

Tech Trends 2024 | Deloitte Insights

Peering through the lens of government

The technologies that enhance our organizations and our lives are more powerful and essential than ever before. Forward-thinking governments and organizations understand the technological forces that surround them and look for ways to utilize them for the benefit of citizens and constituents alike.

This report provides a government-specific take on Deloitte's Tech Trends 2024 report, spotlighting the accelerating technology trends most likely to cause disruption over the next 18-24 months. We explore which trends may be most relevant for governments and how ready governments are to take advantage of them.

Learn how governments can harness new opportunities in emerging technologies to transform their organizations.

Relevance and readiness scale:

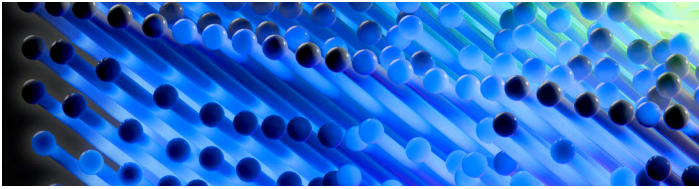
We looked at each trend and assigned a value from one (low) and five (high) based on the trend's relevance and readiness of government adoption.

READINESS:

How ready is the government to adopt the trend?

RELEVANCE:

How impactful would it be if the government adopted the trend?

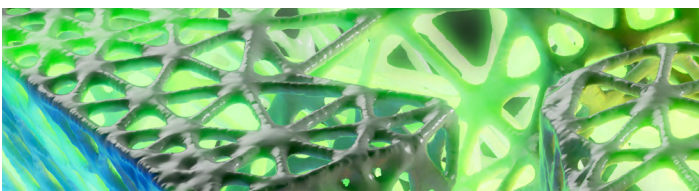


Interfaces in new places: Spatial computing and the industrial metaverse

Augmented and virtual reality for consumer applications garners significant attention, but these technologies are making their biggest impact in industrial settings. Organizations use the industrial metaverse to power digital twins, augmented work instructions, and collaborative digital spaces that make factories and organizations safer and more efficient. Factory workers, designers, and engineers are benefiting from immersive 3D interaction through devices ranging from tablets to smart glasses. Accessible, high-fidelity 3D assets are paving the way to an operationalized spatial web, where a digital layer atop reality accelerates ways of working. Eventually, autonomous machines and new devices can lead to breakthrough applications, such as remote surgeries or building security overseen by a single, well-connected worker.

Trends in action

Governments can continue to harness the power of virtual reality training today, from simulating social workers entering troubled homes to soldiers engaging on the battlefield. Immersive 3D training can lead to better retention than traditional methods. In parallel, using digital twins of physical installations and objects allows the growing ability to monitor, manage and improve existing infrastructure. As the spatial web evolves, it will enable activities from remote surgeries to troubleshooting. Investigating these technologies can help agencies get a leg up on the future.



Genie out of the bottle: Generative AI as growth catalyst

Philosophers have long debated whether machines are capable of thought, and generative AI complicates that discussion. These tools share much in common with earlier machine learning tools, but thanks to enhanced computing power, better training data, and clever coding, generative AI technology can imitate human cognition in a number of ways. Regardless of whether they possess intelligence in the philosophical sense, they do in a practical sense, creating the opportunity for productivity and efficiency gains in enterprise settings. Now that machines can behave, comprehend, and narrate like humans, the question becomes how this will impact the world broadly.



Smarter, not harder: Beyond brute force compute

As technology has become a bigger differentiator for enterprises, organizations have built ever-more complex workloads. Typical cloud services still provide more than enough functionality for most business-as-usual operations, but for the cutting edge-use cases that drive competitive advantage, a new need for specialized hardware is emerging. Training AI models, performing complex simulations, and building digital twins of real-world environments require different kinds of computing power. Leading organizations today are finding new ways to get more out of their existing infrastructure and adding cutting-edge hardware to further speed up processes. Soon, some will be looking beyond traditional binary computing entirely.

