

# **BENEFITS AND MANAGEMENT OF AI AGENTS IN IT ORGANIZATIONS: A CRITICAL PERSPECTIVE**

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**Abstract.** Artificial Intelligence (AI) agents are transforming modern organizations through automation, decision support and operational efficiency. Resources such as chatbots, monitoring systems and autonomous decision-making tools are increasingly embedded to manage repetitive tasks, streamline workflows and improve deliverables. This paper presents how AI agents augment human capabilities while supporting strategic goals. Benefits such as automation boosts productivity, reduces costs and enables faster or data-driven decisions are significant. AI also enhances user experience for both staff and customers with timely support, proactive problem detection and seamless management. Proven examples illustrate practical outcomes. Managing AI agents requires ensuring reliability, ethics and alignment with goals. Governance frameworks, monitoring, updates and risk mitigation are decisive. Human oversight remains a key point, as AI complements rather than replaces expertise. A dedicated section stresses critical thinking in order to provide a characterization of this type of solution. Best practices integrate human judgment with AI recommendations for balanced, ethical results. The paper also addresses challenges such as security, ethics and resistance to change, while considering future adoption trends. By combining role analysis, benefits, governance and critical thinking, it offers a comprehensive view of responsible AI integration in organizations.

**Keywords:** artificial intelligence, AI agent, virtual resources, critical thinking, management, orchestration.

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## Introduction

Artificial Intelligence (AI) agents are software programs that execute tasks autonomously or semi-autonomously, simulating human reasoning, decision-making and learning (Figure 1).

AI agents are capable of environment observation, data analysis, goal-oriented behavior, and experience-based adaptation. IT organizations adopted AI agents as chatbots, virtual assistants, monitoring tools, predictive maintenance systems and decision-support systems. Their aptitude to function with minimal intervention makes them highly relevant where efficiency, speed and accuracy are critical.

Within digitalization, AI agents are not just automation tools but drivers of transformation. They process large datasets, match patterns, anticipate issues and deliver results faster than human methods. For instance, AI monitoring agents detect anomalies in real time, while chatbots handle routine requests instantly, allowing people to focus on complex tasks. Current adoption expands into predictive analytics, cybersecurity, resource optimization and personalized interactions (Figure 1). Hybrid approaches increasingly combine human and AI strengths, reflecting a cultural and strategic shift rather than a purely technical upgrade [1].

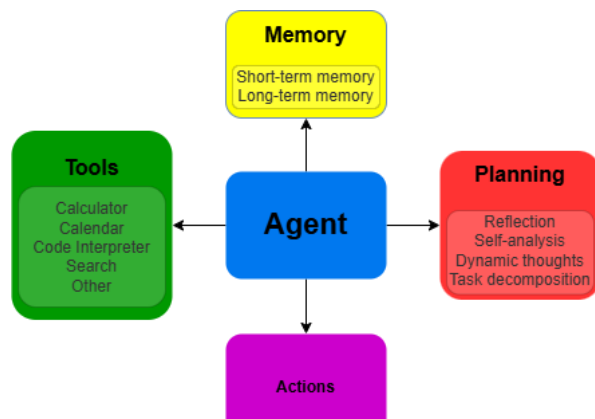


**Figure 1:** Agent architecture

Source: Author's own contribution

Effective adoption requires investment in technology, infrastructure, training and regular updates. Beyond funding, organizations must revise operations, roles and hierarchies to integrate AI, while aligning initiatives with strategic objectives. Without careful planning, risks include inefficiency, over-reliance and disruptions. Governance frameworks, ethical standards and risk management are mandatory for responsible, transparent deployment [2].

In this context, this paper explores AI agents' role in organizations, highlighting their impact on efficiency, decision-making and service quality. It outlines benefits such as productivity, cost reduction and better user experiences, while emphasizing management strategies, governance, oversight and ethics. A dedicated section addresses critical thinking, requesting rigorous evaluation of AI role, bias detection and balanced use of human judgment. It emphasizes questioning ruling assumptions, scrutinizing algorithmic outputs, and fostering reflective practices so that decision-making remains transparent, accountable, and resilient in dynamic organizational contexts.

By blending analysis of roles, benefits, strategies and critical thinking, the paper presents a comprehensive view of AI agents in modern organizational environments. It stresses the need for thoughtful investment, adaptation and responsible practices, offering guidance for organizations seeking to leverage AI in digital transformation and long-term success.

