

# Top 10 Strategic Technology Trends for 2020

“Evolving technologies such as hyperautomation and autonomous things offer transformational opportunities in the business world.”

David Cearley, Distinguished VP Analyst, Gartner Research & Advisory

This year's trends are structured around the idea of “people-centric and smart spaces” and how these technologies will affect customers and employees and the places that they live in.



## 1. Hyperautomation

Hyperautomation deals with the application of advanced technologies, including artificial intelligence (AI) and machine learning (ML), to increasingly automate processes and augment humans. Hyperautomation extends across a range of tools that can be automated, but also refers to the sophistication of the automation (i.e., discover, analyze, design, automate, measure, monitor, reassess.)

As no single tool can replace humans, hyperautomation today involves a combination of tools, including robotic process automation (RPA), intelligent business management software (iBPMS) and AI, with a goal of increasingly AI-driven decision making.



## 2. Multiexperience

Multiexperience replaces technology-literate people with people-literate technology. In this trend, the traditional idea of a computer evolves from a single point of interaction to include multisensory and multitouchpoint interfaces like wearables and advanced computer sensors.

Through 2028, the user experience will undergo a significant shift in how users perceive the digital world and how they interact with it. Conversational platforms are changing the way in which people interact with the digital world. Virtual reality (VR), augmented reality (AR) and mixed reality (MR) are changing the way in which people perceive the digital world.

This combined shift in both perception and interaction models leads to the future multisensory and multitouchpoint experience.



## 3. Democratization

Democratization is focused on providing people with access to technical expertise (e.g., ML, application development) or business domain expertise (e.g., sales process, economic analysis) via a radically simplified experience and without requiring extensive and costly training.

The notion of “citizen access” (e.g., citizen data scientists, citizen integrators) as well as the evolution of citizen development and no-code models are examples of democratization.

Development of expert systems or virtual assistants based on AI and decision models is another important aspect of democratization. These systems provide advice or take actions on behalf of people to extend their knowledge or expertise beyond their experience or training.



## 4. Human augmentation

Human augmentation explores how technology can be used to deliver cognitive and physical improvements as an integral part of the human experience. Instead of computers and applications being something outside the normal human experience, they become a natural — and sometimes necessary — part of the day-to-day human experience.

Human augmentation will be a primary means by which individuals interact with each other and with the smart spaces that surround them. Business leaders and IT leaders should plan for how their organizations will adopt, exploit and adapt to the coming changes. As consumers and employees integrate more of their lives into one intelligence-amplifying human augmentation, organizations will have to address issues of data transparency, privacy and autonomy



## 5. Transparency and traceability

Digital ethics and privacy are growing concerns for individuals, organizations and governments. Consumers are increasingly aware their personal information is valuable and are demanding control. Organizations recognize the increasing risk of securing and managing personal data, and governments are implementing strict legislation to ensure they do.

Artificial Intelligence and the use of ML models to make autonomous decisions raises a new level of concern, with digital ethics driving the need for explainable AI and the assurance that the AI system is operating in an ethical and fair manner. Transparency and traceability are critical elements to support these digital ethics and privacy needs.



## 6. The empowered edge

Edge computing describes a computing topology in which information processing and content collection and delivery are placed closer to the sources, repositories and consumers of this information. Edge computing draws from the concepts of distributed processing. It tries to keep the traffic and processing local to reduce latency, exploit the capabilities of the edge and enable greater autonomy at the edge.

The edge, near edge and far edge connect to centralized data centers and cloud services. Edge computing solves many pressing issues, such as high bandwidth costs and unacceptable latency. The edge computing topology will enable the specifics of digital business and IT solutions uniquely well in the near future.



## 7. The distributed cloud

A distributed cloud refers to the distribution of public cloud services to different locations outside the cloud providers' data centers, while the originating public cloud provider assumes responsibility for the operation, governance, maintenance and updates. This represents a significant shift from the centralized model of most public cloud services and will lead to a new era in cloud computing.

Distributed cloud can deliver major improvements in performance and reduce the risk of global network-related outages, as well as support, most occasionally connected scenarios. By 2024, most cloud services platforms will provide at least some services that execute at the point of need.



## 8. Autonomous things

Autonomous things are physical devices that use AI to automate functions previously performed by humans. The most recognizable forms of autonomous things are robots, drones, autonomous vehicles/ships and appliances. AI-powered IoT elements, such as industrial equipment and consumer appliances, are also a type of autonomous thing.

As the technology capability improves, regulation permits and social acceptance grows, autonomous things will increasingly be deployed in uncontrolled public spaces.



## 9. Practical blockchain

Blockchain has the potential to reshape industries by enabling trust, providing transparency and enabling value exchange across business ecosystems — potentially lowering costs, reducing transaction settlement times and improving cash flow.

By 2023, blockchain will be scalable technically, and will support trusted private transactions with the necessary data confidentiality. These developments are being introduced in public blockchains first. Over time, permissioned blockchains will integrate with public blockchains.



## 10. AI security

Over the next five years AI, and especially ML, will be applied to augment human decision making across a broad set of use cases. At the same time, there will be a massive increase in potential points of attack with IoT, cloud computing, microservices and highly connected systems in smart spaces.

While this creates great opportunities to enable hyperautomation and leverage autonomous things to deliver business transformation, it creates significant new challenges for the security team and risk leaders.

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