UiPath



Agents think.
Robots do.
People lead.

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Introduction

In the modern digital landscape, enterprises have become increasingly complex with reliance on an extensive assortment of applications and systems. It's estimated that a typical enterprise utilizes more than 175 different applications and systems to execute their processes, which presents significant challenges in coordination, data management, and operational efficiency.

As these dynamic challenges continue to evolve, so have the solutions designed to manage and address them. One field where this evolution is particularly visible is automation. Over the years, businesses have increasingly embraced automation to streamline operations, reduce costs, and improve customer satisfaction.

However, early automation methods weren't always as efficient in operating on unstructured data and managing complex tasks that need intelligent decisionmaking. This has prompted the quest for better, more robust, and context-aware automation solutions which, in turn, has resulted in the advent of agentic automation, a revolutionary leap in the world of enterprise automation.

Agentic automation represents a new era in which agents imbued with artificial intelligence (AI) form the core of automated operations. These AI agents exceed mere tools; they are collaborators involved in making decisions, actively learning, and working alongside people and robots to achieve enterprise objectives.

This white paper goes beyond introducing agentic automation. It provides a comprehensive roadmap towards its successful adoption, integration, and scaling, exploring its weighty benefits and significant transformative potential for enterprises. The paper is a resounding call to action for businesses to seize upon agentic automation, marking a new evolution of digital transformation.



Core definitions



AGENTIC AI

Agentic AI refers to artificial intelligence agents bestowed with cognitive abilities such as learning, problem-solving, and decision-making, which continually adapt and evolve to enhance their performance in automating tasks and executing complex operations.



AGENTIC AUTOMATION

Agentic automation is an advanced strategy in intelligent enterprise automation that integrates traditional RPA, Artificial Intelligence, and human decision-making capabilities, fostering an ecosystem where people, robots, and AI agents work synergistically to optimize operational processes, driving efficiency and productivity.



AGENTIC ORCHESTRATION

Agentic orchestration serves as the guiding value proposition of agentic automation, effectively managing and assigning tasks an responsibilities among people, robots, and AI agents depending on their capabilities, acting as a conductor in an automated symphony, ensuring operations are smooth, efficient, and aligned with the business's strategic outcomes.

Why agentic automation?

The successful narrative of enterprise automation to date has been largely shaped by robotic process automation (RPA)—a technology that greatly streamlines structured and repetitive tasks. While RPA has brought considerable progress, modern businesses are continuously evolving and facing more complex and unstructured problems that require more sophisticated approaches.

For instance, traditional RPA needs more support when faced with contextual decision-making, adaptation to real-time changes, and handling unstructured data. How does a business automate tasks that involve customer interactions with various potential outcomes, requiring decisions made based on context rather than fixed rules? Also, how can organizations automate operations when the environment is perpetually changing, and real-time adjustments are necessary?

These are among the challenges the agentic automation paradigm addresses. By integrating AI agents—autonomous, intelligent entities—agentic automation supplements traditional automation capabilities. It enables businesses to automate complex, unstructured workflows and infuses cognitive capabilities into the automation processes. In essence, AI agents go beyond executing pre-programmed instructions; they bring decision-making prowess to the automation mix.