## Literature review

### *Artificial Intelligence (AI) agents in organisations*

The adoption of Artificial Intelligence (AI) agents in organizations has been the focus of research in recent years, reflecting the broader trend of digital transformation in enterprises. Scholars have highlighted that these agents are not merely tools for automation, but strategic enablers that can enhance organizational performance, decision-making and innovation [3].

Several studies highlighted the diverse roles AI agents play within organizations. For instance, chatbots and virtual assistants are frequently used in IT service management to process routine help requests, allowing human employees to concentrate on more complicated problems [4]. Network and system monitoring agents are another

prominent example, providing real-time detection of issues, predictive maintenance and automated actions to potential system failures [5]. Furthermore, it has been demonstrated that AI decision-support systems help managers with capacity management, strategy planning, and resource allocation, allowing for more precise and data-driven judgments [6]. These studies collectively suggest that AI agents can significantly enhance operational efficiency and reliability in business environments (Figure 2).

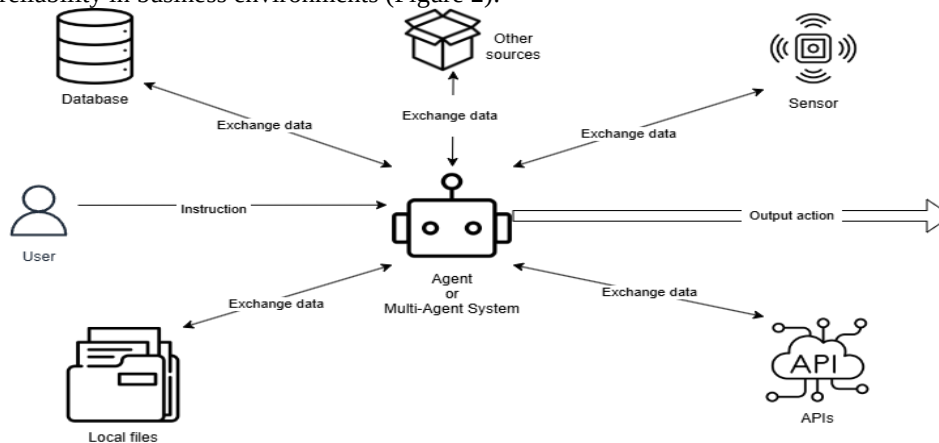


**Figure 2:** AI agent-based application architecture  
Source: Author's own contribution

The literature also emphasizes the benefits of AI agent integration. Researchers point to productivity gains, cost reduction and improved service quality as primary advantages [7]. AI agents can process large volumes of data at speeds impossible for humans, allowing organizations to detect patterns, forecast trends and respond to issues proactively. For example, predictive analytics agents can anticipate system overloads or security breaches, enabling preventative action rather than reactive fixes [8]. Moreover, AI-driven automation contributes to better customer and employee experiences, as repetitive and time-consuming tasks are handled efficiently, reducing delays and errors.

The literature does, however, also point up difficulties in implementing AI bots. Themes that come up frequently include governance, ethics, and human oversight. If AI systems are not well supervised, they may generate biased or inaccurate results, which could pose operational and reputational issues [9]. Studies recommend the implementation of AI management frameworks that include policies for accountability, transparency and risk mitigation [10]. Furthermore, organizational readiness and strategic alignment are critical. Effective adoption often requires investment in infrastructure, employee training and process redesign, which can be a significant barrier for many IT organizations.

It is becoming more widely acknowledged that critical thinking is a valuable addition to the employment of AI agents. Academics contend that businesses should avoid becoming overly dependent on automation and thoroughly assess AI results [11]. This involves developing human-AI collaboration models, where AI provides insights and recommendations while humans retain final decision-making authority. Literature on decision support and human-in-the-loop AI suggests that such hybrid approaches lead to better outcomes, combining the efficiency and analytical power of AI with human judgment, creativity and ethical reasoning [12][13].

### ***Critical thinking in AI agent use***

Adoption of AI agents in contemporary businesses depends heavily on critical thinking since it guarantees that these technologies are not only deployed successfully but also in line with organizational objectives, moral principles, and pragmatic realities. While AI agents can provide significant value through automation, decision support and data analysis, the human ability to critically assess their purpose, design and output remains irreplaceable. Organizations that adopt AI without applying structured critical thinking often risk overestimating capabilities, underestimating limitations, or misaligning AI-driven processes with broader strategic objectives [14].

