TECH FUNCTION

How AI Is Paying Off in the Tech Function

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"Where's the beef?" actress Clara Peller irritably cried in the 1984 US TV commercial for the Wendy's hamburger chain. "Where's the value?" today's CEOs might ask, with similar consternation, when they review budgets for tech spending.

CEOs may want to look again. BCG's latest research into AI maturity and value finds that a fast-growing share of value from AI can be found in the tech function (what used to be known as IT). Our 2024 global study pinpointed 7% of all AI value coming from tech; this figure almost doubled to 13% in 2025. In the most recent study, which was conducted in the second quarter of 2025 and involved 1,250 companies worldwide, only R&D generated a bigger share of AI value (15% of the total). Value from AI in tech was easily three to four times that of other support functions.

The finding is even more significant in view of the fact that only 5% of companies in our study generate measurable value, which we define as revenue and cash flow increases and process and workflow improvements from AI at scale. Fully 60% of companies are not achieving material value at all, and another 35% are scaling up their efforts and seeing some returns, but many of them admit that they are not moving far enough or fast enough.

In early 2025, we observed that the rapid rise of GenAI was creating two big opportunities for CIOs, CDOs, and CTOs: optimizing their company's IT productivity and expanding their circle of influence within the organization. Our most recent research indicates that leading companies are acting on both.

What are these tech leaders doing differently, and what can other companies learn from them?

More Adoption, Stronger Focus

A big reason tech functions are finding more value is that they are pushing adoption. Our 2024 survey found that an average of 9% were scaling or had fully deployed AI in one or more of the top ten use cases in the tech function. In 2025, the rate of scaling and full deployment tripled to 28%. (See the exhibit.)

Tech leaders also are becoming better at focusing their efforts on where the value can be found. Value-creating use cases in tech often relate to automation and efficiency—two areas where AI measurably improves delivery speed, code quality, and risk mitigation. Thus far, leaders report the strongest adoption in six of the ten use cases. The six are:

- Software development life cycle (SDLC)
- Data management
- Compliance monitoring
- AI for IT project or program management
- IT service-desk automation
- Tech sourcing, such as AI-powered request for proposal (RFP) generation

In addition, legacy technology modernization is emerging as a seventh value-creating use case.

SDLC. Two-thirds of the companies we surveyed are using AI in software development, the largest area of adoption, and 36% are scaling or have fully deployed AI, which augments code generation, review, testing, and release automation. These firms are already experiencing a productivity boost of 25% and expect to achieve 44% greater productivity when they reach full scale.

Consider the example of a global financial institution that launched a firm-wide program targeting double-digit engineering efficiency improvement in 2027. It rolled out an AI developer tool to thousands of engineers in 2024 and expects overall efficiency to improve by about 20% as it scales adoption through 2027. The institution plans ROI-based prioritization of further AI opportunities across functions.

Data Management. Scaled or fully deployed by 36% of survey respondents, AI in data management spans ingestion, cleaning, labeling, and pipeline automation, all foundational tasks for AI readiness. Companies are already seeing productivity gains of more than 25%, on average, and expect increases of more than 45% on full deployment.

In the case of a global cybersecurity company, years of rapid expansion had produced vast tool and data sprawl. To reestablish control of its data, the CEO launched a central AI function and mandated company-wide use. The company prioritized AI outcomes in three domains—customer success, lead management, and software development—while accelerating enterprise-wide data

quality, governance, and policy modernization. The results have included cleaner, faster data pipelines and unified access standards across business units.

Compliance Monitoring. Scaled or fully deployed by 35% of tech functions, AI automates compliance checks across security, regulatory, and infrastructure domains. Through intelligent alerting, documentation automation, and risk prioritization, productivity gains to date exceed 20% and at maturity are expected to reach almost 45%.

AI for IT Project or Program Management. More than 30% of companies have scaled or fully deployed AI for project or program management. Productivity gains are expected to approach 40%.

