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About Deloitte’s Outlooks
Our 2024 outlook for the technology industry seeks to identify the strategic issues and opportunities for tech organizations to consider in the coming year, including their impacts, key actions to take, and critical questions to ask. The goal is to help equip US technology organizations with the information and foresight to better position themselves for a robust and resilient future.
The technology industry flourished during the early pandemic years as companies accelerated their digital transformation efforts. But the industry has hit several speed bumps over the past two years. High inflation, elevated interest rates, and considerable macroeconomic and global uncertainties contributed to a softening of consumer spending, lower product demand, falling market capitalizations, and workforce reductions in 2022.\(^1\) Headwinds continued into 2023, with slight weakening of global tech spending and rising layoffs. But there are now glimmers of hope that a tech comeback may be imminent: Economists have lowered their assessments of recession risk, and analysts are optimistic that the tech sector could return to modest growth in 2024.\(^2\)

As the technology market faced heightened global challenges over the past few years—geopolitical tensions, supply chain volatility, raw material shortages, and emerging regulations—Deloitte urged tech leaders to evaluate where manufacturing happens, to improve the transparency and resiliency of their supply chains, and to prepare proactively for future systemic risks.\(^3\) We suggested leaders use technology to streamline business processes, rely more on intelligent automation, reduce tech debt by implementing leading practices for software development, and modernize legacy architectures by migrating to cloud resources and XaaS.\(^4\) We also recommended that tech companies consider how to extend their reach into other industries, using digital advancements to spur transformation.\(^5\) Finally, we advised leaders to build up talent in critical areas such as artificial intelligence (AI), robotic process automation (RPA), and cybersecurity.\(^6\)

With global and economic uncertainties continuing into 2024, these recommendations remain important. But it’s likely time to refocus on innovation and growth as well. A Q4 2023 Deloitte survey of 122 tech executives revealed an optimistic perspective: 55% of respondents rated the tech industry as “healthy” or “very healthy,” and even more (62%) believe it will be at that level six months from now.\(^7\) Asked to choose their company’s primary area of focus, “efficiency” topped the list (with 25% selecting it), while “innovation” and “productivity” tied for second place at 21%. “Growth” was a close third, at 19%. These leaders described the current state of the tech industry as “innovative” and “evolving”—and nearly two-thirds (62%) believed it was a good time for their company to take greater risks.

Some of the strategies we expect tech leaders to focus on in 2024 and beyond include:

- **Angling for a comeback, with help from cloud, AI, and cybersecurity.** Enterprise spending on software and IT services—particularly artificial intelligence, cloud computing, and cybersecurity technology—is expected to enable the most growth in the tech market over the coming year.\(^8\) Tech leaders should assess how they might shift or augment their offerings to meet that demand. While generative AI has sparked imaginations and headlines, with tech giants investing billions\(^9\) and startups playing a key role,\(^10\) enterprise purchasing in this specific category isn’t expected to ramp up until at least the second half of 2024.\(^11\) Deloitte expects nearly all enterprise software and service companies to integrate generative AI capabilities into at least some of their offerings in the coming year.\(^12\)

- **Striking a balance between globalization and self-reliance.** The worldwide, interconnected nature of the tech industry heightens the risk of disruptions from geopolitical unrest, supply chain volatility, raw material shortages, and new regulations and policies. Leaders should diversify their supply chains and manufacturing and development locations, spreading operations among trusted regions and ensuring redundancy. As governments refine trade policies, tech companies should be agile in adapting their strategies.

- **Setting the stage for growth with generative AI.** The next year is expected to be transitional for generative AI, with tech companies experimenting and finding applications that can drive efficiency and productivity. Some will likely evaluate how to speed up software development with generative AI-enabled tools. At the same time, providers can determine how to best deliver generative AI capabilities and how to monetize them. As generative AI investment and experimentation accelerate in the coming months, the legal and regulatory landscape may evolve rapidly, setting the stage for greater adoption in the second half of 2024 and into 2025.