The agentic approach

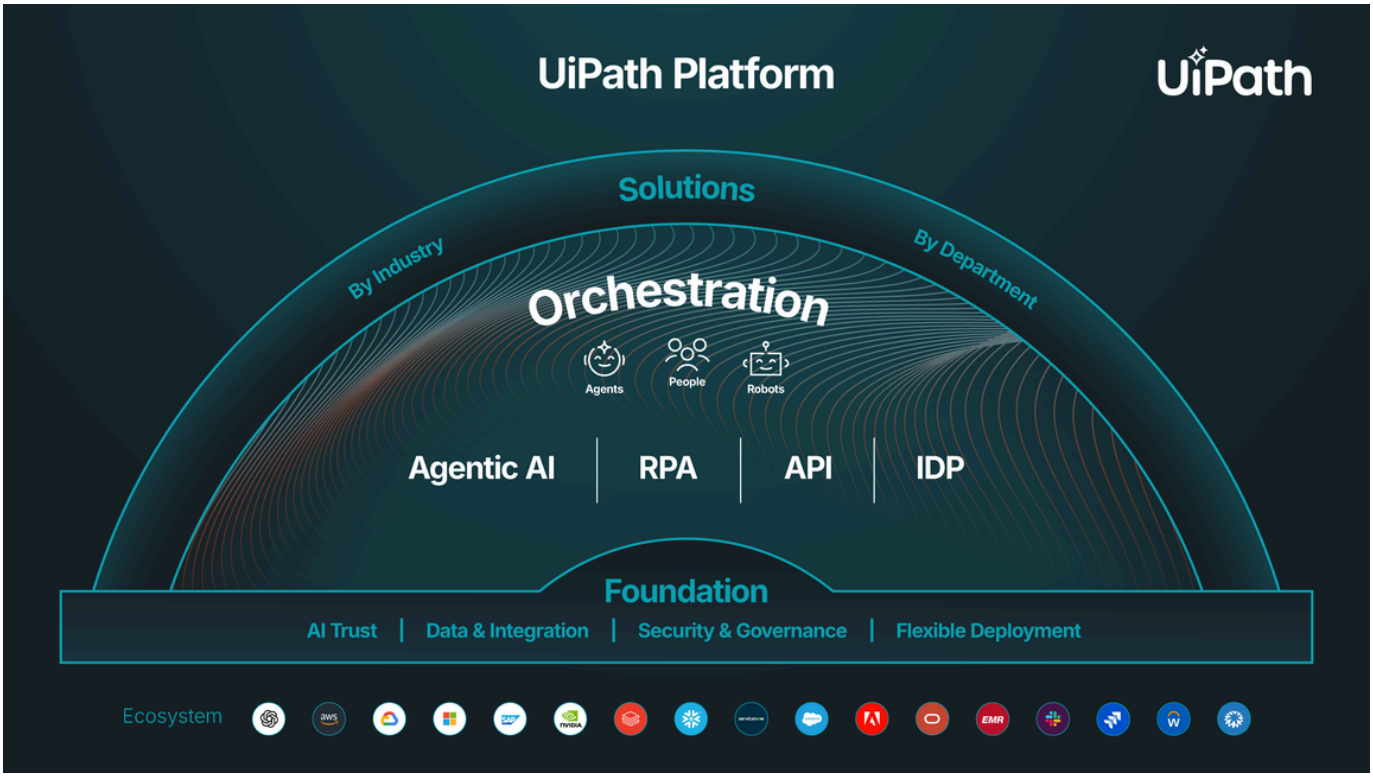
Agents think.
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The agentic approach to automation builds on the foundation of RPA and taking it a step further by embedding advanced Artificial Intelligence (AI) capabilities into the equation. Central to this approach are the AI agents which come with cognitive abilities such as learning, reasoning, perceiving, hypothesizing, and problem-solving in a way that directly supports advancements in machine learning and data analytics.

In this approach, complex tasks which require decision-making and learning capabilities are assigned to AI agents while robots play a key role in executing rule-based tasks and people are elevated to being supervisors, decision makers, organizational leaders, and enabled to make faster and more informed decisions.

Together, these entities create an interdependent network that delivers functional and operational efficiency in an organization's automation journey.

In other words, the "Agentic Approach" is a symbiotic ecosystem of people, robots, and AI agents, leveraging their respective strengths to identify opportunities, automate processes, make informed decisions, and execute tasks with consistency and accuracy.



1. ROBOTS



Robots form the first pillar of the agentic approach. They transform business processes by executing mundane and repetitive tasks, thereby increasing efficiency, and eliminating potential human error. Their capabilities are focused on rule-based tasks and here's where AI agents can add complimentary value.

2. AI AGENTS



In the agentic approach, AI agents are emboldened with cognitive capabilities to grasp and interpret unstructured data. They harness machine learning and advanced data analytics to process and make informed decisions. Their constant learning and adaptability define the way the agentic approach unfolds. They transform raw, unstructured data into structured information, analyze it, and make decisions or recommendations based on learned patterns.

However, AI agents aren't standalone entities. They operate within a network, handing off tasks to robots, or escalating concerns and complex problems to human team members when they go beyond established parameters.

3. PEOPLE



Despite the automation prowess of robots and AI agents, people remain integral to the agentic approach. People bring strategic oversight, human intuition, and critical thinking to the table. They handle tasks that need empathy, emotion, or contextual understanding – areas where AI agents are not yet sophisticated enough. People also provide an essential layer of governance, supervising AI agent's decisions to ensure they align with business goals, ethical standards, and compliance regulations. And when AI agents encounter complex, non-programmed scenarios, people step in, weaving their expertise to solve the problem.