IT Service-Desk Automation. AI underpins modern IT service-management platforms, triaging tickets, retrieving knowledge, and resolving first-level issues autonomously. Early adopters record 20% to 30% shorter handling times and 25% to 40% higher first-contact resolution. At scale, AI-enabled service desks deflect a significant share of routine tickets, freeing engineers for higher-value work and improving user satisfaction.

Tech Sourcing. Although it is still nascent, AI is emerging as a strategic differentiator in tech procurement. GenAI applications are reshaping supplier collaboration, tendering, and category management, reducing cycle time and improving decision quality as AI is integrated into RFP generation, supplier evaluation, proposal analysis, and contract management. Productivity gains are expected to approach 40% at scale.

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Tech and business teams at a global industrial goods company partnered to prioritize tech-procurement use cases. GenAI tools, such as Tender Assistant, Offer Analyst, and Knowledge Navigator, were embedded directly into sourcing workflows, enabling 50% faster document and revision drafting, faster and more consistent offer comparisons with improved risk detection, and 50% to 75% faster knowledge retrieval. The company materially shortened sourcing cycles and achieved higher transparency in supplier performance.

Legacy Technology Modernization. While it is still early for most, some leading organizations are reporting measurable returns from AI-driven modernization of legacy technology architectures, including code discovery and rule extraction. For example, a financial institution in Asia that requires rapid insight into a complex legacy code base is modernizing its collateral-management system. Using GenAI-enabled multiagent discovery, the institution was able to map dependencies and business rules across 3.1 million lines of code. The system extracted more than 5,000 rules in

less than three weeks, 225 times faster than manual analysis, reducing the effort from taking some 7,500 hours to about 100. Benefits included data-driven cost estimation, early risk detection, and accelerated modernization planning.

Momentum Shift

The momentum is set to accelerate with the emergence of AI agents as the next wave of value creators for tech functions. Capable of observing, reasoning, planning, and acting, agents go well beyond simple automation to drive transformational business value, with examples showing efficiency gains of 30% to 50% and profit margin improvements of three to ten points.

According to our survey, agents account for about 17% of company-wide AI value in 2025, and that share is increasing fast. Agentic value is expected to almost double to 29% by 2028. Agents also are expanding the value gap between leaders and their slower rivals. The top 5% of companies already allocate 15% of their AI budgets to agents. A third of these companies use agents, but almost no laggards do.

Within the tech function, agentic AI has moved from concept to production across almost a quarter of companies. Activity is concentrated in such high-leverage operational domains as:

- **Service Desk Automation.** Triage, resolution, and knowledge retrieval via multiagent orchestration.
- **SDLC Orchestration.** Test generation, pull-request preparation, release management, and defect triage.
- **Compliance and Policy Enforcement.** Automated remediation, continuous control monitoring, and audit documentation
- **Infrastructure Optimization.** Cost, performance, and security tuning through self-adjusting agents.

Tech function leaders need to beware, however, that realizing the full potential of agents requires building a strong agentic foundation. Two key pillars are a technology platform that decouples agents from core systems and governance systems that are built on the concept of graduated autonomy and aligned with a trust protocol.

Agent Platform. To scale, you cannot have every function building its own infrastructure. As agents move from pilots to production, CIOs must establish a shared AI platform, an enterprise system that everyone builds on and functions as a chassis that provides P&L owners with freedom within a framework.

> A shared AI platform separates agent logic from core systems, preventing technical debt and vendor lock-in.

Unlike standalone pilots, this platform separates agent logic from core systems, preventing technical debt and vendor lock-in. The platform should deliver three standardized capabilities:

- **A Model Gateway.** A unified access layer that enables using models from different providers, managing quotas and costs, and switching among models without rewriting code.
- **Shared Context and Memory.** Infrastructure that allows agents to retain short-term context and have secure access to stored information that may date back decades.
- **Orchestration and Tooling.** A standardized way for agents to discover and access tools (using standards such as the Model Context Protocol) and coordinate handoffs between worker agents and supervisor agents.

