

An update to our 2020 Technology Vision trends

Driving Value and Values During COVID-19

JUNE 2020





TECHVISION 2020

When we published Accenture's 2020 Technology Vision report, COVID-19 was not yet a global pandemic. Now, everything has changed.

COVID-19 is the greatest challenge the world has faced in decades. It has transformed people's lives at unprecedented scale, impacted every industry, and co-opted enterprises' ambitions for growth and innovation. But the pandemic has not *slowed* innovation, it's amplifying it to historic levels.

The global challenge of COVID-19 has spurred a massive innovation effort from companies, governments, universities, and individuals.

Robots are disinfecting cities, cooking hospital food, and delivering packages. Smart devices are monitoring patients' health and collecting valuable health data. Human-AI collaboration is leaving the proof-of-concept stage and becoming a critical tool for scientists studying the virus. While much of the world is shut down or on hold, innovation is accelerating.

But in this rush to accelerate, it is also critical that enterprises think long-term. The immediate need for technology innovation is only half of the equation. In the Technology Vision, we explore how people's values are shifting, and digital-age technology models are increasingly out of sync with them.

This imbalance—when business value is misaligned with people's values—is what we call “tech-clash.” Businesses continuing down this road will face mounting resentment and distrust. It's a very different crisis, but COVID-19 does not overshadow the issue. It exacerbates it.

Consider how people have grown increasingly concerned about data privacy.

Now, the need for location and health data to track the spread of the virus has made this debate exponentially more complicated. The already growing chasm between people's values and enterprise value is being pulled in a third direction: the need to address a global public health issue. As enterprises invent solutions, focusing only on immediate goals could sabotage efforts to align with people in the long-term, amplifying tech-clash. The challenges we need to solve are now two-fold: overcoming business disruption due to COVID-19 and overcoming tech-clash.

The short-term challenge is to outmaneuver today's uncertainty.

This hurdle is not equal across industries or businesses. The pandemic has already revealed which enterprises were one disruption away from being upended and which have bet on agility and resilience and are now coming out ahead. One of today's realities is that technology is no longer an option—it is a requirement to connect employees, consumers, and business partners. Technology tools are enabling people to stay connected with friends and family and continue working. When technology fails, it leaves people cut off and frustrated.

The long-term challenge is setting businesses up to successfully rebuild and recover when the worst of the pandemic is over.

In the midst of crisis, people need technology solutions more urgently than ever. The enterprises that play their cards wisely, furthering their digital transformations and exploring how emerging technologies can meet people's new and evolving needs, will open up new opportunities for the future.

At this time, the full extent of COVID-19's impact on human life, the global economy, and enterprises is not yet known. But already, it has become an extraordinary catalyst for change. The need for innovation is greater than ever, driven by new challenges that are more disruptive than most have ever faced. The question for enterprises is: How fast can you act?

In light of this new reality and new imperative, we are revisiting our 2020 Technology Vision trends and exploring how they will impact people and business in the post-COVID world.

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The I in Experience

Helping people choose their own adventure

The I in Experience

In The I in Experience, we explore the evolution of digital experiences: black-box personalization, now common, leaves customers feeling out of the loop and out of control. Instead, organizations will need a new model for personalization—one that emphasizes customer agency.

This still rings true, but with a significant caveat: COVID-19 has transformed the role and importance of digital experiences in people's lives. Look at the acceleration of e-commerce. In April, Visa reported an 18 percent rise in digital commerce spending in the United States.¹ The company also said that 13 million Latin American Visa cardholders made

e-commerce transactions for the first time in Q1. It should be a big moment for platforms and personalized content. But traditional black box personalization is overly reliant on historic data—which is less helpful now that people's lives are so radically transformed. Businesses will need more agile engagement strategies, now and in the future.



