

[Learn More at Gartner IT Symposium/Xpo 2019 on the Gold Coast, Australia, 28-31 October](#)

Gartner, Inc. today revealed its top strategic predictions for 2020 and beyond. Gartner's top predictions examine how the human condition is being challenged as technology creates varied and ever-changing expectations of humans. "Technology is changing the notion of what it means to be human," said Daryl Plummer, distinguished vice president and Gartner Fellow. "As workers and citizens see technology as an enhancement of their abilities, the human condition changes as well. CIOs in end-user organisations must understand the effects of the change and reset expectations for what technology means." Augmentations, decisions, emotions and companionship are the four aspects that are forging a new reality for human use of technology. "Beyond offering insights into some of the most critical areas of technology evolution, this year's predictions help us move beyond thinking about mere notions of technology adoption and draw us more deeply into issues surrounding what it means to be human in the digital world," said Mr. Plummer.

Gartner analysts presented the top 10 strategic predictions during Gartner IT Symposium/Xpo in Orlando, Florida today. By 2023, the number of people with disabilities employed will triple due to AI and emerging technologies, reducing barriers to access. "People with disabilities constitute an untapped pool of critically skilled talent," said Mr. Plummer. "Artificial intelligence (AI), augmented reality (AR), virtual reality (VR) and other emerging technologies have made work more accessible for employees with disabilities. For example, select restaurants are starting to pilot AI robotics technology that enables paralysed employees to control robotic waiters remotely. Organisations that actively employ people with disabilities will not only cultivate goodwill from their communities, but also see 89% higher retention rates, a 72% increase in employee productivity, and a 29% increase in profitability." By 2024, AI identification of emotions will influence more than half of the online advertisements you see. Artificial emotional intelligence (AEI) is the next frontier for AI development, especially for companies hoping to detect emotions in order to influence buying decisions. Twenty-eight percent of marketers ranked AI and machine learning (ML) among the top three technologies that will drive future marketing impact, and 87% of marketing organisations are currently pursuing some level of personalisation, according to Gartner. Computer vision, which allows AI to identify and interpret physical environments, is one of the key technologies used for emotion recognition and has been ranked by Gartner as one of the most important technologies in the next three to five years. "AEI makes it possible for both digital and physical experiences to become hyper personalized, beyond clicks and browsing history but actually on how customers feel in a specific purchasing moment. With the promise to measure and engage consumers based on something once thought to be intangible, this area of 'empathetic marketing' holds tremendous value for both brands and consumers when used within the proper privacy boundaries," said Mr. Plummer. Through 2023, 30% of IT organisations will extend BYOD policies with "bring your own enhancement" (BYOE) to address augmented humans in the workforce. The concept of augmented workers has gained traction in social media conversations in 2019 due to advancements in wearable technology. Wearables are driving workplace productivity and safety across most verticals, including automotive, oil and gas, retail and healthcare. Although wearables are only one example of physical augmentations available today, humans will look to additional physical augmentations that will enhance their personal lives and help do their jobs. "IT leaders certainly see these technologies as impactful, but it is the consumers' desire to physically enhance themselves that will drive the adoption of these technologies first," said Mr. Plummer. "Enterprises need to balance the control of these devices in their enterprises while also enabling users to use them for the benefit of the organisation. This means embracing and exploiting the benefits of physical human augmentation through the implementation of a BYOE strategy." By 2025, 50% of people with a smartphone but without a bank account will use a mobile-accessible cryptocurrency account. Major online marketplaces and social media platforms will start supporting cryptocurrency payments by the end of next year. At least half the globe's citizens who do not use a bank account will instead use these new mobile-enabled cryptocurrency account services offered by global digital platforms by 2025. This will open trading opportunities for buyers and sellers in growing economies like sub-Saharan Africa and Asia Pacific. By 2023, a self-regulating association for oversight of AI and machine learning designers will be established in at least four of the G7 countries. "Regulation of products as complex as AI and ML algorithms is no easy task. Consequences of algorithm failures at scale that occur within major societal functions are becoming more visible. For instance, AI-related failures in autonomous vehicles and aircraft have already killed people and attracted widespread attention in recent months," said Mr. Plummer. Public demand for protection from the consequences of malfunctioning algorithms will in turn produce pressure to assign legal liability for the harmful consequences of algorithm failure. The immediate impact of regulation of process will be to increase cycle times for AI and ML algorithm development and deployment. Enterprises can also expect to spend more for training and certification for practitioners and documentation of processes, as well as higher salaries for certified personnel. By 2023, 40% of professional workers will orchestrate their business application experiences and capabilities like they do their music streaming experience. The human desire to have a work environment that is similar to their personal environment continues to rise — one where they can assemble their own applications to meet job and personal requirements in a self-service fashion. The consumerization of technology and introduction of new applications have elevated the expectations of employees as to what is possible from their business applications. "Applications used to define our jobs. Nowadays, we are seeing organisations designing application experiences around the employee. For example, mobile and cloud technologies are freeing many workers from

