

Agentic AI

## The Non-Human Enterprise: How AI Agents Reshape Organizations

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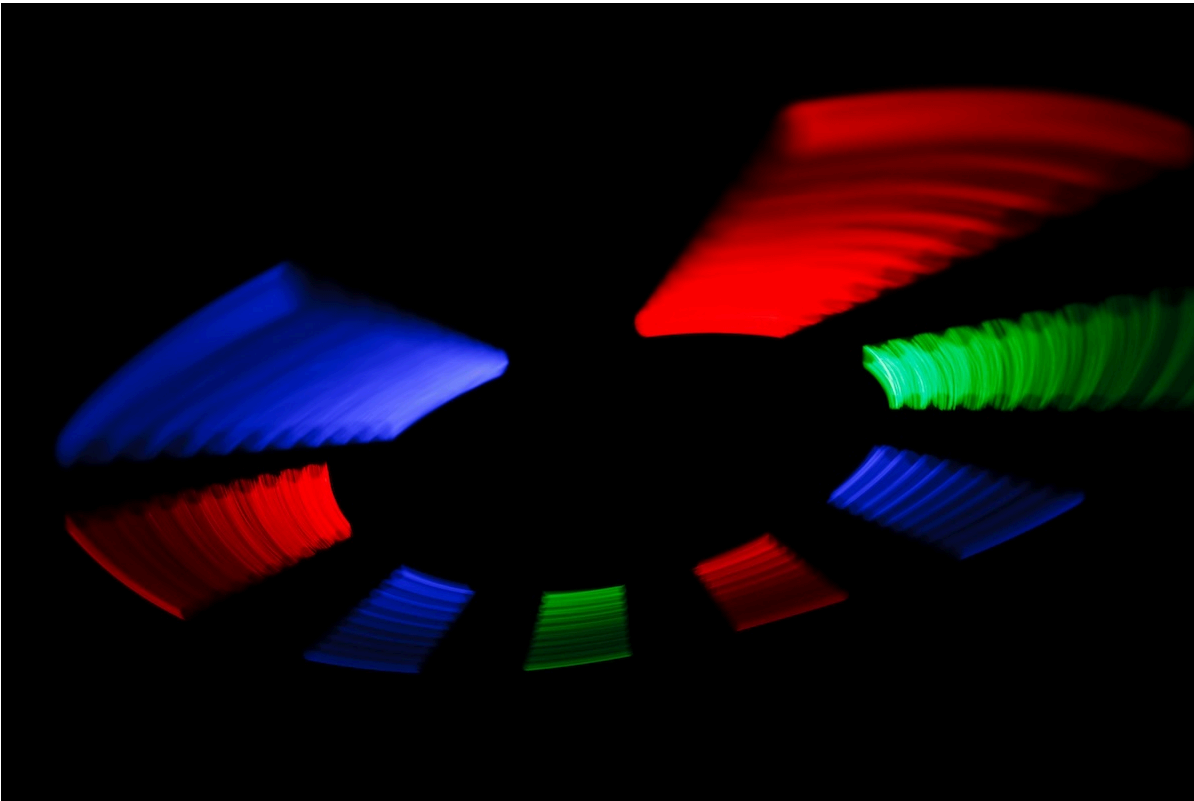


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*The rise of the agentic enterprise marks a profound transformation in the way organizations operate in an AI-driven world.*

Artificial intelligence (AI) is laying the groundwork for agentic enterprises—organizations in which autonomous AI agents handle decision-making, optimize operations, and drive growth with minimal human intervention. In 2025, most of the AI discussions are addressing agent-based AI, characterized by autonomous systems that can interact, plan, and execute complex tasks independently. While agent-based software per se is not new<sup>1</sup>, the rise of generative AI enabled a new direction: agent-based AI became a fast-evolving research topic, its emergence as a practical application gained momentum around 2024, with large language models such as AutoGPT and Google’s Gemini agents demonstrating autonomous problem-solving capabilities.

