IBM Technology Altas

Automation roadmap

Digital labor automates business, IT, and security tasks. Advancements in generative AI and code generation will transform automation across all levels, across industries.

- ✓ completed
- ⊕ pushed to next year
- ↻ on target

	2023	2024	2025	2027	2029	2030+
Automation journey	✓ *Automate strategic business processes and IT with digital labor.*	↻ *Bring together business insights and IT investments.*	*Enhance automation with governance, auditability, and trust.*	*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	✓ Digital labor will be used in strategic business processes, with hundreds of skills and completing thousands of tasks a year. ⊕ IT operation tools will be more advanced at incidence detection, triage and remediation, achieving 99.99% service level objectives.	↻ Business OKRs and IT spending converge with greater visibility, recommendations for optimization, and intelligent remediations, increasing efficiency and ROI. We will advance digital labor through greater use of generative AI for dynamically sequencing tasks.	Digital labor will see widespread use of a trusted automation platform accessible via multiple communication modalities. We will integrate business OKRs and IT operations and use conversational AI interfaces across all aspects of applications.	By 2027, automation will adapt to changing environments, provide more sophisticated predictions, proactively avoid incidents, 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, trusted decision-automation systems 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	✓ Digital labor performing information-centric tasks will augment people's productivity. ✓ IT management will see improvements in service level objectives, mean time to identification and resolution of events, and cost.	↻ With business and IT spending and operations linked, enterprises can scale faster and align IT investment to business-critical projects. Digital labor will dramatically increase productivity. ↻ Generative AI will dramatically improve the mean time to resolutions for IT incidents across applications, including generative AI platforms (e.g., watsonx).	Trusted, real-time automation will lead to more tasks being automated, saving clients time in more domains (insurance, banking, retail, etc.). IT systems will correlate lost revenue with outages and proactively prioritize remediation, with explainability and what-if analysis capabilities.	Enterprises will enjoy automation of ever more complex tasks and reassign how work gets done. Digital labor will disrupt more industries. 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, hence 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	✓ AI will enable digital employees to query, validate, and aggregate information, and improve worker collaborations. ⊕ Human guidance combined with robotic skills and some fully automated skills will complete tasks. ✓ Predictive capabilities with AI will detect problems earlier. ⊕ Better verifiability, auditability, and transparency will increase trust in automation.	↻ IT observability will include financial spending, business processes, and AI processing to provide a holistic view. Generative AI will automate more complex tasks in digital labor, classify financial data for business observability, and identify anomalies in IT spending. Incident remediation using generative AI will diagnose and summarize problems earlier with probable cause and provide remediation with code.	Foundation models over multi-modal IT and business data will provide broader prediction capabilities with interactive conversational capabilities. Sophisticated automation skills will target more industry-specific processes. We will enable counterfactual analysis for decision making and will make digital labor accessible via multiple channels (e.g., voice, text, video, mobile).	Advances in AI-driven simulation and scenario planning will aid the automation of new processes in unknown situations. Trust, policy, and governance will be critical to managing automation and driving the acceptance of autonomous agents. Modeling of multiple modalities of observability data across business and IT will enable the proactive avoidance of incidents.	Digital twins will enable simulations of complex processes and applications spanning across clouds. Generative AI will be broadly used across business and IT domains. Natural language processing (NLP) interfaces of various modalities (voice, text, video) will facilitate human-system interactions. Trustworthy automation techniques will capture predictive behavior.	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	⊕ Foundations of trust will be built into the automation platform, including verifiability, auditability, and transparency of automation. ✓ Automation and AI capabilities will be delivered on OpenShift and hyperscalers.	↻ An initial trusted automation platform will be delivered with increasing accuracy, robustness, transparency, auditability, and usefulness across Digital Labor. A new platform will be provided for converging business objectives and IT spending with proactive incident management capabilities.	Automation with mature trust and governance frameworks and capable of performing more sophisticated interactions will be available to use with hyperscalers. The platform will deliver conversational proactive incident management capabilities.	The automation platform will incorporates foundation models for a broad set of IT and business data with prediction and problem determination capability.	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.