

intellias

TURNING AGENTIC AI AMBITIONS INTO ATTAINABLE RESULTS

A Guide for CTOs



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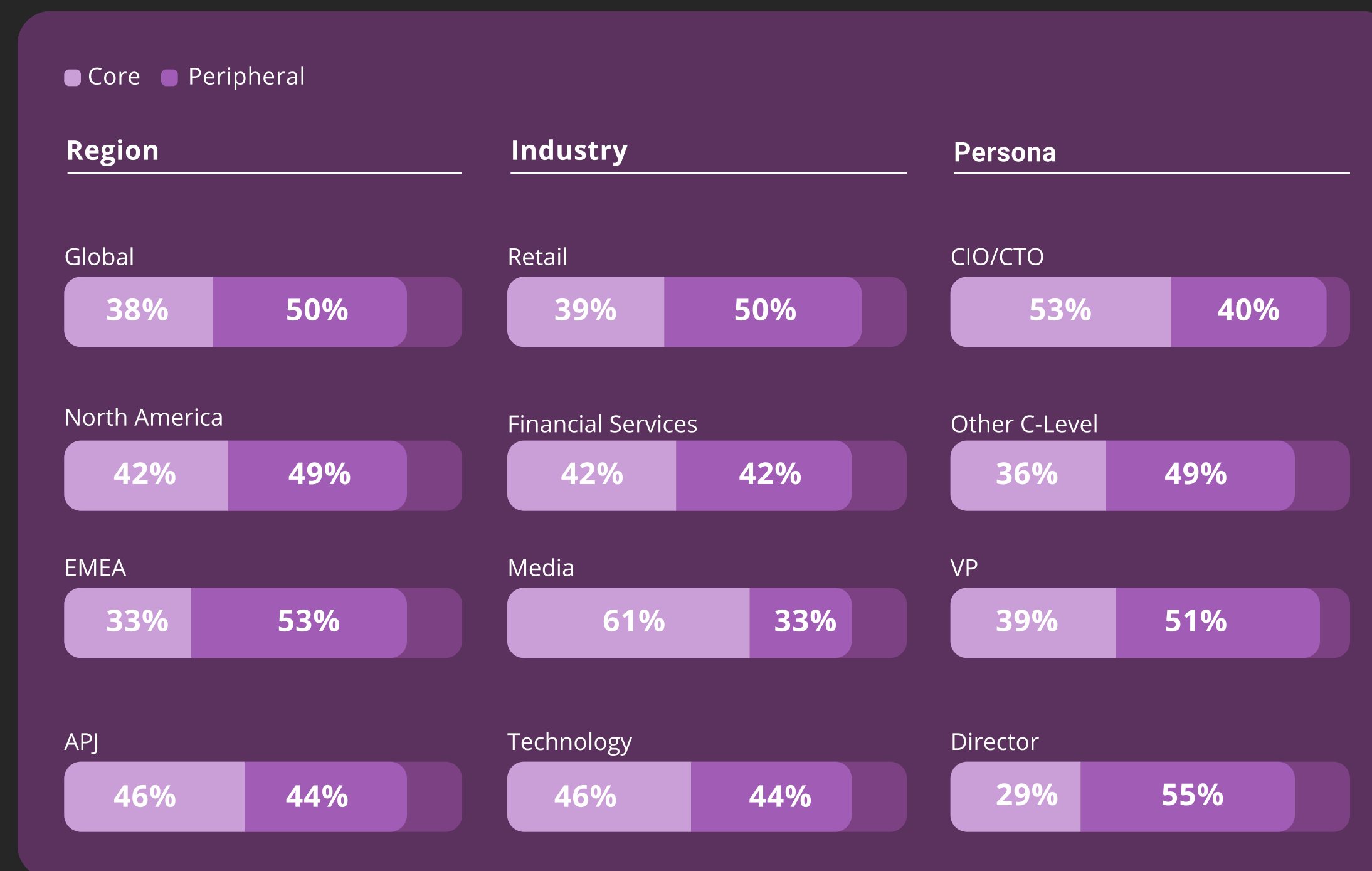
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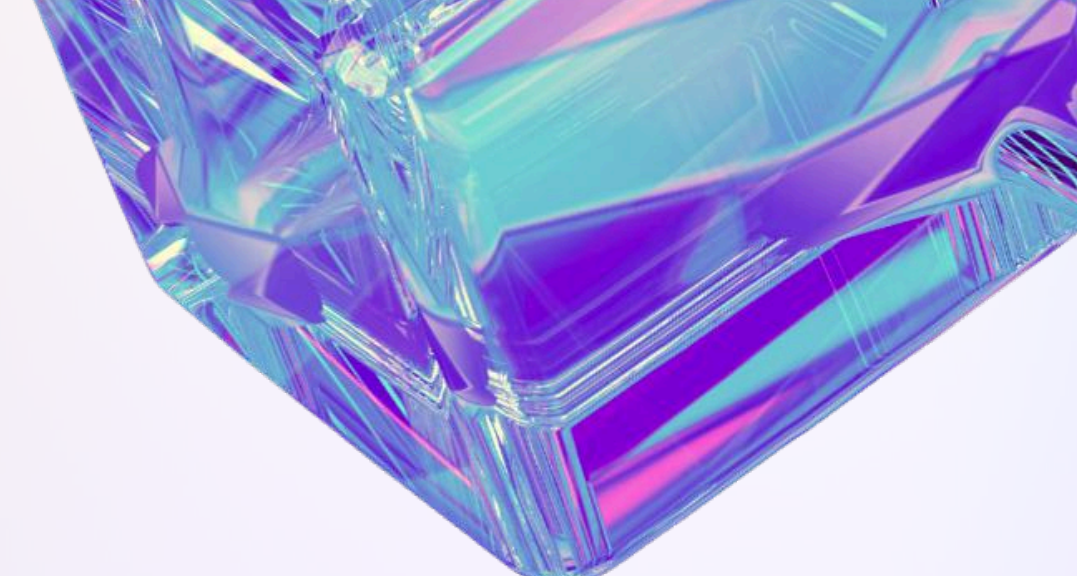
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01 THE BUSINESS CASE FOR AI AGENTS