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Even though the different consequences for companies in general have been elaborated upon <sup>2</sup> and the AI agents are in the early stages of development, suffer from hallucination bias, and make flawed decisions because of their use and processing of data,<sup>3,4</sup> we believe that we need theorizing on the influence of AI technology and how its limitations can gradually be mitigated.<sup>5,6,7,8</sup> We reason that at the forefront of this transformation may be the concept of the agentic enterprise—an organizational model that leverages autonomous software agents to optimize decision making, organize operations, and enhance competitiveness without or with very limited human involvement. Intelligent agents, driven by large language models (LLMs), can operate independently or collaboratively, executing tasks with efficiency and adaptability that surpasses traditional hierarchical structures.<sup>9</sup>

Some companies already use AI agents but yet only in limited areas, e.g. Tesla in autonomous manufacturing, Amazon in autonomous delivery, Blue Prism to automate repetitive tasks. Salesforce integrates AI agents into its Agentforce platform to automate customer support, optimize marketing, and expedite business procedures, boosting overall efficiency. As businesses increasingly integrate AI-driven agents into their workflows, the agentic enterprise introduces both non-researched opportunities and complex challenges. This shift has the potential to revolutionize industries by radically improving efficiency,<sup>10</sup> personalizing customer interactions,<sup>11</sup> and fostering new waves of innovation.<sup>12</sup> However, it also raises significant concerns regarding whether and how existing companies will be affected and the influence on the economy and society as a whole.<sup>13,14</sup>

## Outline of the Agentic Enterprise

The agentic enterprise can be understood as an organizational model that leverages the capabilities of autonomous, intelligent agents—software entities that can perceive their environment, make decisions, and act upon those decisions without human intervention. An *AI agent* is an autonomous system designed to process complex problems, develop strategic plans, and execute decisions through an iterative cycle of reasoning, action, and adaptation.<sup>15</sup> This process involves four key steps:

1. **Think:** The agent analyzes available data and contextual information to formulate a problem-solving approach. This is also called “reasoning,” but it relies on a purely statistical process to identify patterns.
2. **Plan:** The agent determines a sequence of actions to achieve a defined goal.
3. **Act:** The agent executes its plan, which may involve interacting with users, retrieving data, or making system-level decisions.
4. **Reflect:** The agent evaluates the effectiveness of its actions, identifies errors, and refines its approach for future iterations. Within that reflection, the agent can also monitor its behavior in terms of accuracy, relevance, compliance, and ethical guardrails such as fairness.

This autonomous system includes a feedback loop and enables adaptive learning and dynamic problem solving, allowing AI agents to respond effectively to changing conditions. At the foundation of AI agents lie large language models, which provide the reasoning, language comprehension, and generative capabilities that drive intelligent decision making.<sup>18</sup> Agentic enterprises can be understood as full teams of different types of agents.<sup>17,18</sup> The interconnected nature of these agents allows for collaboration, creating a system where knowledge and capabilities are shared, enabling the organization to operate proactively in its environment. Depending on the point of view, agents come in various forms, each tailored to specific tasks and environments. The table below captures an overview of different agent types.

## Types of AI Agents

- **Simple reflex agents:** React to immediate situations without memory.  
Example: Traffic lights that adapt to the presence of cars, spam filters.
- **Deliberate agents:** Use memory and reasoning to improve responses.  
Example: Autonomous drones that map delivery routes by analyzing terrain and obstacles to find optimal paths.
- **Goal-based agents:** Focus on achieving specific objectives.  
Example: GPS systems optimizing routes.
- **Utility-based agents:** Aim for the best possible outcomes.  
Example: Stock trading software maximizing profits.

- **Collaborative agents:** Work alongside other agents or humans, communicate and coordinate to achieve shared goals.  
Example: Chatbot teams in customer service, complaints handling.
- **Interface agents:** Interact directly with users, often learning from their behaviors to provide personalized assistance.  
Example: Smart home assistants like Alexa, chat bots in customer support services.
- **Smart Agents:** Learn, adapt and improve over time.  
Example: E-commerce recommendation systems.
- **Hierarchical agents:** Operate in layers for complex tasks.  
Example: Factory automation systems coordinating machines and production.
- **Guardian agents:** Ensure that the agents in the multi-agent system are working towards the given goals within the boundaries.  
Example: guarding the collaborative agents of an accounting department to work according the given rules and procedures.

