A manufacturing perspective: Tech Trends 2018

The symphonic enterprise

Strategic and operational transformations within industrial products, aerospace, and construction enterprises are being shaped by eight key technology trends according to Deloitte's 2018 Tech Trends report. The pace of technology adoption continues to accelerate, and IT organizations and business leaders should work together to create a symphonic enterprise.

This perspective draws on Deloitte's 2018 Tech Trends report, an annual report that examines the powerful technology forces that are remaking our world. It sheds light on the impact on manufacturing and construction of eight technologies, from data analytics and application programming interfaces (APIs) to blockchain, artificial intelligence, and digital reality. The report reflects the industry's anticipated adoption level of these trends by assigning each a relevance and readiness score from 1 (low) to 5 (high), which is based on our research of exponential technologies in manufacturing, as well as input from our consulting leaders. While the companies within these industries are diverse and likely varied in their adoption of these eight technologies, the overall patterns are reflected in these scores. Real-world examples and key considerations are included for organizations to contemplate as they determine how these technologies may fit into their strategy and operations.

For more information or to view the full report, visit www.deloitte.com/insights/techtrends.

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5 University of Southern California Information Sciences Institute, “Experimental and theoretical adiabatic quantum computation,” [no date], https://www.isi.edu/research_groups/quantum_computing/home.

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Endnotes

11. For more information or to view the full report, visit www.deloitte.com/insights/techtrends.

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Reengineering digital innovation

Because of its inextricable link to business strategy, the pace at which innovation occurs is a major factor in the success of digital initiatives. As technology moves at a breakneck speed, transforming into engines for digital business, it is essential to ensure that innovation increases, IT organizations should be able to develop their infrastructure and the architecture while also shifting the way they deliver technology capabilities. This combined top-down, bottom-up approach can create the velocity necessary to redefine IT. Any one area where manufacturers can apply this approach in the supply chain, where many companies are creating a digital supply network (DSN) that brings together legacy systems to generate valuable insights.

Getting started

- Identify automation opportunities. Almost all traditional IT operations are candidates for automation, which can help workers handle increasingly complex workflows.
- Break down silos in IT. Consider reconceiving IT workers into multi-skill, results-oriented teams and looking for opportunities to share resources and acquire new skills.
- Readiness
- Relevance

Digital reality

The application of augmented reality (AR), virtual reality (VR), mixed reality (MR), and immersive experiences to the industrial products and construction industries is quickly moving beyond pilot into production. Many companies are ramping up development of digital reality, taking it into consideration new integration, cloud deployment, connectivity, Internet of Things (IoT), and access.

Getting started

- Learn more about the technology. Take the opportunity to build a current IT resources learning the language of AR, VR, MR, 360°, and immersive technologies to properly evaluate devices, ecosystem partners, and applications.
- See examples. Explore use-cases within the sector as well as identify what business goals companies in adjacent sectors are pursuing with their digital reality initiatives.
- Readiness
- Relevance

Trends in action

An engineering and construction firm using robot process automation (RPA) to dramatically improve billing operations. Implementing a RPA solution enabled the company to streamline invoice creation from 4.5 hours to 11 minutes, and freed 20 full-time employees to focus on other customer billing issues.

Getting started

- Focus on those aligned with strategic objectives or those that have disruptive potential, and get priorities on your application programming interfaces (APIs) and services. The next phase will likely involve linking APIs across different industries to share digital assets seamlessly, including financial, supply chain, and service monitoring.
- Readiness
- Relevance

Blockchain to blockchains

The advancement of blockchain initiatives in industrial products and construction continues as industry segments identify use cases and expand within different approaches to scalability and scope. The next phase will likely involve linking APIs across different industries to share digital assets seamlessly, including financial, supply chain, and service monitoring.

Getting started

- Find the key use case for your company. Focus on those aligned with strategic objectives or those that have disruptive potential, and get priorities on your application programming interfaces (APIs) and services. The next phase will likely involve linking APIs across different industries to share digital assets seamlessly, including financial, supply chain, and service monitoring.

Getting started

-摆在前面的公司已经利用区块链技术在工业 литigation and applications and a use case across the company’s businesses for tracking trade, contracts, and renewable energy, as well as applications in additive manufacturing.

API imperative

The focus of application programming interfaces (APIs) has moved beyond the corporate walls as many companies seek to extend application integration beyond the enterprise, and modularly out to customers, partners, and ecosystems. Many companies are beginning to see the value of APIs based on what they’re actively consuming.

Getting started

- Embrace an API arbitrage model. Let demand drive your ecosystem, and let project teams and developers determine the value of APIs based on what they’re actively consuming.
- Determine where microservices can drive value. Look for opportunities to transition to microservices if you have a large, complex code base or require large teams to develop an application.

Trends in action

A global industrial manufacturing conglomerate launched an API program to create an ecosystem of third parties that builds tools and utilities to integrate systems. The company has employed API management to provide API security, scale, and analytics for its API program.

Getting started

- Explore and experiment. Look to how others in your industry are approaching exponentially, then prioritize use cases, develop basic business cases, keep on top of developments.
- Be programmatic in your approach. Innovation is more about programmatically disciplined effort, carried out over time in a well-considered portfolio approach.

Exponential technology watch list

The pace of technology innovation continues to increase, driving companies to pay close attention to emerging technology forces that could manifest in the next three to five years. Companies should consider developing disciplined innovation capabilities for technologies like artificial general intelligence (AGI) and quantum cryptography to explore and plan the impact these technologies will have on their businesses.

Getting started

- Readiness
- Relevance

Trends in action

While applications of quantum technology remain nascent, an aerospace company has partnered with the University of Southern California, home of D-Wave Systems, the world’s first commercial adiabatic quantum optimizer, to address real-world problems using the power of quantum computing, including research in the area of quantum cryptography.