

# Gartner: Top 10 strategic technology trends in 2020



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The year 2020 heralds another decade rich with disruptive technology trends. Some of these technologies are already commonplace, but the proliferation of new use cases and applications will see industry grappling with both benefits and opportunities. At Gartner, we predict that the key strategic [technology trends in 2020](#) will include hyperautomation, blockchain and artificial intelligence security, among others.

### 1. Automation 2020: Hyperautomation

Hyperautomation takes applications for task automation to the next level. It enables the application of advanced technologies, such as artificial intelligence (AI) and machine learning, to increasingly automate processes and augment human requirements.

In some cases, it can mean the creation of a digital twin of the organisation – allowing visualisation of how functions, processes and key performance indicators interact to drive value.

But as no single tool can replace humans, hyperautomation will involve a combination of elements. Such tools include [robotic process automation](#) and intelligent business management software.

## 2. Multiexperience is the new experience

From 2020 onward, multiexperience will see the traditional idea of computing evolve from a single point of interaction to include multisensory and multitouchpoint interfaces, such as wearables and advanced computer sensors. Over the coming decade, this trend will become what is known as ambient experience.

But multiexperience currently focuses on immersive experiences that use [augmented reality](#), [virtual reality](#), mixed reality, multichannel human-machine interfaces and sensing technologies.

## 3. Democracy, 2020 style

The democratisation of technology means providing people with easy access to technical or business expertise without extensive or expensive training. Already referred to as “citizen access”, this trend will focus on four key areas: application development, data and analytics, design, and knowledge.

Democratisation is expected to see the rise of citizen [data scientists](#), programmers and other forms of DIY technology engagement. For example, it could enable more people to generate data models without having the skills of a

data scientist. This would, in part, be made possible through AI-driven code generation.

#### 4. Augmentation gets human

The controversial trend of human augmentation focuses on the use of technology to enhance an individual's cognitive and physical experiences. It comes with a range of cultural and ethical implications.

For example, using CRISPR (clustered, regularly interspaced, short palindromic repeats) technologies to augment genes has significant ethical consequences. Physical augmentation changes an inherent physical capability by implanting or hosting a technology within or on the body.

Applications include the use of [wearables](#) to improve worker safety in the mining industry. In other industries, such as retail and travel, wearables could be used to increase worker productivity.

#### 5. Greater transparency and traceability

The evolution of technology is creating a trust crisis. Particularly as consumers become more aware of how their personal data is collected and used, organisations are increasingly recognising the liability of storing and gathering data. But many are also using AI and machine learning more to make decisions in place of humans.

This is a further cause of concern, which is driving the need for processes such as explainable AI and AI governance. This trend requires a focus on these key elements of trust: integrity, openness, accountability, competence and consistency. More legislation similar to the European Union's General Data Protection Regulation ([GDPR](#)) is likely to be enacted around the world in the coming years.

## 6. The empowered edge

The growing [edge computing](#) trend is based on the idea that keeping traffic local and distributed will reduce latency. This involves a topology where information processing and content collection and delivery are placed closer to the sources of the information.

The [empowered edge](#) employs the technology on the internet of things ([IoT](#)). This extends to the role of devices as the basis for smart spaces and moves key applications and services closer to the people and devices that use them. By 2023, there could be more than 20 times as many smart devices at the edge of the network as in conventional IT roles.

## 7. The distributed cloud

The [distributed cloud](#) refers to the dispersal of public cloud services to locations outside the cloud provider's physical datacentres, while still in the control of the

provider. In the distributed cloud, the provider is responsible for all aspects of cloud service architecture, delivery, operations, governance and updates.

The evolution from centralised public cloud to distributed public cloud ushers in a new era of cloud computing. The distributed cloud allows datacentres to be located anywhere. This solves both technical and regulatory issues, such as latency and data sovereignty. It also offers the combined benefits of a public cloud service and a private, local cloud.

## 8. Even more autonomous things

Autonomous things, which include [drones](#), robots, ships and appliances, exploit AI to perform tasks traditionally undertaken by humans. This technology operates on a spectrum of intelligence ranging from semiautonomous to fully autonomous and across a variety of environments including air, sea and land.

While currently, autonomous things mainly exist in controlled environments, such as warehouses, they will evolve to include open public spaces. Autonomous things will also move from standalone to collaborative swarms – such as the drone swarms used during the Winter Olympic Games in 2018.

## 9. Towards practical blockchain

Enterprise blockchain today takes a practical approach and implements only some of the elements of a complete [blockchain](#). Everyone with permissioned

access sees the same information, and integration is simplified by having a single shared blockchain.

In the future, true blockchain or “blockchain complete” will have the potential to transform industries, and eventually the economy, as complementary technologies such as AI and the IoT begin to integrate alongside blockchain.

This expands the type of participants to include machines, which will be able to exchange a variety of assets. For example, a car would be able to negotiate insurance prices directly with the insurance company based on data gathered by its sensors. Moreover, blockchain will be fully scalable by 2023.

#### **10. Greater AI security**

Evolving technologies such as hyperautomation offer transformational opportunities in the business world. However, they also create security vulnerabilities through potential new points of attack. Security teams must address these challenges and be aware of how AI will impact the security space.

Future AI security will have three key perspectives: firstly, protecting AI-powered systems, securing AI training data, and training pipelines and machine learning models; secondly, leveraging AI to enhance security defence, and using machine learning to understand patterns, uncover attacks and automate parts of

the cybersecurity processes; thirdy, anticipating nefarious use of AI by attackers  
– identifying attacks and defending against them.



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