- **Reckoning with regulations for the tech industry.** Governments around the world are evaluating the impacts that massive tech platforms and social networks have on businesses and consumers. In the coming months, regulations in the European Union and the United States will likely take effect, pushing tech companies to prioritize data protection, harm reduction, the ethical use of AI, and commitment to sustainability goals.\(^13\) A global minimum tax aims to close loopholes and push corporations to pay more, while new credits and incentives are designed to spur sustainable growth and job creation. With strong collaboration between business, legal, accounting, and finance teams, tech companies can elevate compliance efforts into competitive advantages.

Each of these themes represents a strategic opportunity for tech companies to reduce risk and set the stage for sustainable growth in the next 12 to 18 months. Prudent investment in supply chain resilience and data governance may serve as a hedge against geopolitical and regulatory shifts, while generative AI can streamline operations in the immediate term and accelerate longer-term innovation efforts.
High interest rates, worries about the potential for a slowing economy, and geopolitical challenges contributed to a slight weakening of global tech spending in 2023. Facing decelerating revenue growth, many tech companies ramped up layoffs last year, continuing to adjust their workforces after aggressive hiring in prior years. Now, there may be light on the horizon: Economists are more optimistic about the US economy as a whole, lowering the risk of a recession in 2024 to below 50%. Deloitte’s analysis pegs the risk at just 20%.

For the tech sector specifically, analysts are optimistic about a potential return to modest growth in 2024, with more robust prospects for 2025. Predictions for growth in global IT spending in 2024 cover a range from 5.7% to 8%.

There are signs that aspects of a tech rebound may already be underway. In 2023, the stock values of the so-called Magnificent Seven—the seven largest US tech companies—surged, outperforming the rest of the S&P 500 Index. The heavily tech-weighted Nasdaq Composite index took a mere 18 months to recover 80% of its 2021 all-time high—versus taking 14 years to regain 80% of its 2000 peak after the dot-com crisis. At the smaller end of the spectrum, startups continued to contend with lower VC deal activity and valuations—but Deloitte expects that the valuation corrections may fuel renewed interest from venture capitalists and corporate buyers. The 2023 uptick in tech IPO activity—following a slump since the end of 2021—could signal the start of a positive trend that allows more tech companies to exit successfully. While there are some positive indicators, tech leaders should remain vigilant about ongoing risks and forge their own careful strategies for growth in 2024.

What could help drive this tech rebound? Global IT investments are expected to be fueled largely by double-digit growth in spending for software and IT services in 2024. Analysts estimate that public cloud spending will grow by more than 20%, and they foresee stronger demand for cybersecurity. AI investment (not specifically generative AI) is also seen as contributing to overall spending growth. Economists have projected that AI-related investments could reach $200 billion globally by 2025, led by the United States. Beneficiaries of that spending include companies that create and train AI models, provide infrastructure to run AI (such as cloud services), and supply AI applications or services.
A Q4 2023 Deloitte survey of tech executives reinforces the analyst viewpoints: The survey asked leaders which technologies they expected to enable the most growth in the tech industry in the next 12 months. Artificial intelligence, cloud computing, and cybersecurity topped the list (with 52%, 47%, and 40% of tech leaders choosing each as a top-three technology, respectively).27

What about generative AI, which has grabbed headlines, captured the attention of tech leaders, and fueled a notable wave of experimentation over the past year (see “Setting the stage for growth with generative AI”? Deloitte expects generative AI growth in 2024 to be modest, with adoption and spending picking up in the second half, followed by more robust growth in 2025.28 Tech execs seem bullish about imminent generative AI spending: More than a quarter (27%) of respondents to the Deloitte survey selected generative AI as a top-three industry growth driver for the coming year.29 Perhaps due to the level of investment or effort required for full-scale generative AI initiatives, respondents from larger companies (those with 10,000+ employees or US$10B+ in revenue) selected generative AI at a higher rate than others. Notably, tech giants with plans to invest billions in generative AI will likely play a part in the sector’s rebound.30

Cybersecurity is also expected to play a key role in the comeback. Analysts forecast that global spending on security and risk management will see low double-digit growth from 2023 to 2024.31 Motivators include a persistent threat landscape, ongoing cloud adoption, remote work, the emergence of generative AI, and evolving data privacy and governance regulations.32 While the rapid adoption of generative AI may expose organizations to new attack surfaces and techniques, AI may also play a pivotal role in speeding up breach detection and containment.33