One of the first aspects critical thinking highlights is the need to clearly define the role of an AI agent before its integration. Decision-makers must ask whether the agent is meant to augment human decision-making, fully automate repetitive processes, or provide predictive insights. Without this clarity, organizations may deploy AI tools in ways that generate confusion, inefficiency, or resistance from employees. Critical thinking methods emphasize aligning the AI's purpose with measurable organizational outcomes rather than adopting technology for its novelty [15].

Another factor that requires critical analysis is the data on which AI agents operate. Since AI systems are only as reliable as their data sources, critical thinkers in organizations must question data quality, representativeness and potential bias. For example, biased training data can produce discriminatory outputs, while incomplete data sets may lead to misleading conclusions. Evaluating data integrity and ensuring diverse, accurate and relevant information reduces risks and increases trust in AI outcomes.

Interpretability is also a key concern. Many advanced AI models function as “black boxes” making their reasoning processes opaque to end users. Critical thinking requires questioning whether the lack of transparency is acceptable in the given context, especially when the agent’s output influences high-stakes areas such as hiring, finance, or healthcare. Organizations must evaluate whether explainable AI methods or additional interpretive tools should be integrated to allow humans to validate results.

Accountability forms another pillar of critical evaluation. When AI agents are adopted, critical thinking compels organizations to determine who is responsible for outcomes. If an AI tool provides flawed recommendations leading to losses or errors, accountability cannot be deflected onto the technology alone. Establishing governance frameworks ensures that humans retain oversight and remain answerable for final decisions.

Critical thinking also shapes how organizations evaluate the performance of AI agents after deployment. Beyond accuracy, organizations must consider fairness, adaptability and the agent’s impact on human workflows. Questions such as whether the tool empowers employees, reduces workload, or introduces new risks should be part of evaluation metrics. Additionally, organizations should assess how the agent adapts to evolving contexts, whether it maintains consistency under changing conditions and how effectively it integrates with existing systems, ensuring its contributions remain sustainable, transparent and aligned with long-term organizational values and objectives[15].

For instance, incorporating AI agents into an Agile IT organizational workflow necessitates critical thinking to make sure technology supports iterative processes rather than interferes with them. Organizations must evaluate whether AI fosters flexibility, teamwork, and continual improvement, which are values of agile, or if it leads to rigidity. Agile philosophy, grounded in short iterations, continuous feedback, and close collaboration within teams, aligns naturally with AI adoption processes, as it enables rapid adjustment of solutions according to performance, emerging needs, and identified risks. In this sense, AI agents can enhance backlog prioritization, automated testing, or performance metrics analysis, accelerating delivery cycles without compromising transparency and accountability principles. Nevertheless, critical thinking remains decisive in assessing AI-generated outputs, to prevent rigidity in Agile workflows and ensure alignment with team objectives and organizational values. By questioning assumptions and validating outputs, organizations can integrate AI into management cycles responsibly and effectively [11].

Recent studies emphasize that the success of human–AI collaboration depends on designing hybrid work models in which algorithms provide analytical support while humans retain decision-making authority and critical reflection capacity [1]. Successful adoption of AI agents ultimately depends on critical thinking used during the design, implementation, and assessment phases rather than just technological capability. Modern enterprises can make sure AI becomes a tool of empowerment rather than an untested source of risk by challenging presumptions, evaluating the facts, and foreseeing outcomes.

Overall, the reviewed literature indicates that AI agents have transformative potential for modern organizations, but their benefits are maximized only when accompanied by thoughtful management, ethical oversight and critical evaluation. Researchers agree that AI adoption is not purely a technological challenge. It is a strategic and organizational endeavor requiring alignment with business objectives, process adaptation and investment in skills and infrastructure.

This study builds on these insights to examine how AI agents can be effectively deployed in IT organizations, emphasizing their roles, benefits, management practices and the importance of critical thinking in ensuring responsible and effective use while addressing ethical considerations, scalability challenges, integration strategies and long-term organizational impacts across diverse contexts and rapidly evolving technological landscapes.

## Methodology

Following the review of the literature, synergies were identified between organizational needs and the benefits provided by this technology. The research confirm the relevance of exploiting management optimization opportunities to achieve efficient, digital, and sustainable organizations. At the same time, a rigorous understanding of both the benefits and risks associated with implementing such solutions is necessary.