The concept of the agentic enterprise stems from the broader theoretical framework of *multi-agent systems*,<sup>19,20</sup> which are used in fields such as computer science, economics, and organizational theory to model and simulate complex systems of interacting agents.<sup>21</sup> Multi-agent systems theory is integral to the development of agentic enterprise models, where agents must collaborate to optimize organizational performance and solve problems that are too complex for traditional centralized systems to address. The agentic enterprise shares similarities with complex adaptive systems, which are systems composed of many interacting components that can evolve over time in response to internal and external pressures.<sup>22,23</sup> This helps explain how agentic enterprises can adapt to rapidly changing market conditions, technological advancements, and customer demands through the interactions of autonomous agents.

## Competitive Advantages of the Agentic Enterprise

While many organizations have integrated AI agents to streamline operations, enhance decision making, and automate repetitive tasks, humans still play a critical role. As such, despite the rapid advancements in AI and automation, the vision of a fully autonomous

company is hard to realize in many situations. We are, however, beginning to see this happening, and some organizations are beginning to push the boundaries of automation and agent-based systems. In our research, we found five main motivations for companies to use agents in enterprises, based on the advantages these agents provide:

1. One of the most profound advantages of AI agents lies in their unmatched efficiency. AI-driven systems can process data, make decisions, and execute complex tasks at exponentially greater speeds than human workers. This ability to operate 24/7 without the constraints of fatigue, scheduling limitations, or cognitive overload ensures continuous operations, enhancing business agility.
2. Beyond efficiency, cost reduction serves as another significant driver for the adoption of AI-based enterprise solutions. By eliminating labor costs associated with salaries, benefits, recruitment, and training, organizations can reallocate resources toward innovation and market expansion.
3. A key advantage of agentic enterprises is their capacity for handling both repetitive and with the support of AI agent teams also complex tasks. AI-driven systems excel at executing high-volume, mundane processes that would otherwise be labor intensive and prone to human error.
4. An additional transformative aspect of AI agent integration is hyper-personalization and individualization in customer interactions. AI agents dynamically analyze user behavior, preferences, and contextual data in real time, allowing for customized experiences that evolve continuously. This real-time adaptability ensures that services, pricing models, and recommendations are aligned with the specific needs of each consumer, enhancing engagement and customer satisfaction. AI agents enable the exploitation of business models like long tail, mass customization, or experience selling in more industries than ever before.<sup>24</sup>
5. Lastly, AI-driven automation significantly enhances safety and risk mitigation, particularly in hazardous industries such as mining and nuclear energy. The deployment of fully automated systems in these environments eliminates the need for human workers to be exposed to dangerous conditions, reducing workplace injuries and ensuring operational continuity in extreme settings.

# Where the Agentic Enterprise Excels

A fully automated agent-based company without humans might be desirable in certain contexts for several reasons, particularly when efficiency, consistency, scalability, and cost reduction are key priorities. Below are examples where we see that the rise of fully automated AI companies is likely to redefine the competitive landscape, leaving industries driven by repetition and data analysis as the first battleground.

- 1. E-commerce platforms:** AI-based enterprises hold the potential to far outperform traditional human-driven organizations due to their ability to fully automate critical functions such as inventory management, fulfillment, customer service, and supply chain operations. This level of automation enables AI-driven e-commerce platforms to achieve the operational efficiency, scalability, and speed that human organizations simply cannot match.
- 2. Financial trading:** AI-based enterprises, particularly those utilizing HFT platforms with automated decision making, have a significant edge over traditional human-run trading organizations. These AI-driven platforms leverage powerful algorithms and ML models to execute an extremely large amount of trades per second, making decisions based on real-time market data. This level of speed, precision, and automation enables AI-based trading systems to outpace any variant involving human traders, providing substantial competitive advantages.
- 3. Manufacturing:** AI-based enterprises in the manufacturing sector, particularly those utilizing end-to-end robotic factories, are poised to dramatically outcompete traditional human-run organizations. These AI-driven factories employ sophisticated robotics and autonomous systems throughout the entire production process, from raw material handling to final product assembly. By integrating AI, robotics, and automation, these factories achieve a level of precision, efficiency, and scalability that human-run operations simply cannot match.
- 4. Logistics:** AI-based enterprises, particularly those utilizing automated warehousing and delivery networks powered by autonomous vehicles, are revolutionizing the logistics industry by providing unmatched speed, efficiency, and scalability. These AI-driven systems are reshaping how goods are stored, managed, and delivered,

