

Newsroom

Press Releases

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Gartner Identifies Five Emerging Technology Trends That Will Blur the Lines Between Human and Machine

2018 Emerging Technologies Hype Cycle Earns Insights From More Than 2,000 Technologies

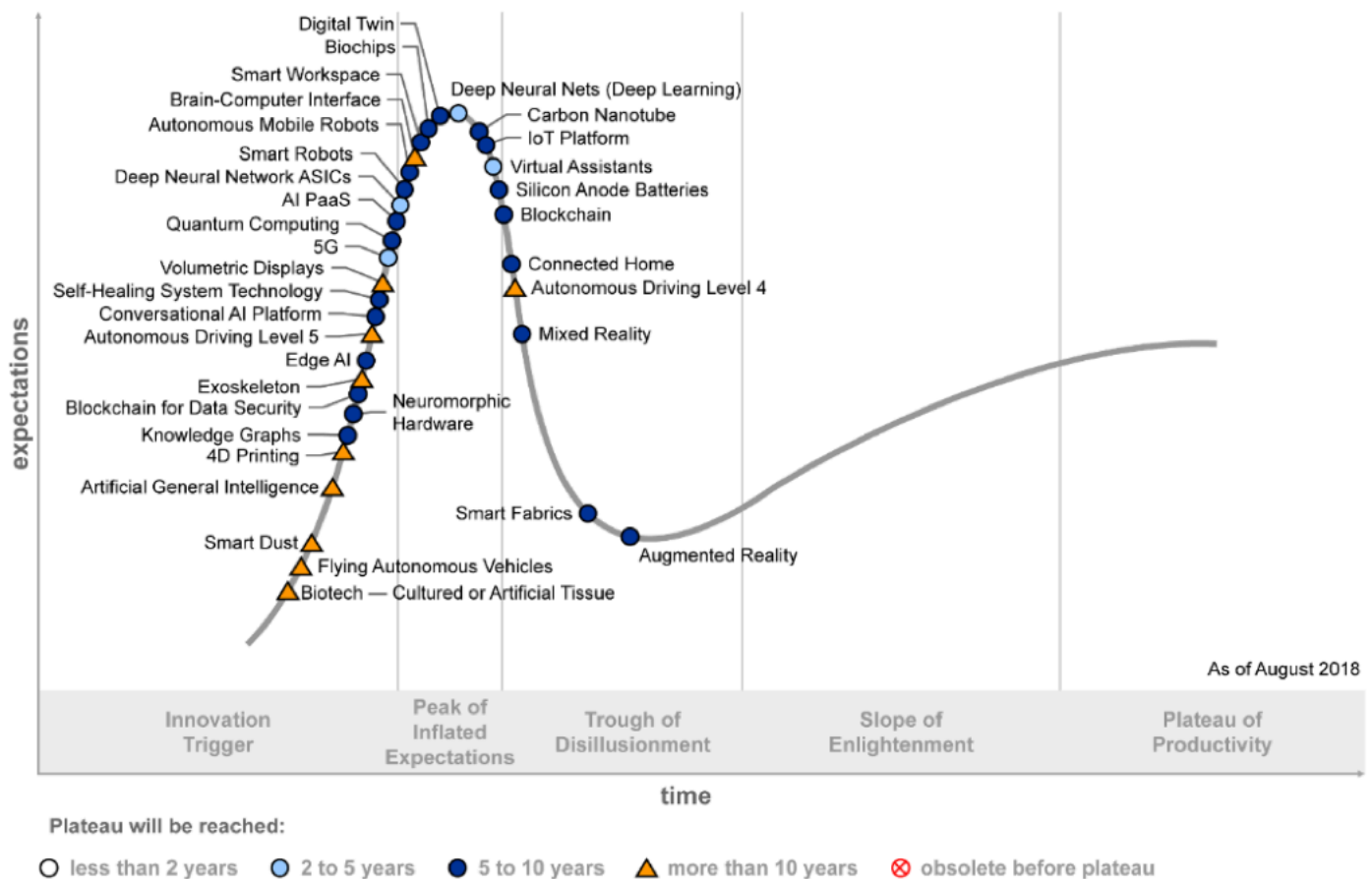
The 35 must-watch technologies represented on the Gartner Inc. Hype Cycle for Emerging Technologies, 2018 (<https://www.gartner.com/document/3885468>) revealed five distinct emerging technology trends that will blur the lines between humans and machines. Emerging technologies, such as artificial intelligence (<https://www.gartner.com/smarterwithgartner/the-cio-guide-to-artificial-intelligence/>) (AI), play a critical role in enabling companies to be ubiquitous, always available, and connected to business ecosystems to survive in the near future.