In the short-term:

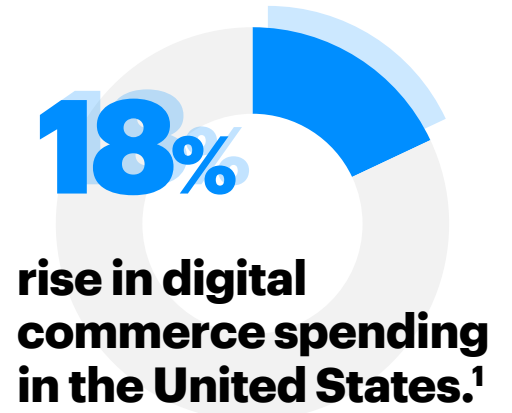
People are changing, and enterprises should update their personalization strategies to keep up.

Many companies are finding themselves suddenly out of touch. Leading up to COVID-19, e-commerce retailer ASOS had just launched a new accessory—decorative chainmail face masks—and joked that it was for festival season, flu season, and dealing with close-talkers.² In light of COVID-19 and rampant confusion and misinformation about face masks, the company chose to pull the product. Fast pivoting can help enterprises avoid or remedy these situations, but to do so at an individual level is a whole other beast. Businesses need a way to quickly update their understanding of individuals' wants and needs, and quickly retire information that is no longer valid. The enterprises that give people the agency to steer their own digital experiences will be the first to understand what their new wants and needs are.

Long-term:

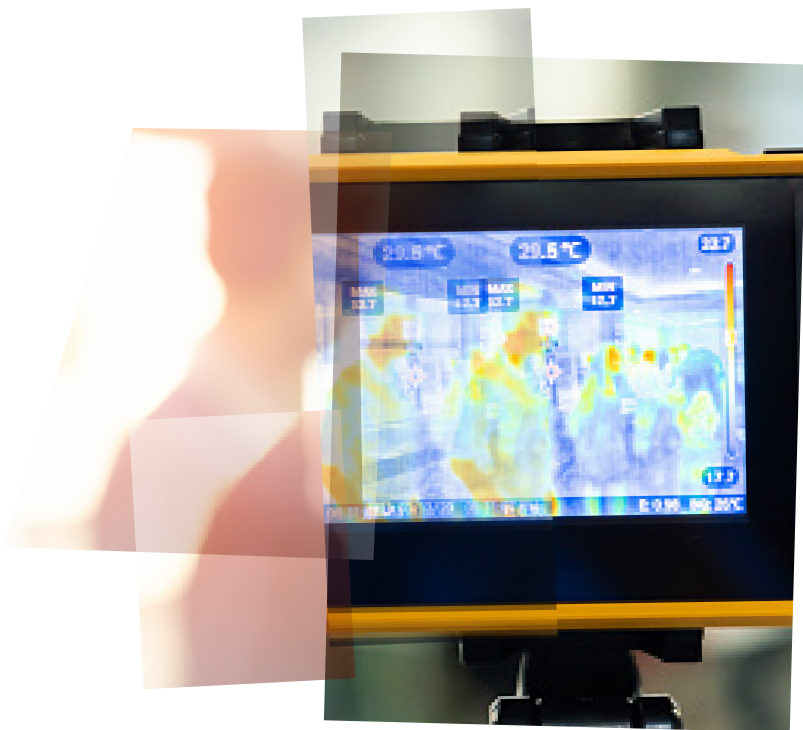
The purpose of a digital experience will be transformed.

Digital platforms and experiences are becoming many people's primary source of interaction. But most were designed to supplement, not replace, in-person experiences. Now, demand is soaring for truly shared digital experiences and digital communities, and leaders are rising to the occasion. Tasting Collective, a subscription dining club, has pivoted from in-person dinners, led by chefs in their own restaurants, to live-streamed cooking classes, led by chefs virtually.^{3,4} And HEY Bracelet and Bond Touch, both wearable bracelets, are attempting to virtualize human touch.^{5,6} Usually sold in pairs, the bracelets can lightly squeeze the wearer or light up and vibrate when activated by their counterpart. The need for virtual and extended reality experiences like these will continue to accelerate in the future, as businesses and consumers seek alternatives to in-person gatherings in a post-COVID world. The enterprises that start building personalized, interactive, and shared virtual communities today can carry that success far into the future.