This paper used the narrative bibliographic research method, based on the identification and analysis of relevant sources available online. The Google search engine was used to identify the materials, and the following inclusion criteria were applied:

- C1 – Timeliness of publications: only materials published in 2025 were included, in order to capture the most recent trends and data related to AI agents.

- C2 – Thematic relevance and keywords: the selection was made based on titles and content containing terms such as “AI agents”, “AI agent survey”, “AI agent statistics”, “AI agents 2025”.

- C3 – Authority and notoriety of sources: only materials from internationally recognized organizations or companies were accepted

- C4 – Relevance of content for the IT organizational context: only sources that directly analyze the role, benefits and challenges of AI agents from the perspective of organizations and the business environment were selected.

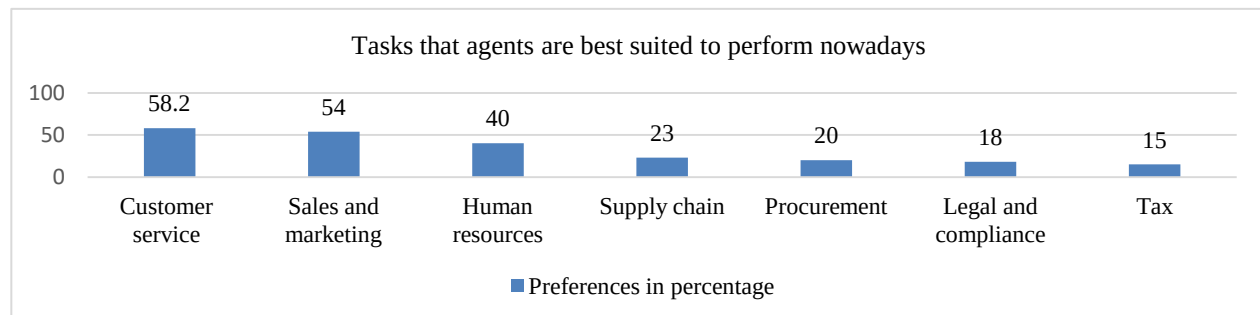
Following a first screening carried out according to the aforementioned criteria (currentness, thematic relevance, source notoriety and content applicable to the IT organizational context), four major sources were retained, published by LangChain [16], PwC [17], Pragmatic Coders [18] and IBM [19]. These were considered the most relevant and representative for underpinning the analysis on AI agents in IT organizations.

Based on empirical observations and experiences, as well as on the analysis of feedback obtained from HR staff within affiliated institutions, an evaluation was undertaken regarding the role, benefits, and management of AI agents in IT organizations. This evaluation approached the subject from multiple perspectives: the technical and definitional perspective [16], the perspective of market and business adoption [17][18], the perspective of emerging trends and enthusiasm [16][18], and the critical and realistic perspective [19].

## Results and further discussions

This section synthesizes recent survey results and industry analyses on AI agents to provide a concise assessment of adoption, perceived benefits, key barriers and suggested next steps for organizations. Multiple large-scale surveys and curated statistics indicate that AI agents are moving from experimental proofs-of-concept into production in many organizations, but progress is uneven and risk-aware. Approximately half of surveyed practitioners report agents in production today and a substantially larger share report active plans to implement agents in the near term; mid-sized companies appear particularly aggressive in production rollouts [16].

Across sectors, the most frequently reported use cases are information retrieval and summarization, personal productivity assistance and customer service automation (Figure 3). These use cases reflect agents’ immediate strengths in routinized knowledge work and triage. Efficiency and productivity gains are repeatedly emphasized in industry reports and case studies: multiple consultancy and index reports cite double-digit improvements in specific workflows when agentic automation is applied thoughtfully. These reported gains explain the strong budgetary commitments many organizations are making for agent-driven projects, reflecting their confidence in the



technology’s potential and anticipated long-term benefits [20].

**Figure 3:** Tasks that agents are best suited to perform nowadays

Source: [17]

Early adoption of pilot or open-source solutions is recommended to reduce employee reluctance. It is useful for them to experience the advantages of this disruptive technology to understand how to collaborate in order to facilitate the activity. Employees may end up benefiting from a lighter schedule or focusing on complex tasks that will help their personal development. Thus, managers of organizations should identify those activities where human resources can collaborate with virtual resources to increase the productivity of the organization. Therefore, pilot projects can highlight new aspects, which can contribute to redesigning the company's strategy.