An uptick in tech mergers and acquisitions (M&A) in 2024 would be another sign of a tech recovery—but is far from certain. Leaders have traditionally viewed strategic tech M&A as a growth engine, but with the continued high cost of financing and focus on belt-tightening, 2023 proved disappointing for tech M&A. Deal volume and the total market value of those transactions remain well below their 2021 highs.34 On the bright side, a handful of billion-dollar-plus enterprise tech deals has given analysts a reason to hope that the tide may turn for tech M&A in the coming months.35 Technology geared toward productivity and efficiency improvement—including industrial automation and decision intelligence platforms—is seen as having the potential to spark renewed M&A activity.36 AI may also prove to be a driver: Companies may obtain AI technology and expertise via acquisitions, rather than building their own capabilities.37

### Strategic questions to consider:

- How will our company navigate the evolving economic landscape, continued high cost of borrowing, and ongoing geopolitical challenges while still achieving our growth objectives?
- Has our company evaluated how adopting AI—specifically generative AI—might help us drive productivity and efficiency gains? Have we considered how embedding generative AI capabilities into our products and services could help drive revenue and competitive advantage?
- Is our company continually assessing the security threat landscape and keeping up with the latest advances in security and risk management? Are we considering how AI could play a role in helping us boost our defenses?
- How can we ensure that our workforce has the right mix of skills for competitive success? Are we focused on building expertise in growth areas, especially cloud, generative AI, and cybersecurity?
- Are we considering how strategic acquisitions could complement our existing capabilities, help us innovate, expand our market reach, and even augment our talent?
Striking a balance between globalization and self-reliance

The worldwide, interconnected nature of the tech industry, with its global supply chains and international manufacturing and development centers, makes it highly vulnerable to global shocks including natural disasters, pandemics, and geopolitical tensions.

Supply chain resilience is no longer simply prudent; it’s critical. To help mitigate the risk of disruption, tech giants are diversifying their manufacturing and development locations and supply chains, reducing reliance on single suppliers or countries. Leaders often now view it as imperative to establish relationships with suppliers worldwide and spread operations across various trusted regions. All critical product components and elements of the value chain should have redundancies and alternate sources. Moreover, tech companies should work closely with suppliers to ensure resilience and flexibility throughout the production network.

As the geopolitical landscape continues to shift, governments worldwide are redefining their trade policies. Tech companies should monitor these changes and align their strategies accordingly. Countries and trading blocs often offer incentives, subsidies, and tax credits to encourage the localization of technology supply chains and innovation hubs. This trend is particularly evident in the semiconductor industry, where the United States and Europe are making substantial investments to build out domestic chip fabrication capacity, especially at advanced processing nodes. They’re also ramping up assembly and packaging capabilities, although from a low base. Strategic planning should include sustainability assessments, tracking, and reporting, both to secure maximum credit and ensure compliance with local and international regulations.

After severe chip shortages began in 2020, the US government passed the CHIPS and Science Act of 2022—which provides $52 billion in financial assistance to spur research and manufacturing in the domestic semiconductor industry. Semiconductor manufacturers are working to identify which parts of their supply chain should be domestic (onshoring), which parts can be in countries close to home (nearshoring), and which parts can be handled in countries considered to be allies (friendshoring). For some tech companies, particularly hardware and electronics manufacturers, full onshoring may be impractical or infeasible—but a blend of onshoring and friendshoring could help provide a hedge against instability.

As organizations identify potential choke points and determine how to reengineer their operations and processes to improve resilience, they may also focus on building redundancy into their research and development operations and talent pool. Recent geopolitical crises underscore the risks of over-relying on tech talent in any one location. Leaders should consider expanding their workforce in secure regions and taking care that pivotal functions and roles are distributed. Tech jobs have specialized training and educational needs that continue to evolve due to advancements such as generative AI. Redistributing talent pools likely means partnering with universities and engineering schools; working more closely with local tech schools, vocational schools, and community colleges; and supporting national institutions that promote STEM fields.

