on model configuration [10]. User satisfaction scores of administrative dashboards range from 4.2 to 4.9 on five-point Likert-type scales, with the highest scores of 4.9 aligning with AI-assisted workflows — consistent with what SAP Joule aims to deliver through conversational enterprise interactions.

A usability test of freely available tools to improve the efficiency of operations found average scores of 4.5 and 4.7 for ease of navigation and ease of reporting, respectively [10]. Feedback on tool navigation and functionality is generally positive. By maintaining regular contact with stakeholders, issues with the design process can be quickly identified, and custom artificial intelligence solutions can be implemented to address operational bottlenecks.

Data analytics and reporting tools provide insights into operational performance [9]. SAP Analytics Cloud, integrated with SAP S/4HANA and deployable on Microsoft Azure, provides organizations with real-time dashboards and AI-augmented planning capabilities. Analytics capabilities help discover inefficiencies in operations, and data-driven improvement leads to iterations of improved automated systems.

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/
Research Article

In contexts where AI capabilities are part of the product and aligned with the needs of users, their integration leads to improvements in operation [10] and more efficient user workflows. SAP Business AI's domain-specific grounding and SAP Joule's natural language interface collectively reduce operational friction, improve worker satisfaction, and deliver measurable performance gains, validating investments in harmonizing artificial intelligence across enterprise systems.

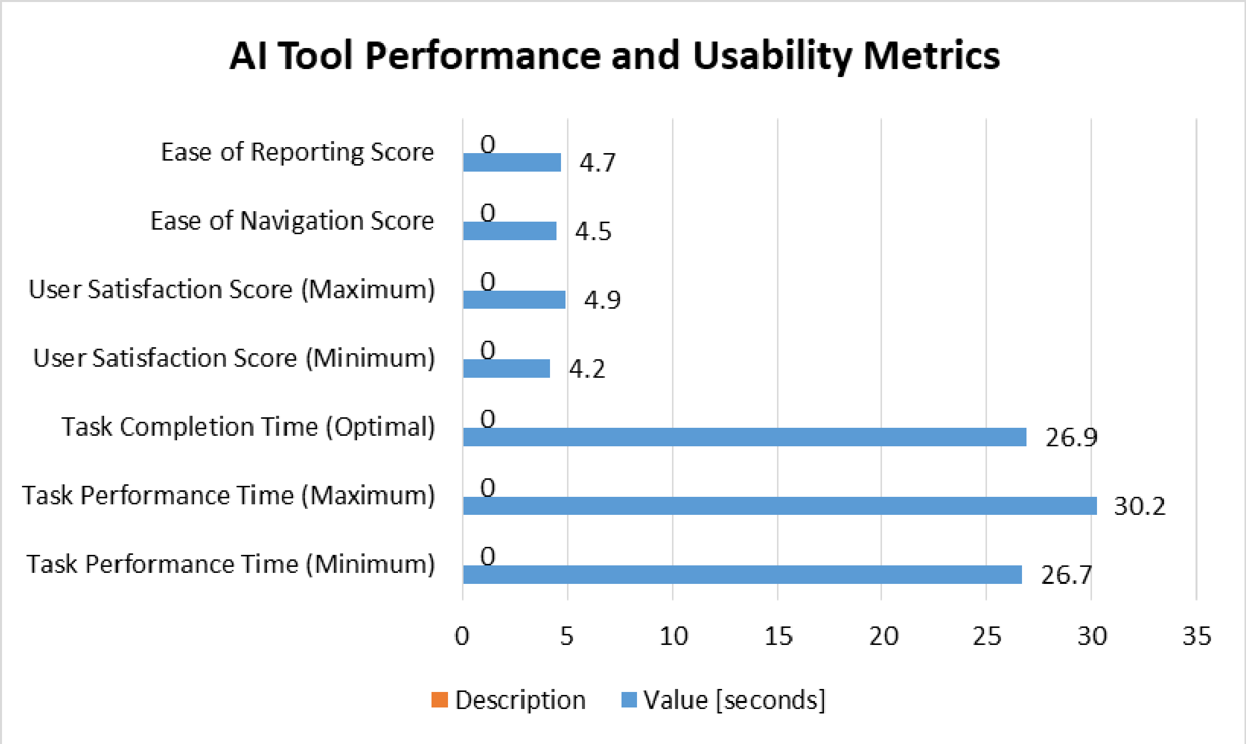

Figure 2: AI Tool Performance and Usability Metrics [9, 10].