The business value

OPERATIONAL EFFICIENCY AND PRODUCTIVITY

Agentic automation enhances the organizational efficiency by effectively distributing tasks among people, robots, and AI agents, with major tasks being handled by the most appropriate entity, accelerating turnaround times and improving productivity.

SCALABILITY AND ADAPTABILITY

With its modular design and continuous learning abilities, agentic automation provides a highly adaptable and scalable solution. It caters to dynamic workloads, emerging trends, and changing business needs, empowering organizations to adapt and scale quickly.

ENHANCED STAKEHOLDER EXPERIENCE

Agentic automation plays a crucial role in enhancing both decision-making capabilities and customer experience. Intelligent data processing aids in making informed decisions, while faster response times, improved accuracy, and personalization improves the customer service, thereby increasing their satisfaction levels.

TRUSTED ENTERPRISE AI

With always-on agents that have access to the abundance of tools and applications and also continuously integrate with new tools, models, and applications the challenges are multi-level. Agentic automation empowers businesses to respond to changes quickly with trusted and governed AI, maintaining and expanding their competitiveness.

ACCURACY, CONSISTENCY, AND COST-EFFICIENCY

The implementation of agentic automation can minimize potential human error, promoting consistency, cost savings and higher precision in both repetitive and complex tasks. This helps in reducing expenditure related to errors, rework and operational inefficiencies.

EMPOWERED WORKFORCE AND COLLABORATIVE DECISION-MAKING

Agentic automation liberates the human workforce from routine tasks, fostering focus on strategic, creative and customer-centric tasks. This workforce empowerment is coupled with a collaborative decision-making model where people, robots, and agents work synergistically for optimal outcomes.

GOVERNANCE AND TRUST

UiPath's agentic approach operates within a defined framework promoting autonomous yet supervised operations. Irrespective of the degree of autonomy, all operations are inspected by a robust governance mechanism, ensuring trust and credibility in the system.

In conclusion, UiPath's agentic automation provides robust business value by offering a powerful blend of efficiency, consistency, scalability, empowerment, enhanced experiences, and governance, effectively revolutionizing automation and AI implementation in businesses.

The backbone: Orchestration

Constructing robust agentic solutions requires a thorough understanding of key foundational components and the interplay among them. Serving as the nerve center, agentic orchestration meticulously coordinates workflows involving people, robots, and agents and harmonizes all elements within an automation ecosystem.

It functions as the conductor in the grand symphony of business processes, orchestrating the roles of robots, agents and people in end-to-end implementations.

It avoids bottlenecks, ensures tasks are executed with maximum efficiency, and fosters a highly responsive automation environment.

It ensures that people, robots and AI agents collaborate seamlessly.

Discovering and capitalizing on each entity's strengths, it assigns rule-based, repetitive tasks to robots for precise execution. Meanwhile, complex, intricate tasks requiring decision-making and adaptive learning are delegated to AI agents, leaving the high-level, strategic, and critical functions to human intellect and expertise.



More than just enabling efficiency in process execution, agentic orchestration seeks to optimize these processes driven by business goals and outcomes. It aligns business operations with strategic intents, amplifying the quality of output and ensuring consistent goaldirected results. This is achieved through end-to-end transparency and centralized control providing businesses with unparalleled agility, adaptability, and scalability.

In essence, the value proposition of orchestration lies in delivering peak operational performance by enabling seamless collaboration and efficient task distribution among people, robots, and agents in business processes. This capability to align and sync different elements with business objectives, makes agentic orchestration indispensable to the success of the agentic automation journey. It is indeed the nucleus that governs, guides, and facilitates the transformative power of agentic automation in enterprises, ushering in a new era of operational effectiveness and business excellence.

The foundation: Secure integration and governance

Unquestionably, the strength and success of agentic automation hinge on the secure operation of AI agents. As they handle massive amounts of sensitive enterprise data, it is necessary to have dependable safeguards to secure information integrity, privacy, and confidentiality. Secure integration, therefore, is paramount to risk mitigation and compliance adherence.

This aspect establishes stringent data access controls, ensures secure data transmission, and implements rigorous user authentication procedures. It also includes regular vulnerability assessments and threat detection mechanisms to anticipate and prevent security breaches. By doing so, secure integration guarantees that AI agents operate within a highly secure environment, allowing organizations to gain from agentic automation's unique benefits without compromising their information security policies.