AI and Me

Reimagine the business through human and AI collaboration



AI and Me

Our AI and Me trend explores how leading enterprises are fostering human-AI collaboration—bringing AI's capacity to identify limitless new possibilities together with people's ability to direct and refine ideas.

Before the pandemic, this was already top of mind in many industries. Our Technology Vision business survey found that 73 percent of organizations said they are piloting or adopting AI in one or more business units. But now, AI should be an even higher priority.

Consider how AI systems are powering chatbots that help health providers screen and triage patients, or how they are enabling the rapid reconfiguration of supply chains impacted by COVID-19.^{7,8} The benefits of humans and AI working together have never looked more promising than they do today.

In the short-term:

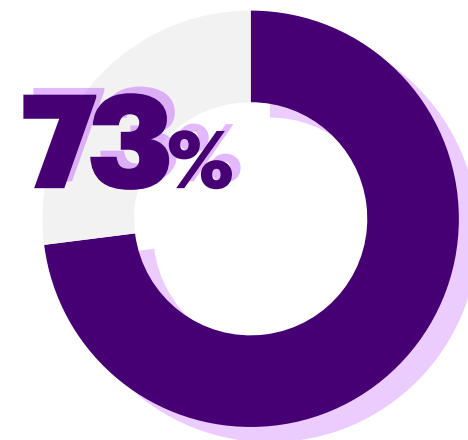
Use cases are clear: workforces desperately need augmentation.

With enormous challenges facing companies and the world at large, we need AI to help get work done—and not just in terms of automation. Human-AI collaboration is playing a role in the race to find a COVID-19 vaccine. Insilico Medicine, a Hong Kong-based biotech company, has repurposed its AI platform to help expedite the development of a COVID-19 drug, using machine learning to speed up the drug discovery process.⁹ And open source projects like the *COVID-19 Open Research Dataset* are efforts to pool data provided by humans so that AI systems can look for patterns.^{10,11} Outside the medical field, the pandemic is also introducing new constraints and challenges that AI systems can help overcome. Many businesses are working with reduced staff and new distancing rules and will face lingering economic impacts after the pandemic is over. AI can help people dream up new solutions and ideas to build a more flexible organization. It can ease the burden of operating in a post-COVID world by becoming the vehicle that enterprises use to pivot as situations change.

Long-term:

COVID-19 will let us see human-AI collaboration at its best, potentially easing people's concerns about the technology.

A 2019 global Accenture study on AI found that one of the top roadblocks to scaling the technology is lack of employee adoption.¹² But the pandemic has the potential to push us past this. AI tools are helping keep people healthy and informed, from virtual healthcare assistants to AI-powered thermal cameras for fever detection.¹³ They are also helping to keep essential businesses running. Innowatts is a startup using AI to manage surging electricity demands.¹⁴ With more people working from home and many businesses temporarily closed, energy consumption patterns are changing dramatically. Innowatts is helping clients use AI forecasting to learn from these short-term changes, make timely adjustments, and produce more accurate forecasts for today's situation. If enterprises play their cards right, investing in explainable AI and other tools that support and enable true human-AI partnership, workers and governments will get to see the technology at its best. Success today could permanently change the constraints surrounding AI deployment, and open new possibilities for businesses to reimagine their enterprise and workforce in the future.



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Robots in the Wild

Growing the enterprise's reach – and responsibility

Robots in the Wild

The word “robot” was coined 100 years ago in 1920, and now a century later, COVID-19 is pushing robots into the spotlight.¹⁵

No trend has escalated quite like Robots in the Wild. As more people stay home, and distancing becomes the new normal, robots are moving from controlled environments to uncontrolled environments and from select industries to every industry faster than we could have expected. They are more critical in business and society than ever, as businesses and governments search for new, “contact-less” solutions.