Trends in action

Agencies will soon have a wide range of computing technology to choose from: different types of CPUs, GPUs, custom chips for machine learning, quantum computers, and much more. Choosing wisely can improve performance and reduce cost, but the complexity of managing workloads in data centers and in the cloud will continue to increase. IT departments should prepare for the increased opportunity these new technologies will create. Balancing performance, cost and management complexity will be critical to success.



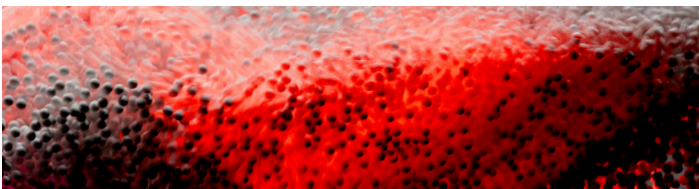


From DevOps to DevEx:
Empowering the engineering experience

As technology is increasingly a crucial part of the mission, tech talent is becoming more important than ever. Yet, ways of working are far from efficient: in most organizations, developers only spend 30 to 40 percent of their time on feature development. As organizations seek to attract and retain the best talent, developer experience, or DevX, is a renewed focus. DevX is a developer-first mindset that aims to improve software engineers' day-to-day productivity and satisfaction by reviewing the productivity of their every touchpoint with the organization. In the years to come, DevX may lead to a future of integrated, intuitive tools that enable citizen developers across the organization to produce value.

Trends in action

It is ever harder for organizations to attract and retain highly skilled technical talent as demand outpaces supply. To be more attractive workplaces for those looking for secure, mission-driven jobs, agencies should focus on improving the developer experience by reducing barriers to productivity, eliminating bureaucratic tasks, and providing continuous learning opportunities. Shifting from rigid policies and procedures to a more flexible and empowered employee experience can provide governments a distinct competitive advantage as the employer of choice.

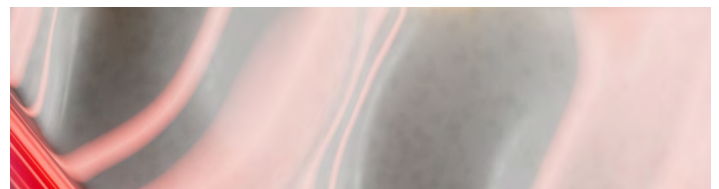


Defending reality:
Truth in an age of synthetic media

With the proliferation of AI tools, it's now easier than ever for bad actors to impersonate and deceive their targets. We're seeing deepfakes being used to get around voice and facial recognition access controls. They're also being used in phishing attempts. Security risks are multiplying with every new content-generation tool that hits the internet. But leading organizations are responding through a mix of policies and technologies designed to identify harmful content and make their employees more aware of the risks.

Trends in action

With the acceleration of deepfake videos and AI-generated content, governments are increasingly under pressure to protect employees, agencies, and the public. Today's tools allow malicious actors to conduct large-scale, hyper-targeted cyber-attacks and social engineering campaigns at minimal cost. Managing the combination of cyber threats, misinformation and disinformation will require coordination across agencies, companies, and countries. Utilizing collective intelligence and unified approaches is critical to swiftly identify and implement protective measures, as well as effectively defending agencies.



Core workout:
From technical debt to technical wellness

After years of investments in once-cutting-edge technologies, organizations are grappling with an expanded set of core technologies, including mainframes, networks, and data centers, that are in dire need of modernization. To lead in the future, organizations are moving away from siloed technical debt management towards the goal of technical wellness. Preventative wellness assessments, rooted in mission impact, can help teams prioritize which areas of the tech stack need treatment and which can continue serving IT's needs. In the years to come, organizations are likely to develop a highly customized and integrated wellness plan across the tech stack, including investments in self-healing technologies that reduce tomorrow's modernization needs.

Trends in action

Instead of approaching modernization and technical debt reduction one system at a time, agencies can take a more integrated approach. Agencies can develop technical wellness plans that, over time, work to progressively incorporate more modern technologies and techniques like automated management and self-healing to improve service to the mission. By maintaining a continual focus on wellness, agencies can also adopt approaches to upgrade their technology and systems as they go, reducing the need for recurring "big bang" modernizations.



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