Surveys and curated statistics also converge on the dominant barriers slowing broader, safer adoption. Performance quality, the need for consistent, reliable responses and low hallucination rates, emerges as the foremost technical concern, often outranking direct cost concerns for smaller companies. Safety and data sensitivity are particularly acute for larger enterprises and regulated industries (Figure 4). Consequently many teams deliberately restrict agent permissions to read-only actions and emphasize tracing and observability as primary control mechanisms. Skill and time constraints, limited in-house knowledge and the resource intensity of development, testing and fine-tuning, are frequently cited as secondary but meaningful obstacles [16].

Security, ethics, resistance to change and implementation cost form a cluster of organizational challenges that span technical, legal and human dimensions. Security concerns include adversarial jailbreaks, adversarial inputs that propagate harmful behaviors across agent networks and risks from improper data access. Ethical concerns center on transparency, explainability and potential bias in agent outputs. Resistance to change manifests as skepticism among staff and uncertainty from leadership about governance and accountability, while implementation cost covers both initial development and ongoing monitoring and remediation. Empirical and simulated studies cited in recent indices show that even safety-optimized agents can fail critical scenarios at nontrivial rates, underscoring the need for layered defenses [21]. Even under these conditions, adapting to solutions of this type is beneficial to fully understand all the features of this new way of working.

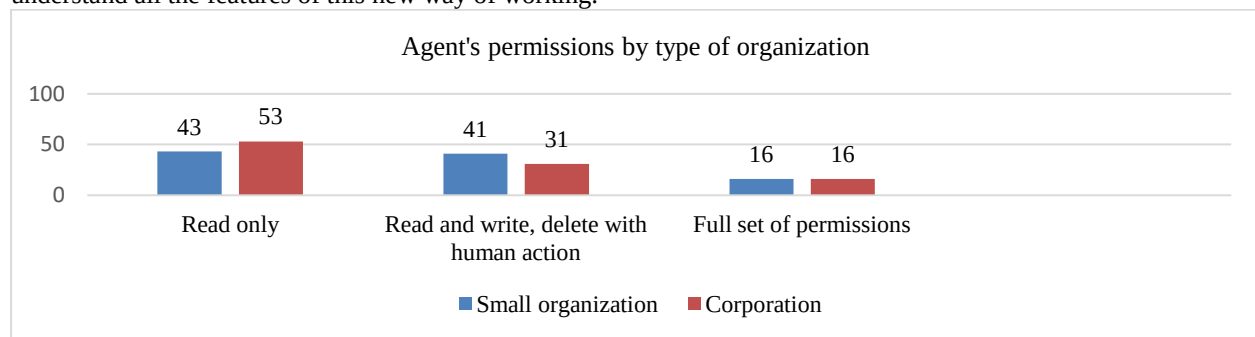


**Figure 4:** Agent's permissions by type of organization

Source: [16]

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Emerging trends that organizations should track include increased interest in multi-agent orchestration and more autonomous capabilities, accelerated adoption of open-source agent frameworks and evolving AI governance mechanisms. Analysts predict heterogeneous timelines for agent maturity across domains: some gen-AI-enabled assistant capabilities may reach mainstream productivity within a few years, while fully autonomous agentic systems may require longer maturation. There is also a clear movement toward combining richer observability and finer-grained permissioning with human-in-the-loop workflows to balance autonomy and control [22].