coming into an office and instead supporting a 'work anywhere' environment, outpacing traditional application business models," said Mr. Plummer. "Similar to how humans customise their streaming experience, they can increasingly customise and engage with new application experiences." By 2023, up to 30% of world news and video content will be authenticated as real by blockchain countering deep fake technology. Fake news represents deliberate disinformation, such as propaganda that is presented to viewers as real news. Its rapid proliferation in recent years can be attributed to bot-controlled accounts on social media, attracting more viewers than authentic news and manipulating human intake of information. By 2021, at least 10 major news organizations will use blockchain to track and prove the authenticity of their published content to readers and consumers. Likewise, governments, technology giants and other entities are fighting back through industry groups and proposed regulations. "The IT organization must work with content production teams to establish and track the origin of enterprise-generated content using blockchain technology," said Mr. Plummer. Through 2021, digital transformation initiatives will take large traditional enterprises on average twice as long and cost twice as much as anticipated. Business leaders' expectations for revenue growth are unlikely to be realized from digital optimization strategies, due to the cost of technology modernization and the unanticipated costs of simplifying operational interdependencies. Such operational complexity also impedes the pace of change along with the degree of innovation and adaptability required to operate as a digital business. "In most traditional organisations, the gap between digital ambition and reality is large," said Mr. Plummer. "We expect CIOs' budget allocation for IT modernization to grow 7% year over year through 2021 to try to close that gap." By 2023, individual activities will be tracked digitally by an "Internet of Behaviour" to influence benefit and service eligibility for 40% of people worldwide. Through facial recognition, location tracking and big data, organisations are starting to monitor individual behaviour and link that behavior to other digital actions, like buying a train ticket. The Internet of Things (IoT) – where physical things are directed to do a certain thing based on a set of observed operating parameters relative to a desired set of operating parameters — is now being extended to people, known as the Internet of Behaviour (IoB). "With IoB, value judgements are applied to behavioural events to create a desired state of behaviour," said Mr. Plummer. "Within Western countries, the most notable example of a usage-based and behaviorally based business model is in property and casualty insurance. Over the long term, it is likely that almost everyone living in a modern society will be exposed to some form of IoB that melds with cultural and legal norms of our existing predigital societies." By 2024, the World Health Organization will identify online shopping as an addictive disorder, as millions abuse digital commerce and encounter financial stress. Consumer spending via digital commerce platforms will continue to grow over 10% year over year through 2022. The ease of online shopping will cause financial stress for millions of people, as online retailers increasingly use AI and personalization to effectively target consumers and prompt them to spend discretionary income that they do not have. The resulting debt and personal bankruptcies will cause depression and other health concerns caused by stress, which is capturing the attention of the WHO. "The side effects of technology that promote addictive behavior are not exclusive to consumers. CIOs must also consider the possibility of lost productivity among employees who put work aside for online shopping and other digital distractions. In addition, regulations in support of responsible online retail practices might force companies to provide warnings to prospective customers who are ready to make online purchases, similar to casinos or cigarette companies," said Mr. Plummer. About Gartner IT Symposium/Xpo Gartner IT Symposium/Xpo is the world's most important gathering of CIOs and senior IT executives, uniting a global community of CIOs with the tools and strategies to help them lead the next generation of IT and achieve business outcomes. More than 20,000 CIOs, senior business and IT executives worldwide will gather for the insights they need to ensure that their IT initiatives are key contributors to, and drivers of, their organization's success. 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