enabling businesses to achieve a level of optimization and cost-effectiveness that human-run logistics operations can hardly match.

5. **R&D and Innovation:** AI-based enterprises, particularly those leveraging fully autonomous research and development (R&D) systems,<sup>25</sup> are set to revolutionize the innovation landscape. Unlike traditional innovation processes that rely on human intuition, agent-driven innovation takes a radically different path by applying brute computational power, continuous learning, and autonomous experimentation to accelerate discovery. This leads to exponential idea generation and simulated experimentation at scale that could also stimulate human creativity.<sup>26</sup>

As AI technology continues to evolve and its capabilities expand, AI-based enterprises or at least solutions will become increasingly dominant in sectors like the above, making it difficult for human-run companies to compete effectively. By embracing AI-driven automation, businesses can stay ahead of the competition and meet the growing demands of modern consumers in an increasingly digital world.

## Implications for Leaders Building Agentic Enterprises

There are a few lessons for leaders who build an enterprise, driven by agentic AI:

1. **Start with the customer experience:** Leaders of agent-based teams have to make sure that creating and capturing value remain the ultimate goals of their enterprises. When AI agent technology is developed in a rapid fashion, it is important to avoid being overly technology driven and overlook the purpose and direction where we are moving.
2. **Think in larger systems of systems:** In developing an agentic enterprise, leaders have to think in larger systems, full ecosystems and higher order-effects of actions of the agents.
3. **Shift from command and control to coordination and oversight:** Leaders must focus on coordinating the interactions between AI agents and human teams. This coordination involves ensuring alignment between autonomous agents' outputs and organizational goals.

4. Develop AI competence among leaders: Understanding the capabilities, limitations, and operational mechanics of AI agents is essential. Leaders need foundational AI knowledge to interpret system outputs, make informed decisions, and communicate effectively with technical teams.
5. Redefine key performance indicators and performance standards: With AI agents performing tasks autonomously, traditional key performance indicators may no longer apply. Leaders must establish new metrics to evaluate the effectiveness of AI systems, including accuracy, adaptability, and impact on organizational goals.
6. Prepare for systemic risks and failures: AI agents can encounter unexpected failures and security vulnerabilities. Leaders must develop new risk management frameworks, including regular system audits, fail-safe mechanisms, and response plans for potential disruptions. Human override interventions will be needed, meaning that organizations need to develop fallback mechanisms allowing humans to intervene in emergencies.
7. Ethical control and governance: Autonomous systems may inadvertently produce biased or potentially harmful outcomes. Leaders must proactively establish ethical guidelines; monitor AI agents' behavior; and address issues of accountability, fairness, and transparency. Beyond ensuring that regulations are followed, leaders need to create decision-making frameworks aligned with moral and societal values. Regulated industries inherently offer clearer context through their documentation, which helps AI agents understand the operational landscape, identify patterns, and respond appropriately to various scenarios. As a result, there are reasons to believe agency-based enterprises in highly regulated sectors may find their AI agents performing better due to the wealth of contextual information, ultimately leading to improved decision-making, compliance adherence, and overall productivity.

The rise of the agentic enterprise marks a profound transformation in the way organizations operate in an AI-driven world. But the widespread automation of tasks and decision making will also inevitably disrupt traditional labor markets, raise ethical considerations. As industries navigate this new era of AI-driven automation, the implications for business models, workforce structures, and competitive strategies will be profound. The agentic enterprise is not just a technological shift but a paradigm shift—one that calls for a reevaluation of how businesses, industries, and societies function in an increasingly automated future.

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