

Tech Trends 2022 | Deloitte Insights

Tech Trends 2022

Industrial Products & Construction (IP&C) perspective

The technologies that enhance our organizations and our lives are more powerful (and more essential) than ever before. Forward-thinking IP&C companies and organizations understand the technological forces that surround them and look for ways to harness them for the benefit of customers and society alike.

This report provides an IP&C company-specific take on Deloitte's *Tech Trends 2022* 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 IP&C companies and how ready companies are to take advantage of them.

Learn how early-trend participants are taking advantage of new opportunities in automation, blockchain, data-sharing, and other areas to transform their organizations and engineer competitive advantage.

Relevance and readiness scale: We looked at each trend and assigned a value between one (low) and five (high) based on the trend's relevance and readiness of IP&C company adoption.

Relevance: How impactful would it be if companies adopted the trend?

Readiness: How ready are companies to adopt the trend?



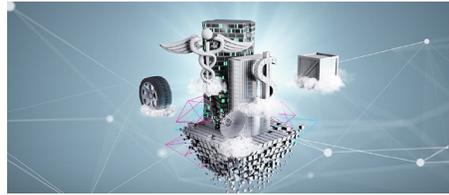
Data-sharing made easy

A host of new technologies promise to simplify the mechanics of data-sharing across and between organizations while preserving the veil of privacy. As part of a growing trend, organizations are unlocking more value from their own sensitive data while leveraging enormous volumes of externally sourced data that has traditionally been off limits. This can open up a new arena of data-driven opportunities. Indeed, the ability to share secured data with others within an ecosystem or value chain is giving rise to new business models and products. For example, by pooling clinical data on shared platforms in the early days of the COVID-19 pandemic, researchers, medical authorities, and drugmakers were able to accelerate the development of treatments and vaccines. Moreover, these same data-sharing protocols have helped drugmakers, government agencies, hospitals, and pharmacies coordinate and execute expansive vaccination programs that prioritize efficiency and safety, preserve intellectual property.

Trends in action

Data democratization among manufacturers, especially back to OEMs, can help companies better track machine utilization. Especially when companies have an Equipment-as-a-Service model, where the OEM operates machinery, data sharing is key for preemptive service. In addition, sharing visibility of parts throughout the supply chain can help to flag supply bottlenecks, enabling preemptive action.

Readiness: ● ● ● ○ ○
Relevance: ● ● ● ● ○



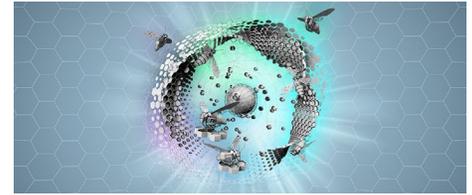
Cloud goes vertical

The center of gravity around digital transformation has shifted from meeting the IT needs of an industry-agnostic organization to meeting the unique strategic and operational needs of each sector and even subsector. Hyperscalers and SaaS vendors are working with global system integrators and clients to provide modularized, vertical-specific business services and accelerators that can be easily adopted and built upon for unique differentiation. As this trend gains momentum, deploying applications will become a process of assembly rather than creation—a shift that could reorder the entire value stack. Business processes will become strategic commodities to be purchased, freeing organizations to focus precious development resources on critical areas of strategy and competitive differentiation.

Trends in action

Companies are digitally enabling their business processes using modularized code bases, allowing for accelerated expansion and scalability. Part of the process also includes defining a tiered tech stack comprising many different hardware and software solutions (e.g., geospatial tracking devices, IIoT sensors, historians, pre-packed AI/ML engines, ERP, etc.) that can be connected through the cloud to maximize their impact while minimizing development effort.

Readiness: ● ● ● ○ ○
Relevance: ● ● ● ● ○



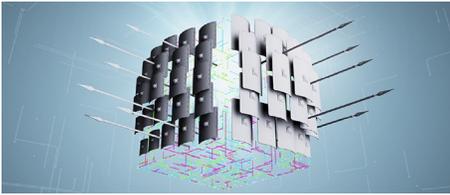
Blockchain: Ready for business

Trendy cryptocurrencies and non-fungible tokens (NFTs) capture media headlines and the public imagination, but these and other blockchain and distributed ledger technologies (DLTs) are also making waves in the enterprise. In fact, blockchain and DLT platforms have crossed the disillusionment trough of the hype cycle and are well on their way to driving real productivity. They are fundamentally changing the nature of doing business across organizational boundaries and helping companies reimagine how they make and manage identity, data, brand, provenance, professional certifications, copyrights, and other tangible and digital assets. Emerging technical advancements and regulatory standards, especially in nonpublic networks and platforms, are helping drive enterprise adoption beyond financial services organizations. As enterprises get comfortable with blockchain and DLT, creative use cases are cropping up in many industries, with established industry leaders expanding their portfolios and creating new value streams, while startups dream up exciting new business models.

Trends in action

Within IP&C, potential blockchain applications focus on supply chain and inventory management, increasing asset visibility up and down the value chain. Companies can also consider blockchain for capacity management, securely storing information about upcoming IT resource needs in a secure location and communicating this across sites. Last, IP&C companies may be interested in tracking and tracing defects of an asset, with all historical information stored in blockchain ledgers that can be shared from OEMs to final product consumers and can help generate recommended maintenance and repair scheduling.