Agentic AI systems promise previously unseen levels of autonomy and offer nearly limitless potential for innovation and growth. These systems quickly gained attention for their ability to perform thousands of tasks across almost every industry. AI agents can plan their actions, make complex decisions, and carry out multi-step operations with minimal or no human intervention. And, while agentic AI systems may start with clear goals, their agents can change those goals as they learn from their own data and become more efficient.

Companies are wasting no time in adopting this technology. Consequently, the market for AI agents is expected to expand dramatically. According to [Markets and Markets](#), its value is forecasted to rise from \$7.84 billion in 2025 to \$52.62 billion by 2030. This reflects a robust compound annual growth rate (CAGR) of 46.3% over the next 4 ½ years.





Can we trust agentic AI?

As organizations jump on the AI bandwagon, they also face an unprecedented challenge: In an age where systems can think for themselves, how do you define “trust” in operational technology? IT leaders such as CTOs and CIOs must catch the wave of enthusiasm for agentic AI, turn these systems into a sustainable advantage, and prevent them from becoming a risk. In pursuit of these aims, IT leaders seek answers to various questions about agentic AI, including:

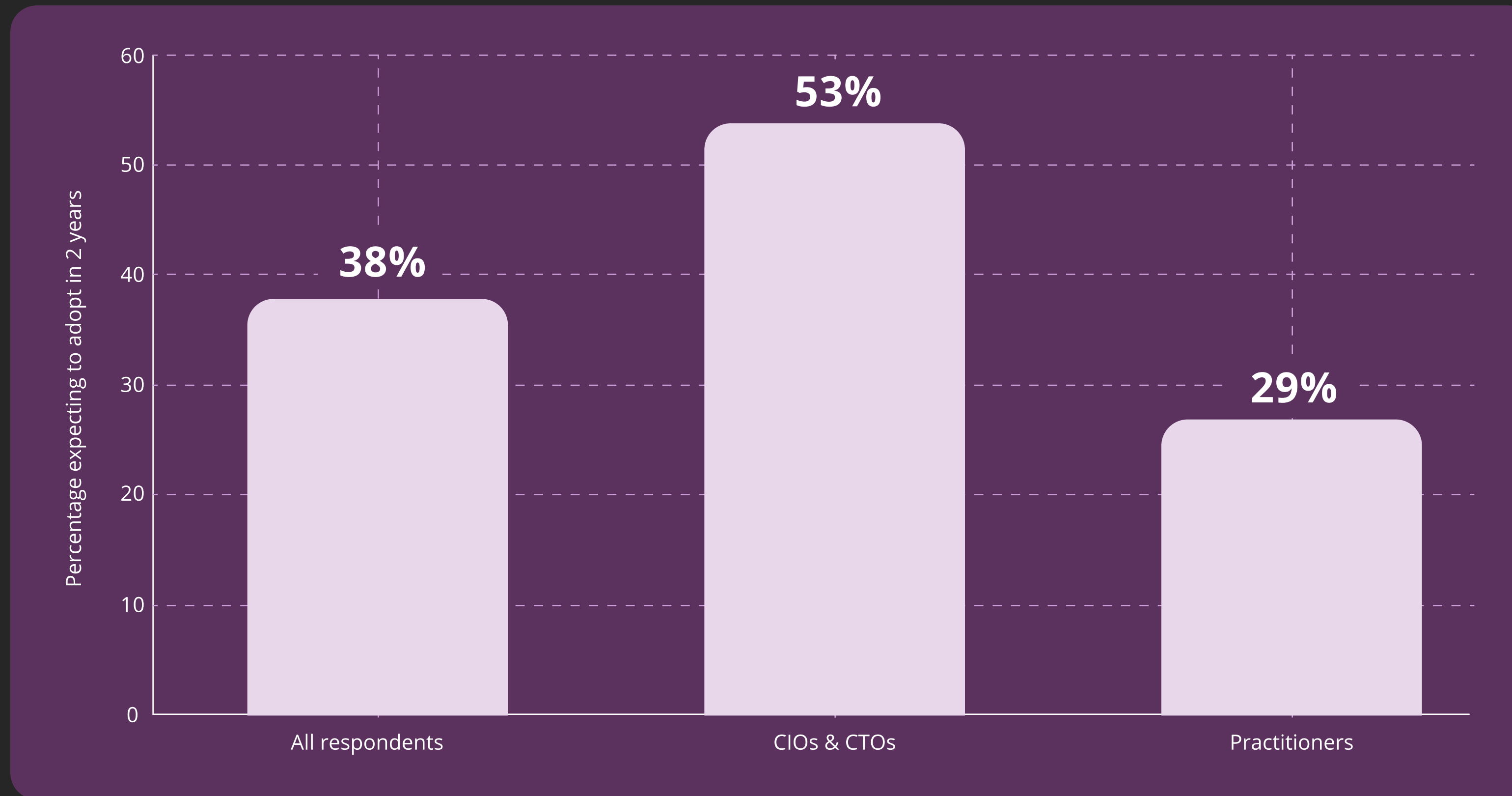
- How much decision-making can we safely delegate?
- Where can richer context or data streams give the most benefit?
- Which systems should our agents plug into first?
- How will we audit and refine agent behavior over time?
- What safeguards will keep agent actions predictable?