In the short-term:

Robots are taking on new responsibilities during the pandemic.

In many cases, they are joining our frontline workers, and the faster companies can deploy them, the more they will be able to help fight the virus. Chinese agriculture technology company XAG acted fast, repurposing its XPlanet drones and R80 robots to spray disinfectant in areas affected by the virus.¹⁶ In Thailand, engineering students at Chulalongkorn University repurposed “ninja” robots, originally designed to monitor stroke patients, to measure patients’ fevers and help doctors communicate with them remotely.¹⁷ And in Shenzhen, a startup called Youlbot built an antivirus robot in just two weeks. It has six ultraviolet bars that can sanitize surfaces, and an infrared camera to scan for fevers among patients and the public.¹⁸ Before the pandemic, robots were already becoming a driver of growth and value in many industries. Now they can help businesses do even more, while simultaneously demonstrating new use cases to regulators, workers, and the public. Just like with human-AI collaboration, the pandemic is showing robots in their best light, and the impact won’t be forgotten.

Long-term:

The entire robotics ecosystem will be accelerated.

The pandemic is strengthening the case for robotics and automation. In February, the American Chamber of Commerce Shanghai surveyed companies with manufacturing operations in China, finding that half believe their biggest immediate challenge is lack of staff.¹⁹ For many, this is a wake-up call, and the beginning of a long-term goal to increase robotics and automation to prevent future shutdowns. But the growing need for automation will boost more than just robotics. The entire ecosystem will accelerate. Consider how 4G networks grew in lockstep with the rising popularity of smartphones. Robots, IoT devices, and 5G will likely have a similar relationship, as many robot use cases will need increased data transfer rates and decreased latency.²⁰ Similarly, the need for human workers to maintain and control robots remotely will grow. New techniques and tools for teleoperation and VR training will be in high demand. While today’s robotics leaders are stepping up to the plate to fill new, pandemic-related roles, the ones truly thinking long term are also building the foundation of a more automated future. They are using this time to form partnerships, enable new capabilities, and work with governments to demonstrate new opportunities.

The Dilemma of Smart Things

Overcome the “beta burden”



The Dilemma of Smart Things

In The Dilemma of Smart Things, we talk about the changing nature of ownership.

As businesses increasingly retain some ownership and control over devices, even after customers purchase them, many people are starting to experience beta burden. They are frustrated by constant change in products they consider to be theirs. Now, COVID-19 is increasing our need for these smart and updateable products, which have great public health potential. But the beta burden could complicate things down the road.

Where repurposing smart devices or rapidly introducing new features may have upset people in the past, they are now much more welcome.

In the short-term:

Smart and updatable devices are becoming tools in the fight against COVID-19.

The beta burden isn't gone, but fighting the pandemic is temporarily taking precedence. Smart health devices can help identify symptoms, can monitor patients, and have troves of valuable health data that can help researchers and governments save lives. Smart thermometer company Kinsa, for instance, has a cache of users' temperature data, and created a US Health Weather Map which breaks the data down by county.²¹ Oura, a smart ring-maker, is partnering with UCSF to study whether its ring's temperature sensing capabilities can detect early signs of COVID-19.²² And outside of people's homes, many robotic devices have been rapidly updated or repurposed for COVID-19, enforcing safe distancing in public spaces, dispensing hand sanitizer, and more. Where repurposing smart devices or rapidly introducing new features and functionality may have upset people in the past, they are now much more welcome in the context of COVID-19.²³ In a sense, the challenges of the pandemic have brought organizations a reprieve, granting them extra leeway and creative liberty to use devices to their full extent.

Long-term:

The beta burden will return in force.