Tech companies may be able to boost resilience in their operations and supply chains by co-investment and knowledge-sharing initiatives with channel partners, contract manufacturers, and suppliers. This could involve helping suppliers with approvals and logistics as they work to establish facilities in different regions, as well as offering essential talent, engineering, and administrative proficiency as they spin up new operations.

Throughout 2024, tech companies will likely continue to prioritize sustainability and resilience, aiming to strike the right balance between globalization and onshoring/self-reliance. Organizations should continue to globalize their operations to take advantage of lower costs, greater access to talent, and faster innovation. However, they should also look to onshore or self-source critical components and operations to reduce their risks from global disruptions.

Strategic questions to consider:

- Has our company adequately evaluated our supply chain and operational vulnerabilities? Do we have a strategy for mitigating them?
- Is our company’s supply chain designed for flexibility in the short term and sustainability in the long term? Have we implemented multi-sourcing strategies to ensure a stable supply chain?
- Have we determined the right blend of onshoring, nearshoring, and friendshoring?
- Have we assessed the stability of our onshore and global talent pools, ensuring that critical functions are not concentrated in vulnerable regions? Is there a way to distribute our tech talent to make it more resilient to global disruptions?
Setting the stage for growth with generative AI

Over the past year, generative AI sparked the public imagination, unleashed new avenues for creativity, fueled a surge of startups, and became a strategic consideration for many of the world’s largest companies. The next year is poised to be a time of transition, with tech leaders assessing how to best deliver and monetize generative AI, how to integrate the technology into their operations, and how to address considerable challenges around data privacy, copyright, and emerging regulations.

Innovating with generative AI

In the past year, US tech companies focused intensely on generative AI, embedding it into their offerings and signaling plans to double down on investments. Across the sector, many tech companies will face the challenge of how to augment their products and services with generative AI to remain competitive. On the software front, Deloitte has predicted that nearly all enterprise software companies will embed generative AI into at least some of their products in 2024 and that the revenue uplift (for these companies and for the cloud providers of generative AI processing capacity) will approach a US$10 billion run rate by the end of the year. Deloitte expects 2024 to be a transition year, as generative AI-enabled software tools launch and adoption and revenues start to gain traction, setting the stage for more robust potential growth in 2025.

On the hardware front, Deloitte expects the uplift for chips and servers that execute generative AI to surpass US$50 billion in 2024.

Several tech companies associated with generative AI experienced rising valuations in 2023, partially due to excitement around the technology’s potential. However, they’re still figuring out how to monetize and profit from generative AI. Deploying and scaling generative AI involves heavy-duty servers packed with expensive, power-hungry chips, and the operational costs can range from US$0.01 to US$0.36 per generative AI query. Some providers who charge a per user per month (PUPM) fee may be losing money currently due to those who use the service more heavily than anticipated. We expect that tech companies will continue to grapple with how to translate generative AI into increased revenue, experimenting with a variety of pricing models (such as consumption-based, PUPM, or a hybrid approach).

Tech leaders should consider how to best utilize and deliver this new functionality. This could involve using “off the shelf” solutions from cloud and tech providers with generative AI integrated, building their own proprietary solutions (which could be prohibitively expensive), or partnering with co-developers.

Tech companies may use all these approaches to incorporate generative AI into existing or new offerings. One possibility is that AI solutions will evolve into an ecosystem where large players provide foundational platforms and contextual models as commodities, while additional parties build capabilities and functions on top to cater to the specific needs of their customers.

Focusing on productivity

Like their counterparts in other industries, many tech leaders are experimenting with embedding generative AI capabilities into their workflows to assist professionals and augment business processes. At this stage, many are focused on optimizing productivity and efficiency. A recent Deloitte survey of marketing leaders found that 26% already use generative AI (e.g., for content marketing), and another 45% expect to use it by the end of 2024. Users estimated the technology has saved them more than 11 hours per week.