A recent PagerDuty survey highlights just how quickly interest is turning into intent:

- 38% of respondents expect to make agentic AI a core part of their IT operations within the next two years.
- Among CIOs and CTOs, that number climbs to 53%, reflecting high executive confidence in agentic AI’s long-term value.
- However, only 29% of practitioners share this view, suggesting that those closer to implementation remain cautious.



Who's ready for agentic AI?



Source: PagerDuty

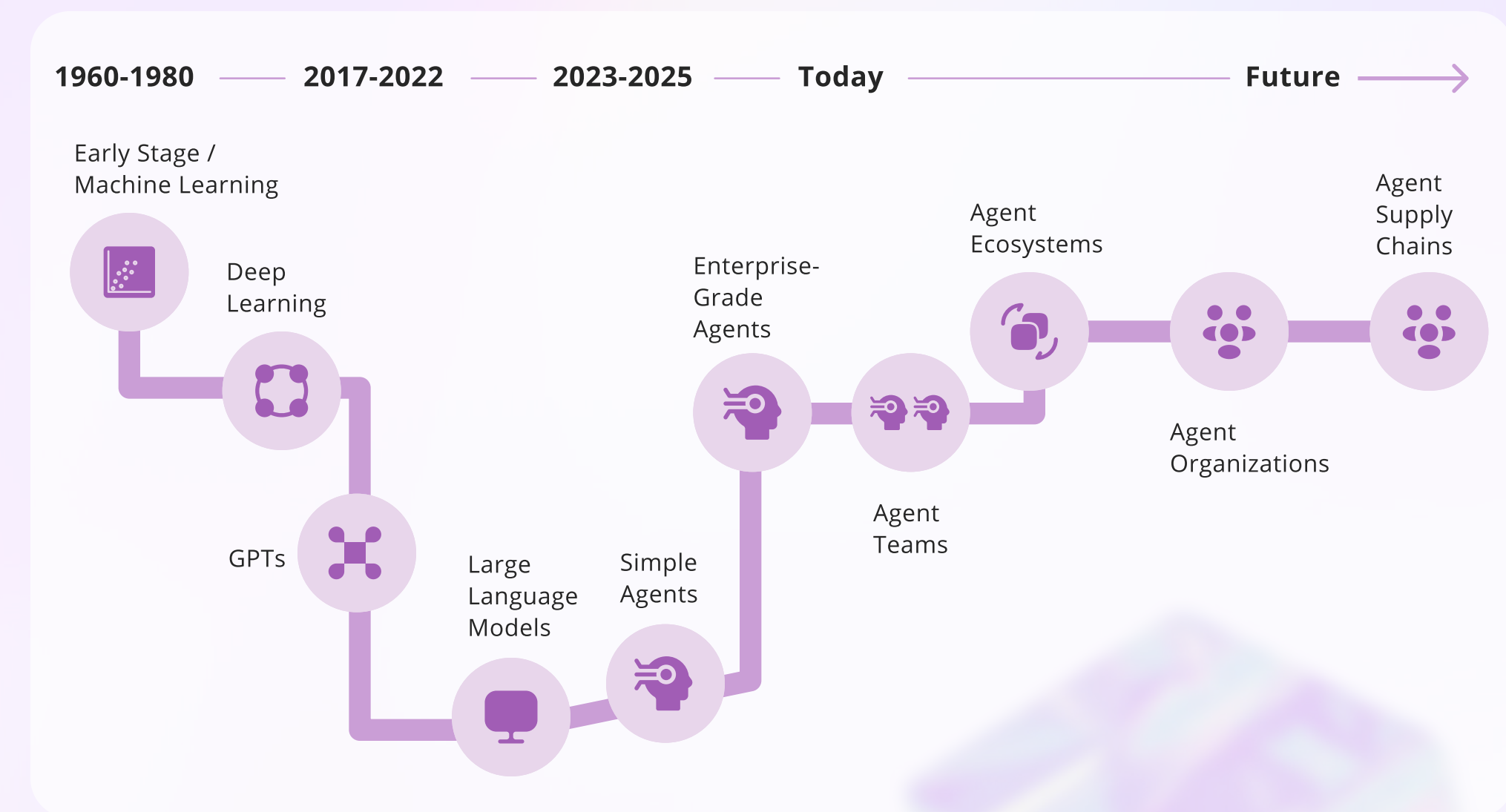
These insights are especially important because agentic AI is not a plug-and-play solution, and it can't be treated like another productivity upgrade. While organizations wrestle with their optimism, they also must plan where, why, and how they will use agentic AI

02 THE ERA OF “ANCIENT” AGENTS

An AI agent is software that operates independently, making decisions based on input from users or its surroundings. The earliest concept of agents is credited to Alan Turing, who coined the phrase “machine intelligence.” Among the earliest agents were Shakey the Robot and ELIZA, both of which debuted in 1966. Shakey was a mobile agent that could perceive its environment, plan multi-step actions (like pushing blocks or navigating rooms), and then execute them autonomously. ELIZA was a very basic Rogerian psychotherapist chatbot. It acted as a conversational therapist agent by taking information from its user and generating context-sensitive replies. In the 1980s, the first expert systems that mimicked human decision-making became available. These evolved into virtual assistants that have steadily improved with time, such as Apple’s Siri and Amazon’s Alexa.