These components are integral to constructing agentic solutions that seamlessly blend with the existing technological ecosystem, thereby fostering an environment conducive to agentic automation. By leveraging these elements, organizations are wellpositioned to realize their automation objectives and significantly enhance their operational value.



An example

Let's take, for instance, a mortgage application process. Here, agentic automation could facilitate efficiency and accuracy in the following manner:

1. INITIATION
(Trigger)

The journey begins when a customer sends in a mortgage application. This application is the trigger that instigates the overarching agentic orchestration workflow. These workflows are made up of a defined set of tasks for people, robots and AI agents.

2. EXTRACTION
(Data preparation robot)

A robot is programmed to extract necessary information from the application. Leveraging advanced Optical Character Recognition (OCR) technologies and NLP, the agent converts unstructured data into a structured format. This can include applicant's personal details, financial status, credit history and the details of the property in question.

3. ANALYSIS
(Mortgage recommendation agent)

Next, a mortgage recommendation agent gathers additional data from various internal and external systems. These might include credit reporting agencies, property databases, and employment verification systems. The agent then proceeds to analyze the data using machine learning algorithms to score the creditworthiness of the applicant and the value of the property.

4. VERIFICATION
(Human validation)

While the AI agent is capable of making sophisticated calculations, it's crucial that a human employee reviews the agent's recommendation. This ensures the decision's accuracy, compliance with set standards, and allows for the leveraging of human intuition and discretion.

5. APPLICATION UPDATE
(Execution robot)

If the application is approved, robots calculate the loan amount, interest rates, and other terms, then automatically update the banking system with these details. This process eliminates manual errors and guarantees consistency and speed.

6. COMMUNICATION
(Customer communication agent)

Finally, another AI agent - the customer communication agent, drafts an acceptance or refusal letter, depending on the application's outcome. This agent understands the nuances of language, ensuring the communication is clear, respectful, and empathetic. The agent then sends this letter by email, or it prepares for sending the traditional mail.

In each of these steps, the agents seamlessly transfer tasks amongst robots, people, and themselves, resulting in a smooth, automated flow. Over time, these AI agents will learn from the outcomes of their decisions. They enhance their performance and fine-tune their algorithms, improving the accuracy of their recommendations and, therefore, incrementally reducing the need for human oversight.

In essence, agentic automation in a mortgage application process ensures accurate data analysis, speedy processing, reduced errors, and increased customer satisfaction due to the quicker response times — making it an ideal example of how agentic automation can revolutionize complex business processes.

The differentiator: Controlled agency

UiPath's agentic automation approach ops for controlled agency, offering specialized agents that come with enterprise-grade tools and capabilities. These agents are carefully orchestrated in workflows alongside deterministic robots and people. The rationale behind this concept lies in the fact that the more autonomy a system has, the less predictable its results can become - an uncertainty that can be risky and costly in enterprise processes. UiPath thus provides controllable agents that are not just autonomous but also reliable in delivering accurate, safe and trustworthy operations.

Diving deeper, differentiators of a UiPath AI and automation program come in two levels: agentic automation and platform.

Agentic Automation Differentiators:

- **Enterprise Tools:** UiPath's agents efficiently use the entire UiPath platform, leveraging best-in-class automation tools and capabilities including UI automations, Intelligent Document Processing, API connectors, and complex multi-step workflows.
- **Human-in-the-loop(HITL):** UiPath manifests the principle of HITL in its agents, easy embedding of escalation protocols and reviews into workflows and processes, ensuring a well-rounded and human-guided automation system.
- **Low-Code:** UiPath offers low-code environments for automation developers, making it easy to build and evaluate high-quality agents against the ground truth, as compared to more complex code-centric methods.
- **Vendor-Agnostic:** UiPath's agentic workflows avoid vendor lock-in, allowing for flexibility in building workflows across different applications, models (including BYO), and agent ecosystems, providing genuine freedom in system integration and choice.
- **End-to-End Orchestration:** UiPath enables the model, orchestration, and debug of end-to-end complex business processes. This includes robots, people, and agents, providing the user with a detailed understanding of the entire process graph.

