IBM Technology Altas

Automation roadmap

Advancements in generative AI and code generation will transform automation across all levels, across industries.

Updated April 2025

✅ Realized
🔄 In progress

	2024	2025	2026	2027	2029	2030+
Automation journey	🔄 ***Bring together business insights and IT investments.***	🔄 ***Enhance automation with governance, auditability, and trust.***	***Bring efficiencies across the full application and operations life cycle to promote self-serve.***	***Deliver automation that adapts to changing environments for proactive operations.***	***Merge business and IT to automate most of the mundane tasks.***	***Enable autonomous enterprises with trusted decision automation.***
Strategy overview	🔄 Business OKRs and IT spending will converge with greater visibility, recommendations for optimization, and intelligent remediations, leading to higher efficiencies. We will use generative AI to democratize access to integration capabilities.	We will extend observability deeper into the application life cycle, including financial responsibility of app stakeholders; enhance API discovery, governance, and security; and debut low-code app dev, integrations, and automation. Conversational AI will empower all personas across the app lifecycle.	We will bring automated observability and guardrails for visibility into risks. With generative AI and low-code tooling, we will help accelerate building sophisticated apps that seamlessly integrate with proprietary and vendor systems.	In 2027, our automation will provide more sophisticated predictions, improve service levels by 10x, and optimize across cost, performance, and carbon footprint.	We will build trusted automated systems that will perform most of the mundane digital work. Business and IT will cease to be separate disciplines and become synergistic in definition and operation.	In 2030 and beyond, we will develop trusted decision-automation systems that will operate most of the basic functions in an organization, with creative and strategic tasks done by humans. Automation will enforce the governance of sustainability goals.
Why this matter to our clients and the world	🔄 Enterprises will be able to scale and align IT investment to business-critical projects. Integrated end-to-end observability will provide more insights about applications from source to operations. Automation will bridge the skills gap and mitigate the polyglot of tools for users.	Trusted, real-time automation will lead to more tasks being automated, improving productivity and economies of scale. With generative AI, automation optimized for domains will consider compliance, supply chain, and security risks as part of integrated operational integrity.	Organizations will be able to accelerate application development while having continuous observability and risk posture assessments to balance speed-to-market with reliability and security. Generative AI and low-code techniques will enable productivity even for novice users.	Enterprises will enjoy automation of ever more complex tasks and reassign how work gets done. Business processes and IT will be jointly optimized with real-time decision-making.	Trusted automation, augmented with AI's ability to perform more complex cognitive tasks, will transform roles in IT and business operations. Automation in new processes will increase business and IT efficiency, thereby boosting enterprise competitiveness.	Furnished with robust and adaptable automation, enterprises will become autonomous in their business and IT processes, requiring minimal human management.
The technology or innovations that will make this possible	✅ Operations observability will include financial spending and AI consumption. 🔄 We will automate complex tasks and trigger collaboration workflows with generative AI. ✅ We will optimize AI models for developer language choices to enable less-skilled users to achieve more advanced goals. ✅ We will use integration platforms to provide access to enterprise data flows and as an injection point for AI logic.	Foundation models over multimodal IT and business data will provide broader prediction capabilities with interactive conversations through multiple channels (e.g., voice, text, video). We will develop conversational AI assistants enabling iterative output refinements. We will provide discovery of unmanaged application endpoints. Low-code techniques will help accelerate specialized outcomes.	We will leverage generative AI to build low-code tooling for developers and operations. This tooling will allow building highly customizable apps and fit-for-purpose observability and alerts. Agentic AI techniques and extensibility in integrations will enable intelligent automation in operations.	We will advance AI-driven simulation and scenario planning to aid the automation of new processes in unknown situations. Trust, policy, and governance will be critical to manage automation.	We will use large foundation models across multiple business and IT domains. Natural language processing (NLP) interfaces of various modalities (voice, text, video) will facilitate human-system interactions.	Advances in multi-agent reinforcement learning and stochastic game theory will help enable more complex autonomous processes, agents, and decision-automation systems with decentralized management tools. To respond to incidents, trustworthy automation will initiate predictive remediation and self-heal with zero downtime.
How these advancements will be delivered to IBM clients and partners	✅ We will deliver an initial integrated platform for higher accuracy, resiliency, financial transparency, and observability across IBM automation. It will be powered by generative AI and enable the convergence of business objectives with enterprise applications, data sources, and real-time events.	We will add to the IBM automation platform the capability to assess apps and IT against trust and regulatory governance, discover and manage application endpoints, and streamline the modernization of older applications. We will expand its integrated and seamless observability to supply chain and operational risks.	The integrated IT operations and automation platform will include deeper application development and runtime capabilities powered by generative AI-assisted low-code. The platform will cover the app life cycle from development to API-based integrations, deployment, runtimes, risk assessments, guardrails, and agentic AI interfaces.	The automation platform will incorporate foundation models for a broad set of IT and business data with prediction and problem determination capabilities. The platform will provide integrated support for AI-native applications and bring together disparate styles of data interaction.	An automation platform will be available that incorporates simulation and what-if reasoning to handle complex situations.	AI-enhanced decision-automation systems will be integrated across hybrid clouds for the management of business processes and IT.