In 2017, researchers introduced the transformer architecture. Google’s “Attention Is All You Need” paper detailed how large language models (LLMs) could process language with much greater fluency and at a greater scale than previous attempts with generative pretrained transformers (GPTs).

This led to the rapid adoption of LLMs through generative AI tools for summarization, content creation, and code generation, with a growing list of use cases.



Sources: [Agentic Mesh](#), [O’Reilly Media Inc.](#)

The GenAI generation

By 2023, companies began deploying agents capable of performing tasks across multiple systems. In May 2024, IBM and Salesforce expanded their alliance to combine Watsonx with the Salesforce Einstein 1 Platform. Oracle and Meta teamed up in December 2024 to deploy agents for cancer detection and drug development using Oracle Cloud. Salesforce followed with Einstein Service Agent, which focused on customer service. Then, in early 2025, NVIDIA introduced AI Blueprints — templates to help enterprises build agentic systems. They work with online frameworks like CrewAI, LangChain, and Weights & Biases. Also in 2025, NTT DATA launched its Smart AI Agent, designed to automate tasks in healthcare, finance, and logistics using natural language input; and OpenAI released ChatGPT Gov to bring secure GPT-4 access to U.S. government agencies.

Differences between agentic AI and generative AI systems

	Generative AI	Agentic AI
Core capability	Generates text, images, code, or music based on learned patterns	Plans and executes multi-step tasks with minimal human input
Input structure	Requires user prompts	Operates based on defined goals or objectives
Memory	Context is temporary	Maintains persistent memory across interactions
Autonomy level	Responds to inputs without goal awareness	Executes full workflows independently within a defined scope
System integration	Limited integration using plugins	Connects directly to APIs, databases, and enterprise tools
Learning model	Learns only through model retraining	Learns through feedback and memory
Common use cases	Content creation, summarization, coding	IT operations, customer support, business process automation

As agentic AI systems grew more capable, IT teams discovered the N×M integration problem. Each new agent had to connect with every relevant data source, tool, or service, but they lacked a universal connector. Scaling became difficult. Between 2023 and 2025, an open protocol-based interoperability offered a solution.

In November 2024, Anthropic released the Model Context Protocol (MCP), a universal standard for connecting LLM-based agents to tools and data. A few months later, in April 2025, Google introduced the Agent2Agent (A2A) protocol, backed by more than 50 partners. A2A defines shared rules for discovery, negotiation, and peer-to-peer communication, effectively becoming the HTTP of agentic AI.

Whereas generative AI gave us content, code, and images, protocols like MCP and A2A are making it possible to run IT operations, handle customer support requests, and automate business processes. They form the underlying infrastructure for secure and scalable agent ecosystems.

With AI's past in mind, a question arises: How much further can we go?

“The App Store created the app economy. MCP is creating the agent economy.”

Serhii Seletskyi,
Principal AI Architect, Intellias



Defining agentic AI

A formal definition of agentic AI has yet to emerge. Vendors define agentic AI to align with the features of their platforms.

For example:

- IBM uses the term agentic AI to describe a system that can orchestrate its own workflows and operate tools.
- Salesforce says customer service automation and self-improving behavior are required for a system to qualify as agentic AI.
- LangChain defines agentic AI systems as having precise, customizable control flows for applications.
- Deloitte says agentic AI systems are full reasoning engines that integrate context, planning, and execution.
- Anthropic makes a clear distinction between static workflows (pre-wired tools and prompts) and dynamic agents capable of changing their execution paths.

These varying definitions all reflect the underlying principles of agentic systems built around LLMs: they have autonomy, a purpose, and are designed to interact with other agents or agentic systems.