When this platform is approached as foundational infrastructure, it institutionalizes governance and enables safe scaling. When treated as an afterthought, companies risk building "agent islands" that cannot communicate or scale.

Governance via Graduated Autonomy. CIOs are rightfully concerned that autonomous agents might distort or break processes. The solution is moving from a binary go-no-go governance model to a graduated autonomy framework.

Governance mechanisms should enforce a four-tier promotion path for agents as they demonstrate that they can be trusted to do the right—and not the wrong—things:

- **Tier 1, Shadow Mode.** Agents observe and suggest; humans act.
- **Tier 2, Supervised Mode.** Agents act; humans approve.
- **Tier 3 and 4, Guided and Full Autonomy Modes.** Agents execute within strict guardrails; humans handle exceptions.

Form an operational perspective, tech functions should implement agent design cards—standardized definitions of an agent's purpose, boundaries, and failure modes—before a single line of code is written. The design cards ensure that every agent deployed has a clear "license to operate," with predefined signals of potential agentic drift and kill switches embedded in the platform.

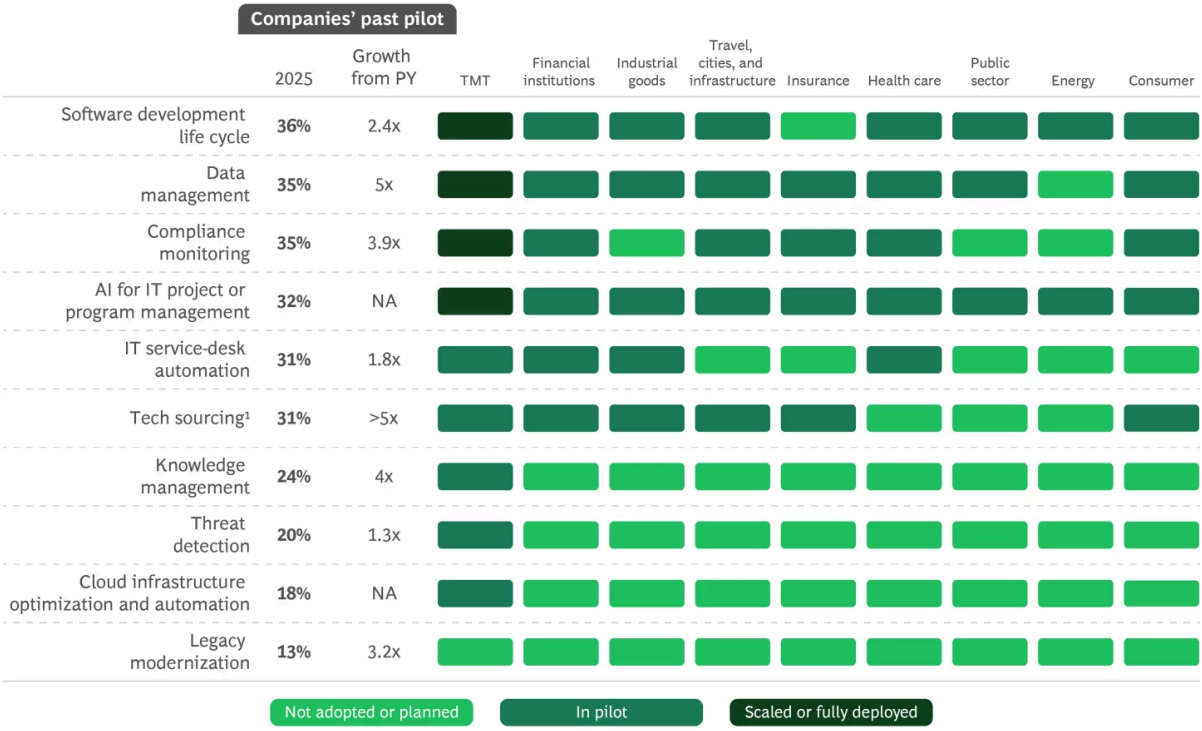
Realizing the Most Value from the Tech Function

AI adoption varies across sectors and tech functions. (See "Tech Function Adoption Patterns.") But, by looking at the leaders in our survey—the future-built companies that have successfully adopted an AI-first operating model and the 35% that are scaling up AI in their operations—we can identify three factors that set their tech functions apart. These companies follow three rules.