Readiness: ● ○ ○ ○ ○
Relevance: ● ● ● ○ ○



Cyber AI: Real defense

Security teams may soon be overwhelmed by the sheer volume, sophistication, and difficulty of detecting cyberattacks. Enterprise attack surfaces are expanding exponentially. The use of 5G is growing, along with the number of network-connected devices; remote work is gaining ground; and third-party attacks have become increasingly pernicious. It's time to call for AI backup. Cyber AI can be a force multiplier that enables organizations not only to respond faster than their attackers can move but also to anticipate these moves and act in advance. AI can be expanded beyond established applications, such as using it to accelerate data analysis, identify anomalies, and detect threats. These emerging AI techniques can help human analysts focus on prevention, remediation, and developing a more proactive, resilient security posture. And as AI is adopted across the business, it can also be leveraged to help protect valuable AI resources and combat AI-powered attacks.

Trends in action

As cyberattacks increase globally, companies need to be on guard. As evidenced by recent large-scale attacks, the status quo is no longer sufficient. IT leaders have two options: hire more cybersecurity talent in a field with an estimated shortage of more than 3 million professionals globally, or implement cyber AI. Companies must evaluate the use of AI to automate attack detection to reduce noise and allow the scarce cybersecurity professionals to zero in on the strongest signals and indicators of compromise.

Readiness: ●●●○
 Relevance: ●●●●



IT, disrupt thyself: Automating at scale

Faced with creeping technological complexity and higher expectations of stability and availability, some CIOs are radically reengineering their IT organizations. How? By taking a page from the cloud provider's playbook. They are identifying repetitive, manual processes and applying a combination of engineering, automation, and self-service. The net result is streamlined timelines, accelerated value delivery, and more effective and stable IT across the board. This kind of disruptive automation represents a vast yet underrealized opportunity. Previous technology trends such as NoOps, zero trust, and DevSecOps, share a common theme—the importance of moving to code across the organization. Migrating away from manual administration to engineering and automation, organizations can manage complex systems more effectively and improve the customer experience through improved availability and resilience.

Trends in action

As CIOs disrupt their IT organizations with automation, there will be ripe opportunities to shift employees' focus from patching, monitoring, and measuring to higher-value engineering activities. Within IP&C, teams accustomed to manual handoffs of human-to-human interaction are beginning to realize the benefit from designing automated workflows to support integration across functions—ultimately helping businesses realize gains much more quickly.

Readiness: ●●●○
 Relevance: ●●●●



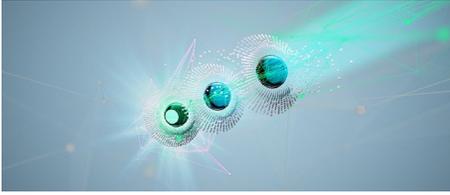
The tech stack goes physical

With the explosion of “smart devices” and the increased automation of physical tasks, IT's remit is growing again, extending beyond laptops and phones. CIOs must now consider how to onboard, manage, maintain, and secure such business-critical physical assets as smart factory equipment, automated cooking robots, inspection drones, health monitors, and countless others. Because outages could be business- or life-threatening, devices in the evolving physical tech stack require the highest levels of system uptime and resilience. And a fresh approach to device governance and oversight may be needed to help IT manage unfamiliar standards, regulatory bodies, and liability and ethics concerns. Finally, CIOs likely will need to consider how to procure needed technology talent and reskill the current workforce.

Trends in action

Within IP&C, companies are experimenting with Internet of Things (IoT) to identify opportunities to improve their customer experience, asset utilization, and operations and maintenance processes. Companies are utilizing drones, computer vision, and video cameras paired with resilient IT infrastructures. This highlights the ways in which advanced machine learning is being paired with physical infrastructure, fueling a rollout of previously impractical applications. This new physical infrastructure also demands unique new skills along with greater uptime and reliability.

Readiness: ●●○
 Relevance: ●●●○



Field notes from the future

A bold, technologically sophisticated future awaits—this we know. Yet from our vantage point today, we cannot discern precisely what this bold future looks like or how we can prosper in it. How can we plan for events that are likely, yet vaguely defined? In *Field notes from the future*, our final chapter of *Tech Trends 2022*, we examine the trajectories of three technologies that will likely dominate the digital landscape a decade or more from now: quantum, exponential intelligence, and ambient experience. Though currently nascent, each of these technologies has captured the imagination of researchers and the investment dollars of venture capitalists, startups, and enterprises who all agree: Something interesting will happen, and with diligence and groundwork planning, we can be ready to act when the future finally arrives.

Trends in action

The technology of the next decade is already starting to arrive. Ensuring that future planning and strategies are implemented with the future's technologies in mind is an important factor in creating future-proof designs and approaches. Don't be backed into a corner by making yesteryear's decisions tomorrow.

Readiness: N/A

Relevance: N/A

Learn more

Follow

-  @DeloitteGov
-  @DeloitteOnTech

Related reports

Tech Trends 2022
www.Deloitte.com/us/techtrends

Authors

For questions regarding the Tech Trends 2022 IP&C perspective, please contact:

Brian Umbenhauer
Principal | Industrial Products and Construction Leader
Deloitte Consulting LLP
bumbenhauer@deloitte.com | +1 312 486 4301

Michael Schlotterbeck
Senior Manager | Industrial Products & Construction
Deloitte Consulting LLP
mschlotterbeck@deloitte.com | +1 646 856 2236

Contributors

Clay Moran
Grace Wagner

This article contains general information only and Deloitte is not, by means of this article, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This article is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this article.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the "Deloitte" name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see www.deloitte.com/about to learn more about our global network of member firms.