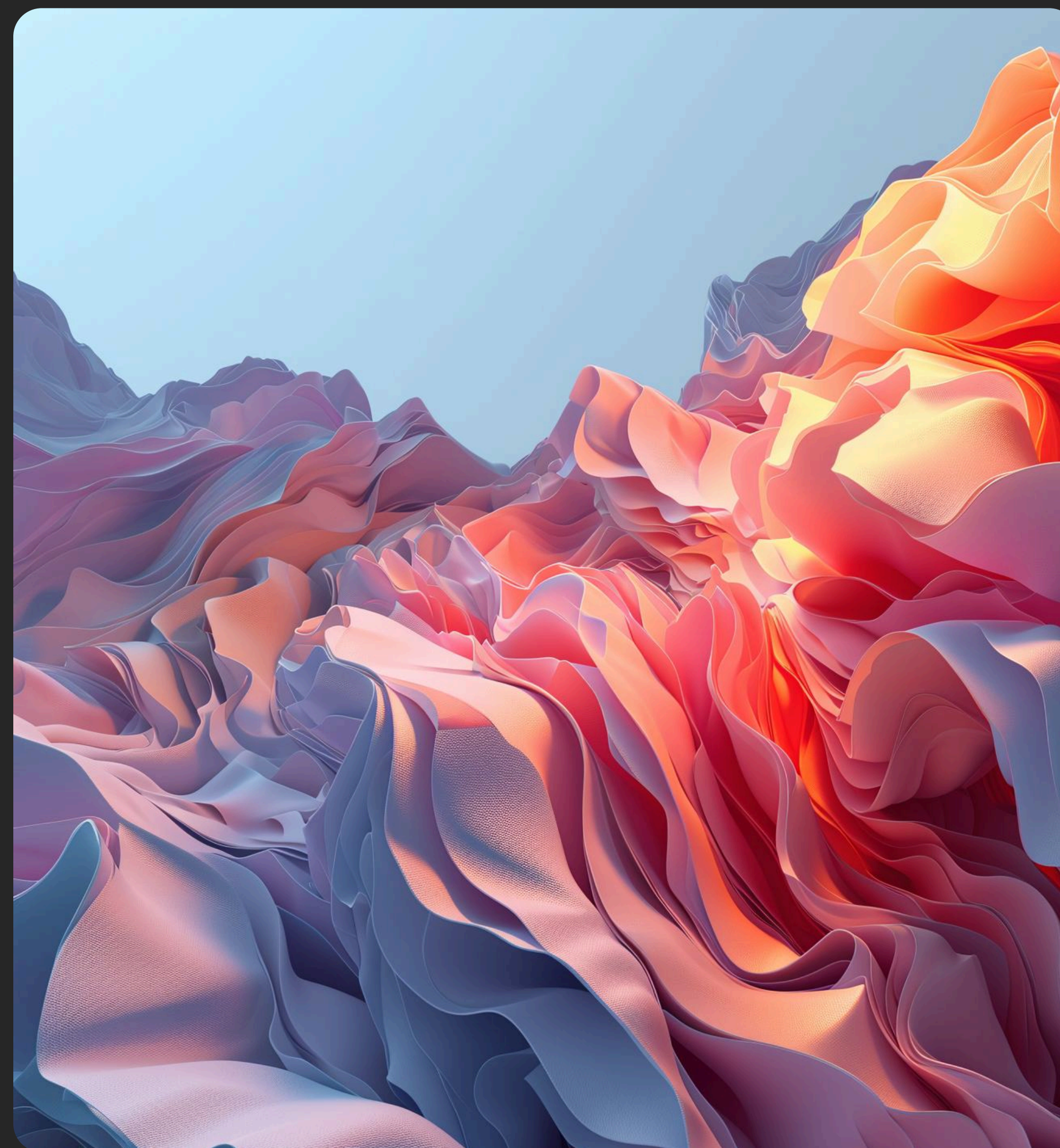
Many researchers describe agentic AI systems as being comprised of agents operating independently to achieve a defined purpose, constrained only by user-defined limits. They can access tools, learn from experience, work with other agents, and improve their behavior over time. An agentic AI system commonly uses three types of agents with different functional levels to complete its workflow:

- High-level agents define the goals
- Mid-level agents break the goals into actions
- Low-level agents perform these actions

A taxonomy of agentic capabilities

Agentic AI systems can perceive, decide, act, and adapt with minimal or no human oversight. To evaluate whether an AI system is truly agentic rather than GenAI, look for these core capabilities:

- **Goal-directed autonomy:** Agents must pursue defined objectives and act within their environment without continuous human direction.
- **Natural language interfaces:** Agents should support multimodal interaction, including text, voice, and vision.
- **Tool integration:** Agentic AI systems must connect to external APIs, run code, perform searches, or invoke services.
- **Perception:** Beyond structured data, agents need to process sensory input — visual, audio, or environmental cues — to become context-aware.
- **Memory and learning:** Agentic systems should retain past interactions and outcomes to improve future performance.
- **Acting on the user's behalf:** While a user sets the initial goals, an agentic system will choose the most efficient way to achieve them.
- **Acting in line with expectations:** Agents should choose actions that avoid surprises and build trust.



03 HYPE, RISK, AND RESPONSIBILITY

Technology leaders entered 2025 with agentic AI at the top of their agenda. Many organizations are actively preparing to implement agent-based systems, with some already positioning their businesses around the promise of autonomous AI.

The burden on CTOs, CIOs, and CXOs

In this environment, technology executives — particularly CIOs and CTOs — carry a heavy burden. They are expected not only to promote AI adoption but also to ensure that systems are ethical, comply with various laws and regulations, and can achieve desired business results.

Much of the current conversation about agentic AI positions it as a solution to nearly every business problem. But this often overshadows complex issues of organizational change and governance. While the potential to make vast improvements is real, so are the risks. As a result, CIOs and CTOs must assume the role of risk managers. As technology becomes increasingly autonomous, IT managers must ensure that they can maintain control and prevent agents from forming biases.

That also means CIOs and CTOs must be able to address the various sentiments that are forming as agentic AI begins to make its way into strategic discussions. Here are some of the emerging narratives.

Benefits of agentic AI systems



Improved efficiency

Agentic AI increases productivity by automating decision-making processes and reducing manual work.



Personalization

AI solution adapt to user preferences, providing accurate personalized recommendations and enabling customized interactions.



Scalability

Agentic AI can independently scale operations even in complex environments, adapting to a growing volume of incoming data.



Versatility across industries

Agentic AI can become a valuable asset for businesses in multiple industries, including healthcare, finance, logistic, and cybersecurity.



Cost reduction

Increased operational efficiency combined with minimized human intervention allows businesses to lower costs.



Higher decision-making quality

Agentic AI can independently handle large datasets and resolve complex problems that can be challenging for traditional tools.

The “super technology” narrative

Many industry voices hail agentic AI as a game-changer. They see it as a technology that can move beyond static prompts and reactive behavior to take initiative and adapt dynamically. It’s described as ushering in a “third wave of AI,” enabling business operations to evolve from rule-based processes to modern solutions.

The “business benefits” narrative

While some focus on the technology, others promote the business benefits of agentic AI systems. They suggest that businesses will see immediate improvements by automating complex workflows, reducing manual effort, and cutting costs, among other benefits. This view treats agents as self-learning, intelligent systems requiring minimal human input.