“Business and technology leaders will continue to face rapidly accelerating technology innovation that will profoundly impact the way they engage with their workforce, collaborate with their partners, and create products and services for their customers,” said Mike J. Walker (<https://www.gartner.com/analyst/49943/Mike-J.-Walker>), research vice president at Gartner. “CIOs and technology leaders should always be scanning the market along with assessing and piloting emerging technologies to identify new business opportunities with high impact potential and strategic relevance for their business.”

The Hype Cycle for Emerging Technologies report is the longest-running annual Gartner Hype Cycle (<https://www.gartner.com/en/research/methodologies/gartner-hype-cycle>), providing a cross-industry perspective on the technologies and trends that business strategists, chief innovation officers, R&D leaders, entrepreneurs, global market developers and emerging-technology teams should consider in developing emerging-technology portfolios.

The Hype Cycle for Emerging Technologies is unique among most Gartner Hype Cycles because it garners insights from more than 2,000 technologies into a succinct set of 35 emerging technologies and trends. This Hype Cycle specifically focuses on the set of technologies that is showing promise in delivering a high degree of competitive advantage over the next five to 10 years (see Figure 1).

Figure 1. Hype Cycle for Emerging Technologies, 2018



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Source: Gartner (August 2018)

Five Emerging Technology Trends

Democratized AI

AI technologies (<https://www.gartner.com/smarterwithgartner/how-to-get-artificial-intelligence-right/>) will be virtually everywhere over the next 10 years. While these technologies enable early adopters to adapt to new situations and solve problems that have not been encountered previously, these technologies will become available to the masses — democratized. Movements and trends like cloud computing, the “maker” community and open source will eventually propel AI into everyone’s hands.

This trend is enabled by the following technologies: AI Platform as a Service (PaaS), Artificial General Intelligence, Autonomous Driving (Levels 4 and 5), Autonomous Mobile Robots, Conversational AI Platform, Deep Neural Nets, Flying Autonomous Vehicles (<https://www.gartner.com/it-glossary/autonomous-vehicles/>), Smart Robots, and Virtual Assistants (<https://www.gartner.com/smarterwithgartner/how-to-listen-to-the-voice-of-things-in-the-iot/>).

“Technologies representing democratized AI populate three out of five sections on the Hype Cycle, and some of them, such as deep neural nets and virtual assistants, will reach mainstream adoption in the next two to five years,” said Mr. Walker. “Other emerging technologies of that category, such as smart robots or AI PaaS, are also moving rapidly through the Hype Cycle approaching the peak and will soon have crossed it.”

Digitalized Ecosystems

Emerging technologies require revolutionizing the enabling foundations that provide the volume of data needed, advanced compute power and ubiquity-enabling ecosystems. The shift from compartmentalized technical infrastructure to ecosystem-enabling platforms is laying the foundations for entirely new business models that are forming the bridge between humans and technology.

This trend is enabled by the following technologies: Blockchain (<https://www.gartner.com/smarterwithgartner/the-irrational-exuberance-that-is-blockchain/>), Blockchain for Data Security, Digital Twin (<https://www.gartner.com/smarterwithgartner/confront-key-challenges-to-boost-digital-twin-success/>), IoT Platform (<https://www.gartner.com/it-glossary/internet-of-things/>) and Knowledge Graphs.

“Digitalized ecosystem technologies are making their way to the Hype Cycle fast,” said Walker. “Blockchain (<https://www.gartner.com/smarterwithgartner/the-cios-guide-to-blockchain/>) and IoT platforms have crossed the peak by now, and we believe that they will reach maturity in the next five to 10 years, with digital twins and knowledge graphs on their heels.”