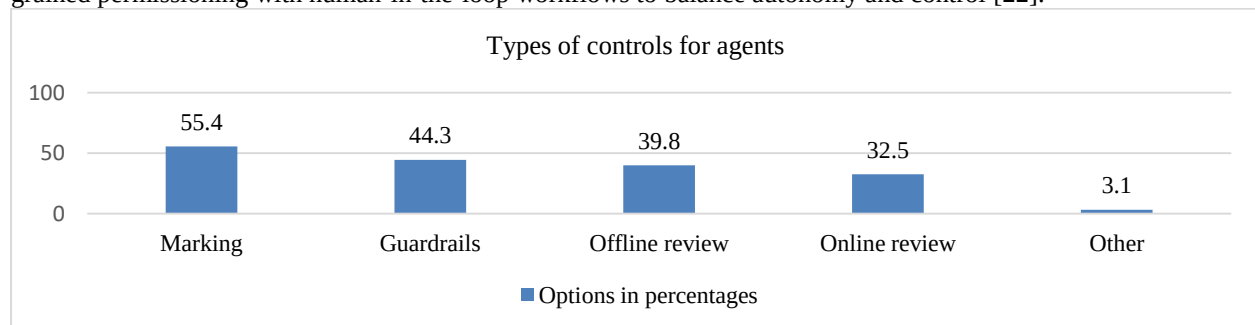


**Figure 5:** Types of controls for agents  
Source: [16]

Recommendations for organizations adopting AI agents fall into three pragmatic categories: governance, engineering and people. Governance establishes explicit policies for permissions, data handling, audit trails and ethical review. It requires traceability and human checkpoints for high-risk actions, ensuring accountability and preventing misuse. Strong governance frameworks also promote transparency, stakeholder trust, regulatory compliance, and continuous oversight, adapting controls as AI systems evolve. Engineering invests in offline and online evaluation suites, observability and tracing tools, controlled sandboxes for adversarial testing and modular architectures that allow rolling back or constraining agent capabilities. These practices not only safeguard reliability and resilience but also create transparency, enable systematic troubleshooting, foster accountability, and ensure compliance with ethical and regulatory standards across deployment environments (Figure 5). People allocate budget to upskilling, create cross-functional teams that include domain experts for evaluation and design change-management programs that surface benefits and address workforce concerns. Case studies suggest organizations that pair pilots with robust controls and learning programs capture value faster and with fewer adverse events [23].

A particularly important aspect in the management of this revolutionary method of carrying out the activity is the design of the management scheme [24][25]. There are implementation options with a single agent dedicated to an activity or with agent systems that can serve a need through collaboration, competition, hierarchy, etc. Thus, an optimized process map is needed to be able to design the way to orchestrate the fleet of agents to benefit from an efficient flow. This approach introduces innovative management practices such as distributed decision-making, adaptive task allocation and self-organizing workflows. By leveraging orchestration, organizations can enhance scalability, resilience and flexibility while reducing reliance on centralized control. Such methods represent a forward-looking paradigm for AI management, aligning technological innovation with the growing complexity of digitalized IT environments.

Future research should prioritize standardized benchmarks for agent behavior and safety in multi-step and adversarial tasks. Efforts should also focus on explainability for decision-making chains rather than single outputs. Socio-technical studies are needed to measure productivity gains against compliance and remediation costs. Investigating adversarial resilience in multi-agent networks and propagation risks is important. Governance frameworks should reconcile differing regulatory requirements across jurisdictions. Empirical research combining longitudinal organizational case studies with controlled lab evaluations will be valuable to translate pilot results into scalable, trustworthy deployments.

As a result, surveys and industry analyses portray AI agents as a fast-moving frontier with clear near-term benefits and well-documented risks. Successful public and private adopters will be those who adopt pragmatic governance and engineering controls with investment in people and evaluation and who contribute to open, reproducible research that reduces uncertainty about agents' safety, reliability and social impact. Continued, coordinated research and cross-industry knowledge sharing are essential to realize agents' potential while protecting organizational and public interests.

## Conclusion

This paper has examined the role, benefits and management of AI agents in IT organizations within the broader context of digital transformation. AI agents have been shown to perform a wide range of functions, from routine service desk automation and network monitoring to predictive analytics and decision-support systems. Their primary benefits include productivity enhancement, cost reduction, improved service quality and the capacity to generate data-driven insights that support both operational efficiency and strategic decision-making. However, realizing these benefits requires careful management through appropriate governance frameworks, ethical guidelines and strong alignment with organizational objectives.

An important theme throughout this study is the necessity of critical thinking in the adoption and use of AI agents. While these systems are capable of providing valuable insights and operational support, they are not infallible. Human oversight remains decisive to evaluate outputs critically, recognize potential biases or inaccuracies and ensure that decision-making processes remain transparent and accountable. Over-reliance on automation without critical evaluation poses risks not only to operational stability but also to the credibility and trustworthiness of organizational outcomes. Going forward, IT companies will continue to place a high premium on the responsible use of AI agents. Advanced hardware can be expensive, whereas software tools are usually available. However, in order to evaluate the impact, organizations need conduct small-scale experiments. They can guarantee long-term value and strike a balance between innovation and accountability with careful adoption, strategic investment, and supervision.

For small, mid-market organizations with high employee costs, a subscription-based experience is recommended. This way, meaningful savings can be realized, which can later be strategically invested in proprietary hardware and complementary infrastructure that will increase customer trust, enhance competitive differentiation, and may even attract new customers with specialized compliance and data handling requirements.

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