UiPath Platform Differentiators:

- **Quality and Assurance:** UiPath prides itself on delivering an enterprise-grade infrastructure with specialized AI capabilities including best-in-class Intelligent Document Processing capabilities and trusted models.
- It emphasizes quality assurance through design-time evaluations against ground truths, runtime evaluations, and AI-powered test automation.
- **Management & Monitoring:** UiPath's platform offers comprehensive reporting, including real-time analytics, alerts, and historical reports. It also includes features for advanced insights (analytics), tracing, version control, and systematic reporting.
- **Governance & Trust:** UiPath ensures hybrid deployment flexibility and adherence to enterprise compliance and policy standards. Its agents leverage the same enterprise-grade platform trusted by millions for autonomous robot operations, ensuring robust governance and trust in their system.

Concluding; in the trade-off between autonomy and predictability, UiPath chooses the path that ensures enterprise comfort level. Thereby, minimizing unpredictability and maximizing trustworthiness through a controlled agency, providing organizations a robust and reliable automation ally to forge ahead in their digital transformation journeys.

The first innovations

In our continuous and dedicated stride towards revolutionizing automation, we at UiPath are working on several innovative products that will fuel the first steps in our vision of agentic automation.

Intelligent Xtraction and Processing
THE EVOLUTION OF IDP

IXP is our groundbreaking initiative designed to extract information from long, complex, unstructured documents. Built as an AI-first product, it offers a zero-shot extraction right out of the box. This innovation is based on our belief that being at the forefront of agentic automation is a matter of strong product development and intelligent engineering. Our journey tracing back to our first Studio version built around an AI library over a decade ago reinforces this belief. We're confident that this exciting new product will amplify our success and will continue to amaze and win the adulation of developers.

Agent Builder
LOW CODE AGENTS

Our innovative product, Agent Builder, is tailored to create low code agents. Similar to frameworks like Langchain, Agent Builder is seamlessly integrated with our platform and robots but with a no-code experience. We have recently launched a private preview, and the initial feedback from customers has been highly encouraging. We are eagerly looking forward to witnessing more real agents being built using Agent Builder.

Agentic Orchestration
AN UPDATED WORKFLOW

Agentic Orchestration is our pathbreaking upgrade to the BPMN workflow, featuring a deep re-platforming of our workflow engine powered by modern technology called Temporal. This new engine promotes an excellent division between the engine itself and the activities forming a workflow, allowing us to rapidly advance and scale our development teams. We plan to introduce on this foundation not just BPMN constructs but also sophisticated API workflows running as JavaScripts using a V8 engine built for Chrome.

As the agentic automation landscape evolves, our innovative product offerings will continue to emerge as differentiators, taking us closer to realizing our agentic vision. We are also undertaking an intense marketing campaign to position ourselves as an agentic company - and we count on everyone's enthusiastic participation in promoting our content! At UiPath, we are excited to step up the pace of our technical evolution backed with the energy from our Product & Engineering teams, continuously developing and refining our products to unlock the full potential of agentic automation.

The customer view

The enthusiasm from UiPath customers about the new era of agentic automation speaks volumes about the potential it has to create unique business value. UiPath customers have declared a clear need for agentic automation to further scale automation capabilities faster and maximize the value of their employees. Customers are starting to implement specific agentic automation use cases across varied domains such as customer service, sales, finance, data analytics, and specialized industry scenarios including medical summarization. This will enable them to make more informed decisions and accomplish tasks with greater consistency, flexibility, and accuracy.

Here is what UiPath customers are saying:

"Agentic automation enables us to make informed decisions and quickly adapt to business changes for rapid scaling. Its integration in call centers consolidates automations, streamlines processes, and empowers agents to use natural language."

Emily Krohne,
Enterprise Automation, WEX

"Agentic automation is certainly on our agenda for facilitating two key use cases - device processing and medical summarization. With agentic automation, we can potentially enhance our device processing capabilities. Similarly, we intend to use agentic automation to efficiently manage extensive medical records via summarization."

Satyendra Satendra Shukla,
Vice President, Payer Configuration & Intelligent Automation, CareSource

"Utilizing agentic automation, we can make better context-aware decisions and adapt swiftly to business changes. It also delivers a seamless, user-friendly customer experience. The integration of an agentic automation in call centers consolidates all automations, streamlining processes, and empowering agents to use natural language for requests."

Sharbs Shaaya,
Director,
AI Operations & Intelligent Automation, Fiserv

"We have a lot of complex processes like accounts payable, where we've only been able to automate parts of it. Those automations do well, but they don't span the process from one end to the other. Now with agentic automation and agentic orchestration, we can automate the entire process, end to end."