Do-It-Yourself Biohacking

Over the next decade, humanity will begin its “transhuman” era: Biology can then be hacked, depending on lifestyle, interests and health needs. Biohacking falls into four categories: technology augmentation, nutrigenomics, experimental biology and grinder biohacking. However, questions remain about how far society is prepared to accept these kinds of applications and what ethical issues they create.

This trend is enabled by the following technologies: Biochips (<https://www.gartner.com/it-glossary/biochips/>), Biotech — Cultured or Artificial Tissue, Brain-Computer Interface (<https://www.gartner.com/it-glossary/computer-brain-interface/>), Augmented Reality (<https://www.gartner.com/it-glossary/augmented-reality-ar/>), Mixed Reality and Smart Fabrics.

Emerging technologies in do-it-yourself biohacking are moving rapidly through the Hype Cycle. Mixed reality is making its way to the Trough of Disillusionment, and augmented reality almost reached the bottom. Those pioneers will be followed by biochips, which have just reached the peak and will have moved on to the plateau in five to 10 years.

Transparently Immersive Experiences

Technology will continue to become more human-centric to the point where it will introduce transparency between people, businesses and things. These technologies extend and enable smarter living, work, and other spaces we encounter.

This trend is enabled by the following technologies: 4D Printing, Connected Home (<https://www.gartner.com/it-glossary/connected-home/>), Edge AI, Self-Healing System Technology, Silicon Anode Batteries (<https://www.gartner.com/it-glossary/silicon-anode-batteries/>), Smart Dust, Smart Workspace (<https://www.gartner.com/smarterwithgartner/6-ways-the-workplace-will-change-in-the-next-10-years/>) and Volumetric Displays (<https://www.gartner.com/it-glossary/volumetric-displays/>).

“Emerging technologies representing transparently immersive experiences are mostly on their way to the peak or — in the case of silicon anode batteries — just crossed it,” said Mr. Walker. “The smart workspace (<https://www.gartner.com/smarterwithgartner/anticipate-and-exploit-future-work-trends/>) has moved along quite a bit and is about to peak in the near future.”

Ubiquitous Infrastructure

Infrastructure is no longer in the way of obtaining an organization’s goals. The advent and mass popularity of cloud computing and its many variations have enabled an always-on, available and limitless infrastructure compute environment.

This trend is enabled by the following technologies: 5G (<https://www.gartner.com/smarterwithgartner/will-5g-boost-the-adoption-of-smart-living/>), Carbon Nanotube (<https://www.gartner.com/it-glossary/nanotube/>), Deep Neural Network ASICs (<https://www.gartner.com/it-glossary/asic-application-specific-integrated-circuit/>), Neuromorphic Hardware and Quantum Computing (<https://www.gartner.com/smarterwithgartner/the-cios-guide-to-quantum-computing/>).

Technologies supporting ubiquitous infrastructure are on track to reach the peak and move fast along the Hype Cycle. 5G and deep neural network ASICs, in particular, are expected to reach the plateau in the next two to five years.

Gartner clients can read more in the report “Hype Cycle for Emerging Technologies, 2018.” (<https://www.gartner.com/document/3885468>) This research is part of the Gartner Trend Insight Report, “2018 Hype Cycles: Riding the Innovation Wave”. With profiles of technologies, services and disciplines spanning over 100 Hype Cycles, this Trend Insight Report is designed to help CIOs and IT leaders respond to the opportunities and threats affecting their businesses, take the lead in technology-enabled business innovations and help their organizations define an effective digital business strategy.

Additional analysis on emerging technologies will be presented during Gartner Symposium/ITxpo (<https://www.gartner.com/en/information-technology/cio-it-executives/cio-conferences>), the world’s most important gathering of CIOs and other senior IT executives. IT executives rely on these events to gain insight into how their organizations can use IT to overcome business challenges and improve operational efficiency. Follow news and updates from the events on Twitter using #GartnerSYM (<https://twitter.com/search?q=%23GartnerSYM&src=typd>).

Upcoming dates and locations for Gartner Symposium/ITxpo include:

3-6 June 2019: Toronto, Canada (<https://www.gartner.com/ca/symposium>)

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