Conclusion

The combination of artificial intelligence with enterprise resource planning systems represents an evolution of enterprise from systems of record to smart systems of understanding and action through initiatives in systematic harmonization. Platforms such as SAP S/4HANA, augmented by SAP Business AI and the SAP Joule copilot, exemplify this transformation — enabling organizations to embed intelligence directly into core business processes at scale. Future automation trends include self-healing automation, hyper-automation combining AI and robotic process automation, real-time digital twins, and generative artificial intelligence in scenario-based planning. Companies deploying SAP on cloud platforms such as Microsoft Azure or AWS are better positioned to adopt these trends through elastic infrastructure, native AI services, and seamless DevOps toolchains. Enterprise architecture — anchored in SAP BTP and extended through Azure Integration Services — is being used as a platform for embedding smart technologies into core business processes. Cloud-native systems offer an always-on environment irrespective of when or where. DevOps and DataOps working hand in hand provide a smooth artificial intelligence ecosystem through continuous integration and continuous delivery. Prompt engineering, as operationalized in SAP Joule, can reduce the errors, biases, and distortions that stem from model limitations. Real-time monitoring allows for continuous assurance of quality. User-centered design is related to favorable employee experiences and operational success. Systematic user-centered tool development, as demonstrated by SAP's

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

2026, 11(3s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

investment in SAP Business AI and Joule, leads to smoother end-to-end processes with measurable operational output from harmonization investments across corporate activities.

References

[1] Han van der Aa et al., "On the Fragmentation of Process Information: Challenges, Solutions, and Outlook," ResearchGate, 2015. [Online]. Available: https://www.researchgate.net/profile/Han-Van-Der-Aa/publication/279885786
[2] Oscar López-Solís et al., "Effect of Generative Artificial Intelligence on Strategic Decision-Making in Entrepreneurial Business Initiatives: A Systematic Literature Review," MDPI, 2025. [Online]. Available: https://www.mdpi.com/2076-3387/15/2/66
[3] Lei Sun et al., "Computer Vision-driven Multi-module Collaboration: Optimization of Intelligent Commodity Recognition and Management System" ACM, 2025. [Online]. Available: https://dl.acm.org/doi/pdf/10.1145/3783669.3783763
[4] TIANYIN XU and YUANYUAN ZHOU, "Systems Approaches to Tackling Configuration Errors: A Survey" ACM Computing Survey, 2015. [Online]. Available: https://dl.acm.org/doi/pdf/10.1145/2791577
[5] Zafer Ali and Henrietta Nicola, "Accelerating Digital Transformation: Leveraging Enterprise Architecture and AI in Cloud-Driven DevOps and DataOps Frameworks," ResearchGate, 2018. [Online]. Available: https://www.researchgate.net/profile/Henrietta-Nicola/publication/386253817
[6] Kovan Mzwri and Márta Turcsányi-Szabo, "The Impact of Prompt Engineering and a Generative AI-Driven Tool on Autonomous Learning: A Case Study," MDPI, 2025. [Online]. Available: https://www.mdpi.com/2227-7102/15/2/199
[7] Opentext, "ERP integration strategies for cloud, API, and AI readiness," [Online]. Available: https://www.opentext.com/media/white-paper/erp-integration-strategies-for-cloud-api-and-ai-readiness-wp-en.pdf
[8] Dan He et al., "Navigating challenges in the sustainable development of urban brownfields: A PLS path modeling perspective," Ain Shams Engineering JournalAin Shams Engineering Journal, 2024. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S2090447924003770
[9] Daniel Ajiga et al., "The role of software automation in improving industrial operations and efficiency," International Journal of Engineering Research Updates, 2024. [Online]. Available: https://www.researchgate.net/profile/Daniel-Ajiga/publication/383410390
[10] Xue Song, "User-Centric Internal Tools in E-commerce: Enhancing Operational Efficiency Through AI Integration," ACM, 2025. [Online]. Available: https://dl.acm.org/doi/pdf/10.1145/3770177.3770292

Copyright © 2026 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.