Chris Engel,
Automation Center of Excellence – Global Discovery Lead, Johnson Controls Inc.

"It's about strategically pairing human capacities with agentic capabilities to maximize value for our customers. Contrary to the assumption that agents will take over completely, they'll instead handle repetitive daily tasks, transforming our approach to customer service in the future."

Manuel Delgado,
Chief Operating Officer, Banco Azteca

Leveraging agentic automation in our UiPath integration is providing massive ROIs. Exploring applications in sales and customer service is proving especially promising. These automated agents carry out the heavy lifting, allowing our sales team to focus on driving revenue. Similarly, deploying AI in customer service has measurable impacts, including substantial time savings and shorter code cycles."

Akash Rana,
Senior Manager IT Digital Automation,
Regal Rexnord

The path forward: Think big, start small

The journey towards full agentic automation adoption entails due consideration of several pivotal steps:

1. THE EVOLUTION OF IDP

Start by evaluating the suitability of agentic automation for your enterprise tasks. Not all operations may benefit from AI agents; thus, an initial review is necessary.

2. IDENTIFY

Identify specific workflows where the application of agentic automation can yield substantial benefits. Unstructured workflows that require nuanced decision-making are good starting points.

3. ENGAGE

Engage with agentic automation experts for assistance on adopting and integrating these robust solutions into your enterprise.

4. DEPLOY

Implement agentic automation through a phased approach. A swift, abrupt switch lacks foresight and may pose operational challenges.

5. MONITOR & OPTIMIZE

Actively evaluate the performance of newly deployed agents, adjusting them as necessary, and always seeking out opportunities for further optimization.



It is important to remember that agentic automation is not meant to replace people, but rather to empower them. By collaboratively working with AI agents, organizations allow individuals to focus on higher-level tasks that require human ingenuity, while AI handles the intricate details of complex workflows.

Addressing industry and organizational concerns

As with any disruptive technology, concerns and questions will naturally arise. Here, we address common queries regarding agentic automation:

RPA's future?

lDue to agentic automation's aptitude for complex and unstructured tasks, one might question the future of RPA. However, RPA remains an indispensable technology for rule-based, transactional processes and an integral part of how agentic automation is evolving its capabilities by venturing into unstructured domains.

How reliable are AI agents?

Reliability over intelligence is a guiding principle in enterprise operations. The nature of agentic workflows ensures that AI agents function within established boundaries, escalating exceptions to people as necessary. This governance model promotes trust and encourages widespread adoption.

Is my data secure?

UiPath's agentic approach places high importance on data security. It does so by integrating advanced security protocols into their automation framework, providing secure encryption for data transfer and storage. With centralized control, the agentic approach allows businesses to identify potential security vulnerabilities, respond to those threats swiftly, and maintain comprehensive audit trails, ensuring compliance with industry standards and regulations.

How scalable and flexible can agentic automation programs be?

Should a business need to expand or reduce its scope, it can easily adapt using the UiPath Platform. This allows businesses to scale up or down as needed, without incurring significant downtime or expense. Scalability in UiPath's agentic approach gives businesses an edge by facilitating a faster response to changing market dynamics.

What if my systems are too siloed?

Agentic orchestration ensures seamless integration and collaboration between various systems, applications, and teams, effectively breaking down data silos. By orchestrating end-to-end processes intricately involving people, robots, and AI agents, UiPath ensures smooth workflows and improved productivity, thereby harmonizing the entire operation.

Conclusion





Agents think. Robots do. People lead.

Agentic automation heralds a new era of automation made possible by the innovative fusion of AI combined with RPA. The emergence of AI agents as autonomous entities capable of learning, making intelligent decisions and performing complex functions introduces transformative potential that businesses cannot afford to overlook.

Adopting agentic automation not only garners significant advantages in operational efficiency and scalability but enables businesses to stay ahead of the curve in a rapidly evolving technological landscape. It guarantees an elevated level of customer satisfaction, spells exciting market opportunities, and ultimately leads to unprecedented business growth.

The path to agentic automation is clear; it's time to embark on the journey, for it is not only a strategic move, but a necessary evolution in the digital transformation narrative. As organizations increasingly embrace this shift, agentic automation is bound to redefine the future of businesses.

After all, in the transformative world of agentic automation, the future is not just here; it's now.

Welcome to the world of agentic automation!

Contact us to learn more.