Generative AI is being used to facilitate sales—from interpreting customer requirements documents to developing proposals and prioritizing leads—and to improve customer service (e.g., helping human agents respond to questions and solve problems and even anticipating customers’ future needs). Research has revealed that more than eight in 10 sales professionals surveyed feel using generative AI helps them speed up customer communication and increase sales, while nine in 10 service professionals believe it helps them address customer needs more quickly. Companies are also driving back-office efficiency by embedding generative AI capabilities into functions such as finance and order management—accelerating processes, reporting, and insights. Tech leaders should consider where to adopt generative AI in their company to best improve productivity and how they might use it to improve customer interactions and enhance tech support.
Particularly important for tech companies, generative AI tools are boosting programmer productivity and may be on the verge of transforming software development. These tools can act as coding and testing partners, suggesting lines of code, developing boilerplate code, writing documentation, generating synthetic test data, and creating test cases. A survey of professional developers found that 44% are already using AI tools in their development process, and another 26% plan to do so soon. With productivity gains reported in the 10% to 30% range, tech leaders should evaluate where they can bring generative AI into their development processes. 

Adopters that are further along in their evaluations and may have completed successful pilots with generative AI will likely focus on the challenge of scaling up and operationalizing the technology. Moving to production use will likely involve prioritizing highest-value use cases, mapping them to core capabilities required for implementation, and developing an implementation road map.

Avoiding legal and regulatory pitfalls
The use of generative AI raises considerable challenges around data privacy and content use. One area of concern for tech leaders is whether the large language models (LLMs) used in generative AI implementations have been trained using copyright-protected content. To address concerns, several leading software companies have pledged to assume liability in case their tools expose customers to IP infringement claims. Another misgiving is whether a company might lose control of its own data when it’s added to public models, whether through accidental data leaks or adversarial prompt engineering. As a result, Deloitte expects that more companies will begin training generative AI on their private enterprise data—but this approach could raise challenges around access to talent and specialized GPUs. Generative AI adopters should weigh the risks of publicly trained models and the expense and expertise required for building proprietary models as they decide which approach is right for their company.

International regulations governing privacy, potential harm, and ethical practices are also high on the list of concerns for generative AI adopters. The EU’s AI Act, for instance, is expected to be adopted in the second quarter of 2024, with a 24-month implementation period for most obligations. US companies are working to comply with the Biden administration’s October 2023 executive order governing the safe and secure development and use of AI. The order will require certain developers of “very powerful” foundation models to share safety test results with the government. It will also impose requirements for federal agencies, including the use of watermarks to identify AI-generated content, measures to protect user privacy, and efforts to minimize bias (see “Reckoning with regulations for the tech industry”).

Strategic questions to consider:

- Have we determined which use cases and workflows could be best improved with generative AI? Have we assessed where we could deploy generative AI in our value chain?
- Are we evaluating how generative AI could create opportunities for new products, services, business models, and, ultimately, new revenues?
- Does our workforce have the right set of skills for upcoming generative AI initiatives? For example, have we considered training existing staff to improve generative AI literacy? Are we recruiting the right talent?
- How will the changing legal and regulatory landscape affect our generative AI plans? Are we setting the right guardrails on our generative AI initiatives?
Reckoning with regulations for the tech industry

Large online platforms built up enormous power and influence over the past decade, and regulators are considering how to best address the potential risks. Tech companies of every size are under pressure to ensure data protection, harm reduction, ethical use of AI, and commitment to sustainability goals. They’re also tasked with pivoting to maximize tax credits and incentives while minimizing effective tax rates in the face of new global tax regulations.

Content and corporate conduct
The largest tech companies are affected by the European Union’s Digital Services Act (DSA) and Digital Markets Act (DMA). The DSA includes a raft of new rules around consumer protection, holding online platforms and service providers responsible for content moderation, fraud, and unscrupulous uses of their technologies. It also imposes stringent requirements on consumer-facing tech companies that collect customer data.

The DMA requires platforms to eliminate practices that stifle competition, including granting third-party businesses and advertisers more access to data and allowing them more freedom to engage customers outside the platform. Some of the “large platforms” identified by the EU are challenging their designations in court.

AI everywhere
The proliferation of AI has also spurred a new wave of regulatory developments. Expected to begin taking effect in 2024, the EU’s AI Act—which is nearly finalized—takes a risk-based approach to AI implementations, requiring visibility into the quality of data sets used, technical documentation and recordkeeping, human oversight, accuracy, and cybersecurity. It applies to any AI system that outputs results used in the EU, and it is expected to impact AI providers in the United States.