The “market leadership” narrative

The final narrative focuses on competitive positioning. Agentic AI is increasingly seen as a strategic weapon. With agentic systems, companies can offer hyper-personalized services. They can also improve pricing and supply chain decisions. As a result, businesses are racing to move from pilot programs to live systems. In this case, those who succeed first are recogniz...

Tying companies to narratives

	Narratives	Focus
AI-native companies	Super technology narrative; early adoption by leadership	Industry disruption, first-mover advantage
Industry giants	Super technology and voices of caution narratives	Cautious innovation, with caution, shaping public perception and standards
Mid-market enterprises (like Intellias)	Business benefits and voices of caution narratives	Measurable efficiency gains with risk awareness

Evolving roles of IT leadership

CTOs and CIOs now serve as strategic architects tasked with mapping agentic AI to business goals. They must understand how autonomous agents fit into the enterprise operating model and drive long-term value. These leaders must develop governance frameworks, establish data usage policies, and guide compliance with changing laws and regulations. Working closely with legal, audit, and cybersecurity teams is essential.

Changes in IT leadership

Role	Executive actions	Checklist
Architects of trust and technological integrity	<ul style="list-style-type: none"> Establish AI governance frameworks before model training begins Set internal AI risk policies (bias, privacy) Embed AI compliance into the product lifecycle 	<ul style="list-style-type: none"> Define governance body (CIO, Legal, Audit, CHRO) Set internal AI risk policies Embed AI compliance into the product lifecycle
Change agents	<ul style="list-style-type: none"> Introduce re-skilling and upskilling programs early Redesign job roles in tandem with agentic workflows 	<ul style="list-style-type: none"> Implement re-skilling programs Redesign job roles for AI workflows Monitor the impact of AI on the workforce
Developing talent for tech-driven futures	<ul style="list-style-type: none"> Treat agentic systems as innovation catalysts, not just automation tools Prioritize use cases that humans cannot solve without AI 	<ul style="list-style-type: none"> Identify AI-driven innovation opportunities Foster collaboration between tech teams and AI developers Focus on creating new business value chains
Future roles	<ul style="list-style-type: none"> Lead strategy and culture transformation to integrate AI into the long-term vision Promote continuous learning and adaptation for AI integration 	<ul style="list-style-type: none"> Align AI strategy with business goals Drive organizational culture change Ensure continuous learning and adaptation for AI integration

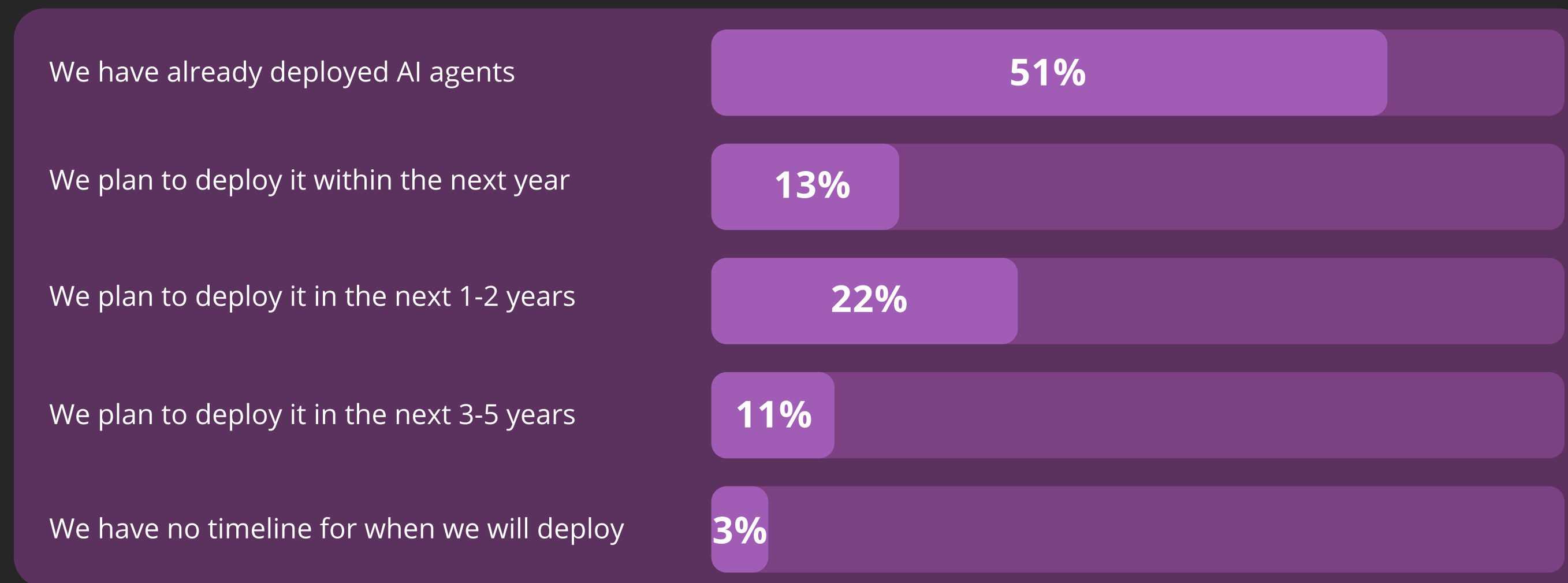
Adopting agentic AI demands cultural change. IT leaders must foster learning environments and coach teams through the disruption caused by adding new technology. They also must educate stakeholders on how implementing AI results in role changes and new workflows. This requires strong skills in change management. Core responsibilities now include upskilling internal teams and recruiting AI-savvy engineers. CIOs and CTOs also must develop training programs.