To help fight the virus, people are inviting more smart devices into their lives, and many are more willing to share health-related data.²⁴ But this won't last forever, and businesses must keep the threat of future backlash in mind. Device-driven efforts to combat COVID-19 are already sparking conversations about privacy, and many are worried that their data could be used against them in the future.²⁵ Google and Apple are working to ease these concerns.²⁶ The companies are building changes into Android and iOS to let certain government agency apps conduct contact tracing. The Bluetooth-based system will track the physical proximity of phones, alerting users who may have been exposed to the virus. However, they are doing this with strict privacy safeguards. The system is entirely opt-in, will not collect any location data, and will not collect any data at all from people who have not been diagnosed. Like Google and Apple, enterprises need to consider how they can introduce new features to their devices without overstepping. Regardless of intentions, the ones that fail to fully support these changes and updates will find that the benefits are short-lived.

Innovation DNA

Create an engine for continuous innovation



Innovation DNA

In our Innovation DNA trend, we explore three different areas of innovation: mature digital technologies, scientific advancements, and emerging DARQ technologies (distributed ledgers, artificial intelligence, extended reality, and quantum computing).

We argue that businesses will be set apart by the way they merge and combine seemingly separate strategies from all of these areas. This is still true, but COVID-19 has shifted the balance, accelerating DARQ technologies beyond expectations. Look at how the World Health Organization, Oracle, Microsoft, IBM, and others are collaborating on HACERA's MiPasa, a blockchain-based open data hub that aims to quickly identify COVID-19 carriers and hotspots.²⁷

Or look at Los Angeles' Cedars-Sinai hospital, which is using VR simulations to train doctors to treat infectious diseases.²⁸ Emerging technologies are gaining momentum and innovation timelines are speeding up.

In the short-term:

The pandemic is putting ecosystems through an innovation stress test.

COVID-19 is pushing companies to work together in new ways, exposing the possibilities of ecosystem-wide innovation. Consider how many restaurants have only stayed open because food delivery startups are connecting them to customers.²⁹ Cities are partnering with hotels to house homeless populations and stem the spread of the virus in crowded shelters.³⁰ And AppliedVR, a therapeutic VR company, is partnering with Red One Medical to offer VR stress management programs to health care workers on the frontlines.³¹ The pandemic is driving enterprises to consider and test many new partnerships and possibilities. Whether they are rolling out technology to keep the world running or working to prevent industry collapse, the partnerships, products, and services that enterprises are building today have the potential to last long after the crisis, defining business and technology for years to come.

Long-term:

The rules around innovation will never be the same.

For enterprises, failing to change with the world has always meant falling behind. But now, the world is changing faster than anyone expected, and businesses need to be more flexible than ever. Look at General Motors and Tesla, which are working to produce key medical equipment like ventilators.³² LVMH, which owns Louis Vuitton, is using its perfume and cosmetics production lines to make hand sanitizer, which it is giving to hospitals for free.³³ And Hedley & Bennett, Hanes, and other fashion and apparel brands are using their manufacturing operations to produce protective gear, such as masks.³⁴ Many leaders are weaving together new innovation strategies and forming new partnerships to help them pivot quickly and continuously during this crisis. They are creating agile and resilient innovation DNAs, and when the pandemic is over, will be positioned to meet new needs and build new capabilities faster than ever before. Reservations about being too experimental, and changing too fast, should be put to rest. We need bold innovation to get through this, and we will still need bold innovation when it passes.

**For enterprises,
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Our trends today

COVID-19 has made our Technology Vision trends more relevant and urgent than before. Opportunities that businesses expected to have years to prepare for are quickly approaching. Previously slow-growing pain points are being pushed to the surface.

To meet these challenges, organizations will need to innovate, invent, and redefine themselves. People are depending on technology more than ever. How quickly and responsibly enterprises deploy it matters more than ever, too. We are living in an unprecedented time, heading into a fast-changing future. Our trends can help you set your course.

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