— Tech Function Adoption Patterns

AI adoption levels in the tech function vary sharply by industry and technology domain, based on such factors as digital maturity, operational complexity, and regulation. (See the exhibit.) Technology, media, and telecommunications, financial institutions, and the consumer sector lead in AI adoption across SDLC, data management, compliance, and project management, signaling maturity in scaling AI within tech. The public sector and energy industry trail; they are conducting a few AI pilots, but for a majority of use cases, they have neither adopted AI nor plan to. Outcomes such as cloud-infrastructure optimization and AI-assisted RFP generation remain underdeveloped.

The Deployment of AI Across Industries Varies



Source: BCG Build for the Future 2025 Global Study.
Note: n = ~1,200. PY = prior year; TMT = technology, media, and telecommunications; NA = not applicable.
Survey question: Which of the following AI use cases have you already adopted in your IT function(s)?
[1]For example, AI-powered RFP generation.

They focus on outcomes. Leaders design for outcomes, not outputs. They concentrate 60% to 70% of AI budgets on deep agents—systems that handle complex, end-to-end workflows—rather than spreading resources across thin automation layers. They define ambitious, zero-based value targets (such as reducing mortgage approval time by 50%) and work backward to define the agentic behaviors required to achieve them.

They embed AI-first operating models. To leaders, AI-first means more than adding automation; it involves reinventing core processes end to end. They embed business context. An AI-first operating model involves encoding the institution's proprietary knowledge—objectives, resources, and constraints—into the agent's logic. This ensures agents don't just execute tasks but also apply judgment consistent with the company's distinct strategy and risk appetite.

Their approach is defined by three interlocking design principles:

- **Enterprise AI Governance.** Responsible AI policies, compliance mechanisms, and the ability to conduct audits are built into IT delivery from the start.

- **Tech and Infrastructure Enablement.** Cloud-native, API-driven, observable platforms are interoperable with cloud partners and enterprise applications, such as those from SAP.
- **Business-Tech Orchestration.** Business leaders' and tech's co-ownership of value delivery is a given, enforcing ROI-gated scaling and embedding AI into outcome metrics.

They emphasize interoperability and hybrid approaches. Leaders build a hybrid, modular platform and avoid monolithic rebuilds. They assemble a flexible platform that allows them to buy commodity agents (embedded in software as a service) while building differentiating agents on their own infrastructure. They prioritize interoperability standards (such as model context and agent-to-agent protocols) to ensure these diverse agents can communicate and collaborate across the enterprise.

For example, a European energy services provider had made several AI investments but still struggled with fragmented use cases, scarce AI talent, and legacy systems. Workforce skepticism and regulatory pressures slowed progress further. To address these barriers, the CEO launched a comprehensive AI-first transformation program with a clear vision, ambition, and roadmap that sequenced quick wins in automation while laying the foundation for scalable platform adoption. The company implemented a modular AI stack using cloud-based infrastructure and robust DevOps and MLOps practices, and it restructured its operating model by creating cross-functional teams with AI-centric roles to drive organizational change and upskilling. The program aligned the organization on an AI-first vision with big potential for efficiencies and established a scalable model for ongoing transformation.

Leading tech functions have shown the need to approach AI not as a set of experiments but as an enterprise-wide deployment that is scalable, governed, and value driven. They make focused investments, embed AI-first operating models, and establish industrialized data and technology foundations. Most important for others, they present a clear roadmap for achieving value in the newly strengthened tech function.

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