Furthermore, decision-makers must learn to read between the lines. While agentic AI presents enormous potential, it is not the answer to every problem. Rather than listening to vendor-driven hype, IT leaders should evaluate each use case on its merits and include governance from the start.

04 A PRACTICAL PLAYBOOK FOR IT LEADERS

Let's start with a simple truth: Agentic AI is not a magic wand. Just as you wouldn't usually use a hammer to repair a car, you shouldn't deploy agents without first asking whether they're the right fit for the problem and workflow.

Rolling out AI agents



Source: [PagerDuty Report](#)

Key value indicators among IT and business executives at companies worth more than **\$500 million** in the US, UK, Australia, and Japan.

To implement agentic AI successfully, IT leaders must rethink their strategy. This requires rebuilding teams, strengthening IT governance, and adapting to a new architecture.



Opportunity assessment: The AOIF model

Pascal Bornet, the author of bestselling AI strategy books, suggests a structure for evaluating agentic AI: the Agentic Opportunity Identification Framework (AOIF). It helps IT leaders move beyond vague AI ambitions by focusing on four dimensions:

1. Value chain analysis: Identify where AI agents can meaningfully affect business processes.
2. Market pain point matrix: Find areas of friction where traditional methods fail but AI agents can offer relief.
3. AI capability alignment: Match agentic strengths, like language comprehension, reasoning, and pattern detection, with business needs.
4. Integration readiness: Determine how easily new agentic AI systems can plug into existing platforms, APIs, and other data sources in your environment.

The AI command center

Experts in the field advise setting up an internal AI command center to lead adoption and experimentation from the top down.

AI command center

	Primary owners	Activities	Deliverables
Leadership roles	Executive sponsor, steering committee, functional champions	Set strategy, approve use cases, secure resources, guide rollout	Program charter, meeting minutes, approvals
Vision & principles	Command center, compliance, legal	Define ethics, transparency, human oversight, security, compliance	Vision statement, guiding principles, policies
Use case pipeline	Steering committee, business unit leads	Evaluate cases, track pilots, review metrics	Pipeline dashboard, pilot reports, risk assessments
Governance & oversight	IT, security, compliance, audit	Set policies, monitor agents, manage audit trails, enforce controls	Audit logs, compliance reports, kill-switch plans
Enablement & scaling	Training lead, HR, IT, business units	Provide training, create templates, support onboarding	Training docs, onboarding materials, reuse library

Agentic AI initiatives start with leadership. A strong executive sponsor, ideally at the CIO or board level, helps with internal buy-in. An AI steering committee brings together IT, legal, HR, and other departments to align priorities and help manage risk.

The next step is to define the initiative's charter. This includes writing a clear vision statement with measurable goals. For example, you might want to set a goal that agentic AI will improve the speed at which decisions are made by 30% within 12 months. Then, principles are established for ethics, privacy, and human-in-the-loop requirements. Communication includes monthly steering committee meetings, quarterly executive demonstrations, and biweekly office hours for open Q&A.

Each pilot project is tested before rollout. The pilots begin by validating data access and quality and selecting the best models or platforms for the job. Testing includes evaluating systems at the edge. CIOs and CTOs look for vulnerabilities and inconsistent output. Results are measured, documented, and used to decide whether to continue, make changes, or close the project.

Avoiding common failures

Common failure	How to prevent it
Vague or shifting objectives	Set clear and measurable goals, validate with test cases, and involve subject matter experts
Weak workflow structure	Map the full process, including exceptions and approvals, and use workflow tools
Incomplete system integration	Confirm API/data access early, set authentication policies, and monitor connectivity
Hallucinated outputs	Add output guardrails, enable fact-checking, and review results regularly
Lack of oversight	Log all agent actions, set up alerts, and add human checkpoints
Too much autonomy too soon	Start with narrow tasks, test in a sandbox, and scale gradually
Poor change management	Educate teams, assign onboarding leads, collect feedback, and adjust rollout
No success criteria	Define and track KPIs, benchmark before and after, and share outcomes with leadership

By including governance guidelines early, agentic AI systems can be scaled safely. Policies can be designed to restrict data sources to approved sets and require AI contracts to address compliance and liability. Control systems may include audit logs and kill switch protocols for intervention. Meanwhile, compliance can be mapped to specific laws and regulations, such as the GDPR or the EU AI Act, and reviewed quarterly.

Scaling agentic AI sustainably


After early pilots show positive results, organizations can begin to scale agentic AI systems to meet business needs. Leaders should standardize what works by publishing reusable frameworks, such as agent handoffs to other agents or data minimization strategies. Then, they should add validated AI components to their architecture repository. These patterns will become the foundation for repeatable, reliable deployments.

Operational visibility is important. Set up dashboards that monitor performance and track errors. Log how often humans must intervene. Then, configure alerts to flag anomalies or signs of model drift, allowing for rapid responses to issues. For users, provide hands-on training in areas like prompt engineering and the use of AI tools. Use internal forums or town halls to share both wins and failures.

Leadership must treat the agentic AI roadmap as dynamic and hold quarterly strategy sprints to reassess goals. Keep reinforcing the business value by reporting KPIs like ROI and time saved. Also include intangible gains, such as higher morale and faster innovation.

To help build buy-in and validate strategy, examine benefits and trade-offs based on current case studies.