In the United States, President Biden signed an executive order on October 30, 2023, that seeks to promote the safe and secure development and use of AI and creates requirements related to the use of AI throughout the federal government. The executive order directs the development of both voluntary and mandatory guidance to govern the use of AI in the public and private sectors. It includes more than 100 directives to agencies, which will mostly be implemented over the next year. The Commerce Department will play an important role in implementation and has formed a US AI Safety Institute to help develop technical guidance for other agencies.
Global tax equality
Another factor that tech companies will likely encounter in 2024 is the OECD’s Pillar Two global minimum tax (GMT). Some countries have passed legislation and many others are proposing legislation to activate these rules. This ruleset is designed to ensure that multinational corporations pay a minimum of 15% regardless of location, removing the incentive to locate headquarters in low-tax jurisdictions.

Certain factors, including credits and incentives, may bring the effective tax rate in a country below 15%, in which case these companies will have to pay a “top-up” tax to meet the 15% threshold. This may reduce or eliminate the benefit of the incentive.81

For the tech industry, the way different jurisdictions operationalize these rules and how they define and treat credits and incentives may lead to operational shifts. Countries may jockey to build out incentive programs that don’t have an impact on effective tax rates.

ESG credits and compliance
No regulatory outlook would be complete without a discussion of environmental, social, and governance (ESG) reporting requirements. The EU’s Corporate Sustainability Reporting Directive (CSRD) expands the number of companies required to provide sustainability disclosures from around 12,000 to more than 50,000.82 It also imposes requirements around double materiality; companies must report the impacts that ESG efforts have on their businesses and the impacts they’re expected to have on the environment, human rights, social standards, and sustainability-related risk.83 These rules apply to multinational entities (like tech giants) that meet certain revenue criteria. European branches of these companies may have to provide consolidated reporting on their parent company’s activities as well.

In the United States, the Federal Acquisition Regulatory Council has proposed a rule that would require certain federal contractors to disclose their greenhouse gas (GHG) emissions, as well as their climate-related financial risk, and set science-based targets to reduce their emissions.84 California’s Climate Accountability Package, which was signed into law in fall 2023, requires climate disclosures and climate-related financial risk reporting from any company with revenues greater than US$1 billion doing business in California.85

Taken together, these developments could drive increased investment in cybersecurity, data management, and ESG reporting solutions. Tech companies will likely benefit by working with regulators and taking an active role in testing their products and services for compliance.

Strategic questions to consider:

- How can we ensure that our AI implementations don’t expose the company to potential regulatory and legal risk?
- What investments should we explore in cybersecurity and data governance to achieve compliance with new consumer-protection regulations?
- Can we leverage regulatory sandboxes to test our products and services?
- How can we model potential tax scenarios now to inform operational decisions for 2024–2025?
- How can we maximize ESG credits and incentives while preserving our effective tax rate?
2024 finds the technology industry preparing for a return to growth. Tech companies may protect themselves against future global disruptions by engineering a balance between globalization and self-reliance, and they’re gearing up for a raft of expected regulations. Preparations will likely involve doubling down on data governance, cybersecurity, and supply chain resilience. At the same time, tech companies are looking at generative AI as a way to achieve greater efficiency in the near term—and as a way to fuel innovation and growth for themselves and other industries in the long term.

In the coming year, tech companies should be on the lookout for potential signals of change in the market, including:

- Shifting macroeconomic conditions that could affect business models, product and service decisions, and workforce structure.
- Opportunities to grow, for example, making strategic M&A decisions to scale capabilities and talent in new areas, such as generative AI.
- Changes to governmental trade policies or incentives to localize tech supply chains—which could trigger a need to adapt strategies quickly.
- Signs of increased geopolitical unrest or other global disruptions, which could require a rapid shift to alternate suppliers or locations.
- Opportunities to expand existing R&D centers and establish new talent pipelines on friendly shores.
- Changes in how generative AI is delivered and monetized.
- A shift from single-agent generative AI assistants to multiple agents that provide business process automation.
- Resolutions of lawsuits alleging that LLMs were trained on copyright-protected data, as well as lawsuits around content moderation and unfair business practices—which will likely create important precedents and lessons.
- Introduction of additional privacy measures and enhanced user controls by consumer-facing platform giants to ensure compliance with EU regulations and to prepare for US requirements.
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About the TMT Center
Deloitte’s Center for Technology, Media & Telecommunications (TMT Center) conducts research and develops insights to help business leaders see their options more clearly. Beneath the surface of new technologies and trends, the TMT Center’s research can help executives simplify complex business issues and frame smart questions. The TMT Center can help executives better discern risk and reward, capture opportunities, and solve tough challenges amid the rapidly evolving TMT landscape.
Endnotes


5. Ibid.


7. In Q4 2023, Deloitte surveyed 122 technology decision-makers; 6% of respondents were in the C-suite, 30% were VPs/senior VPs, 48% were directors/senior directors, 12% were heads of business units/departments, and 2% were managers/senior managers.


12. Ibid.


15. Layoff tracking website Layoffs.fyi reported that approximately 262,000 tech workers were let go in 2023—up more than 58% from 2022. See: Layoffs.fyi, Tech layoff tracker and startup layoff lists; Charlotte Trueman, “Tech layoffs in 2023: A timeline,” Computerworld, accessed December 22, 2023.


17. IDC, “New IDC industry taxonomy reveals that software and information services, capital markets, and life sciences will lead worldwide ICT spending growth through 2027”; Mark Haranas, “Global IT spending forecast to grow 8 percent in 2024, solution providers weigh in on economy.”


21. Ibid.


26. Ibid.

27. 2023 Deloitte survey of 122 technology decision-makers.


29. Ibid.

30. Stewart et al., “Generative AI and enterprise software.”

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32. Mickle, “Big tech rebounds and preps for transformative AI investments.”


35. Michel Prins, “How generative AI changes cybersecurity,” InfoWorld, September 25, 2023; Anna Peck, “Rising focus on cybersecurity.”


47. Rojas et al., “Reshoring and ‘friendshoring’ supply chains.”


50. The Economist, “Big tech and the pursuit of AI dominance,” March 26, 2023; Mickle, “Big tech rebounds and preps for transformative AI investments.”

51. Deloitte notes that this is a small fraction of the US$1.6 trillion in global enterprise IT spending projected for 2024, and also smaller than the expected hardware uplift for chips and servers that perform generative AI of more than US$50 billion in 2024. While the market potential for 2025 and beyond looks robust and the revenue uplift for enterprise software companies will likely be tens of billions of dollars, Deloitte views 2024 as effectively a transition year. See: Stewart et al., “Generative AI and enterprise software.”

52. Ibid.


55. Dotan and Seetharaman, “Big tech struggles to turn AI hype into profits;” Will Oremus, “AI chatbots lose money every time you use them. That is a problem,” Washington Post, June 5, 2023; Stewart et al., “Generative AI and enterprise software.”

56. Dotan and Seetharaman, “Big tech struggles to turn AI hype into profits.”

57. Stewart et al., “Generative AI and enterprise software.”

58. Jarvis and Steinhart, “Generative AI in tech.”

59. More than 70% of companies are experimenting with generative AI. See: Carl Franzen, “More than 70% of companies are experimenting with generative AI, but few are willing to commit more spending,” VentureBeat, July 25, 2023.


65. Stack Overflow surveyed more than 60,000 professional developers. See: Stack Overflow, *Developer sentiment around AI/ML* June 12, 2023; Stack Overflow, 2023 Developer Survey, June 12, 2023.


73. The White House, *Executive order on the safe, secure, and trustworthy development and use of artificial intelligence*, The White House, *Fact Sheet: President Biden issues executive order on safe, secure, and trustworthy artificial intelligence*.


77. Lee et al., *Walking the tightrope: As generative AI meets EU regulation, pragmatism is likely*


84. US Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA), *Federal Acquisition Regulation: Disclosure of greenhouse gas emissions and climate-related financial risk*, 87 FR 68312, November 14, 2022.