Linking the playbook to real-world results

	 Benefit	 Risk
AI command center	McKinsey's internal AI agent Lilli cut knowledge work time by 30%	Centralized agents can cause org-wide outages if they fail or drift
Experiment portfolio	1-800Accountant cut support loads in half using Salesforce Agentforce	AI hallucinations can mislead customers at scale
Fast-fail pilots	Enable learning quickly and reduce large-scale risk	Poorly scoped pilots waste time and lose stakeholder trust
Governance	Ensures accountability, compliance, and public trust	Failure to audit leads to reputational damage
Scale & institutionalize	Salesforce: 25% of attendees at Agentforce Sydney had live pilots	Over-reliance on a vendor increases the risk of lock-in and misalignment
Evolve roadmap	Gartner forecasts that 80% of support cases will be handled autonomously by 2029	Gallagher survey: Rising compliance risks can derail fast-moving teams

Defining your agentic AI opportunities

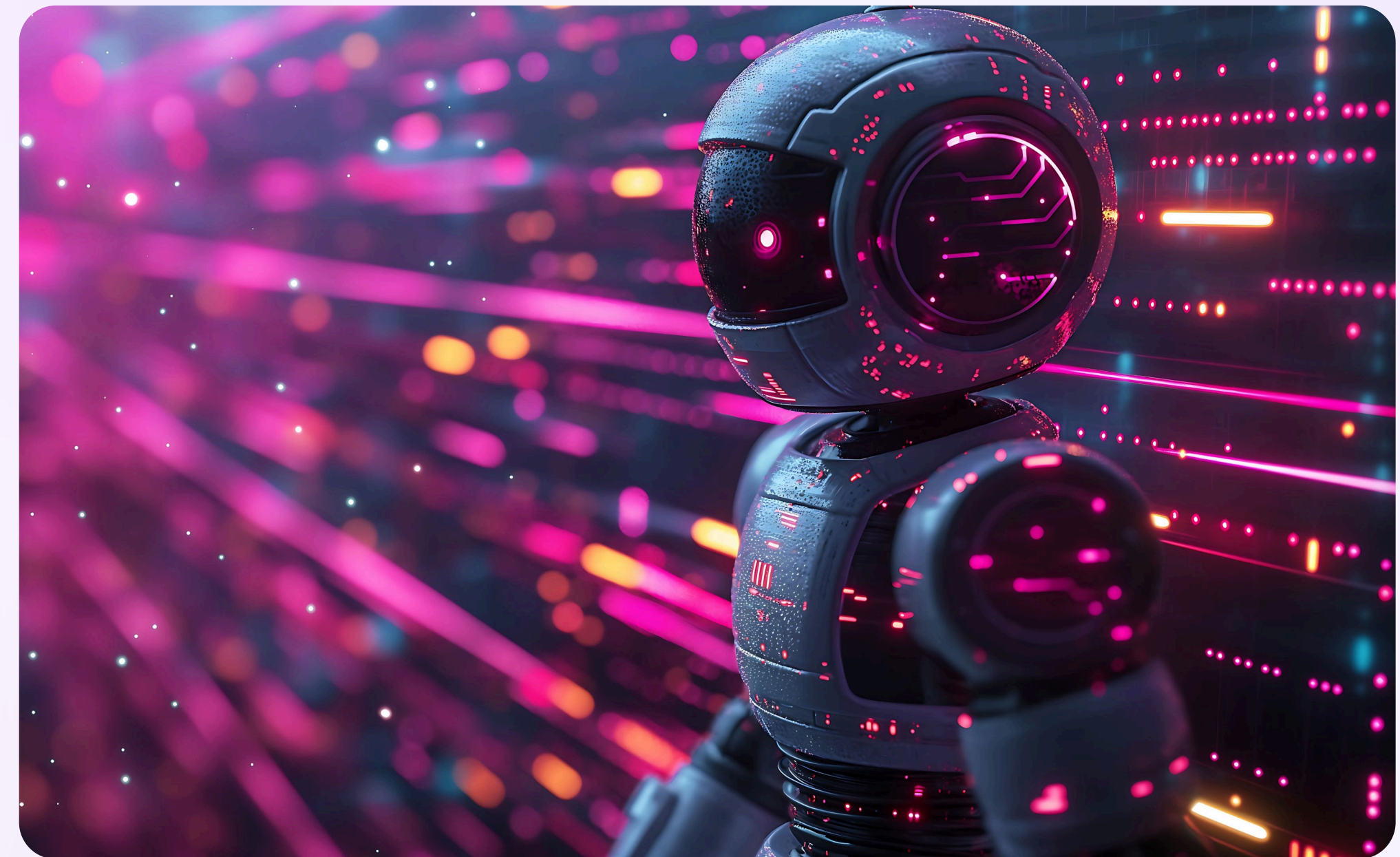
Your opportunities will likely fall into one of three categories:

- 1. Low-hanging fruit:** Automate repetitive tasks in current operations.
- 2. Reimagined services:** Use agents to rethink how existing services are delivered.
- 3. Net-new possibilities:** Offer new benefits that weren't previously viable.

Actions to take now

	Who owns it	Desired outcome
Build internal expertise	CIO, IT, HR	Teams trained in agentic AI design and safety
Assign owners for early deployments	Business unit leads	Clear accountability for pilot projects
Document all agent deployments	IT, Compliance	Centralized records for oversight and scaling
Align projects with business strategy	C-suite, Steering	Agents support clear business objectives
Track platform maturity and standards	IT, Vendors	Use stable, observable, and secure tools
Prepare policies for multi-agent scale	Compliance, IT	Guardrails are in place for expansion

Agentic AI is a leadership opportunity. With the right strategy, today's CIOs and CTOs can shape the future of how their organizations operate and compete. The companies that succeed with agentic AI will be those that move fast but stay grounded.



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