

NEXT-GEN TECH TOPS IT'S WISHLIST

Which network technologies and initiatives best support innovation?
IT leaders have their say.

Technology decision-makers say that if cost were not a factor, they would embrace leading-edge technologies—including artificial intelligence (AI) and virtual reality (VR)—to spur innovation, according to a new survey.

After years of being viewed as obstacles to business transformation, IT teams are striving to eliminate organizational and data stovepipes. These hurdles limit IT's ability to fully harness all available information resources to drive innovation and new business opportunities. From the factory floor to marketing and human resources, enterprises are transforming processes to become more efficient, effective, and productive.

"I have good news for the CIO community: Senior executives at leading companies are getting the message that leveraging information and technology to improve competitive advantage changes the dynamics of the enterprise and must be at the core of every corporate strategy," **Phil Weinzimer**, president of Strategere Consulting, writes in a *CIO* article.

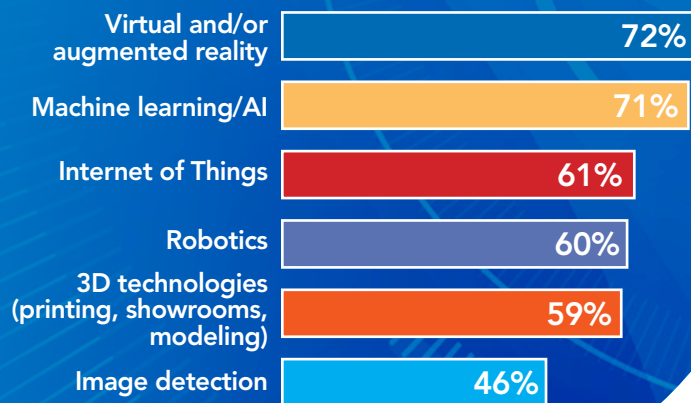
Over the past decade, businesses have looked for IT to be more collaborative with the enterprise and to function in a service-oriented capacity. But with the drive for digital transformation, many enterprises are counting on IT leaders to take a more proactive role in uncovering and exploiting new digital-enabled opportunities. As *CIO* senior writer **Thor Olavsrud** observes, "Digital transformation creates an opportunity for IT to move beyond the traditional service provider role and adopt a new strategic role as a driver of new digital capabilities critical to the business's future."

So it shouldn't be surprising that IT decision-makers surveyed by IDG Research Services are attuned to technologies and tools on the leading edge. Asked to designate which technologies best support innovation, they selected virtual reality (VR) and augmented reality (AR) as well as AI and machine learning, ahead of Internet of Things (IoT) and robotics.



VR and Machine Learning at Top of the List

Which of the following technologies best supports innovation?



SOURCE: IDG RESEARCH SERVICES, OCTOBER 2017

"Ongoing academic work in machine learning and virtual reality [has] been migrating to corporations and startups through open source initiatives and movement of skilled people through the academic, startup, and corporate workplaces," writes [Forbes](#) contributor Simon Solotko, a senior analyst with Tirias Research. "We are beginning to see how the mingling of these people and technologies might combine VR and machine learning to create a force more disruptive than either alone."

Thinking Big

It may well be that IT leaders are marching in sync with consumers, whose adoption of digital technologies has radically transformed traditional relationships with their vendors.

"Research from Sonar (J. Walter Thompson's proprietary research unit) reveals that consumers are interested in how AI will be used in retail: 70% of US millennials, and 62% of millennials in the UK, say they would appreciate a brand or retailer using AI technology to show more interesting products," writes Rachel Arthur in [Forbes](#).

Retail may be one of the hottest areas to exploit these technologies, as businesses try to engage with shoppers

by mining big data and rolling out VR and AR capabilities. For example, Ikea and Lowe's enable consumers to place virtual furniture in their homes and Sephora customers can view, virtually, how cosmetics would look on their face, reports [Nikki Gilliland](#) in her Econsultancy blog.

But those applications represent just the tip of the iceberg. Consider medicine: "For decades, increasingly sophisticated imaging techniques have allowed doctors to peer into the human body before they cut it open, reducing uncertainty and helping them prepare for complicated procedures. Now, advances in virtual reality may flip that dynamic on its head, allowing doctors to confront the unknown before they even enter the body," states a [Washington Post](#) article on the use of VR in a successful effort to save a pair of conjoined twins.

AR is also already being implemented on the factory floor for assembly, and manufacturers are using it for applications ranging from equipment maintenance to quality control, according to [Engineering.com](#).

Practical Considerations

Although they're eager to explore the possibilities of new technologies, respondents to the IDG survey said they see the most to gain from unlimited data storage and fast, powerful application performance—if cost were no object. And those hinge on their third top pick: unlimited bandwidth.

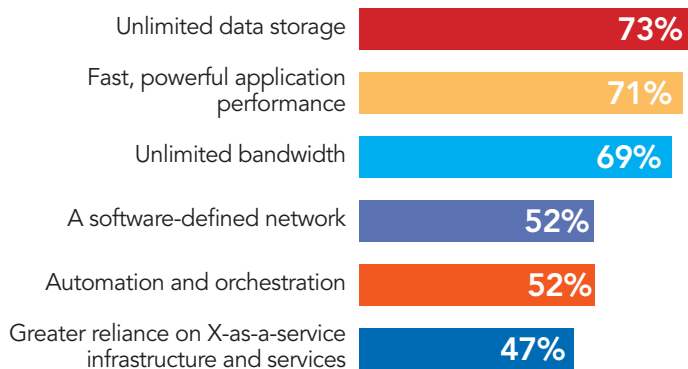
Bandwidth is a major constraint on enterprises struggling with legacy networks that are inflexible and costly to update.

72%

say virtual reality is the technology most supportive of innovation

Storage and Speed are Best Support for Innovation

If cost were not an issue, which of the following network-related initiatives would best support innovation?



SOURCE: IDG RESEARCH SERVICES, OCTOBER 2017

Innovative technologies in general require greater volumes of data and tremendous analytical capabilities. Getting and storing data are what enables the richer data streams that will make the application of advanced technologies practical.

Positioning the combination of VR and AI as the “next big thing,” Brian J. Dooley writes for [TWDI](#) that among the reasons this is now becoming possible are “increased availability and reduced cost of local processing and storage” and “expanding network bandwidth, allowing richer data streams.” And, of course, cloud-based AI.

Enterprises face several networking challenges as they seek to take advantage of innovative technologies to pursue new business opportunities. Responding to an [earlier survey](#) in this series, more than half of the participating IT decision-makers expressed concern that application performance will negatively affect customer satisfaction.

It’s one thing to link thousands or millions of Internet of Things (IoT) sensors if they’re transmitting only tiny streams of machine-to-machine messages, but it’s quite another if you want to employ machine learning

and AI to control machines and anticipate problems to avoid.

Road Maps to the Future

Asked to choose among half a dozen networking technologies, the IDG Research survey respondents gave top billing (68%) to 5G wireless as having the most potential to spur innovation. (See chart, page 4)

That tracks closely to findings reported by [Gartner](#). However, the research and consulting firm indicated there is confusion about the capabilities and availability of the planned high-speed wireless standard, with a majority of those surveyed indicating they planned to use 5G mainly to drive IoT communications. But Gartner research director Sylvain Fabre said that even fully implemented, 5G would be suitable for just a small subset of IoT use cases.

The 10Gbps speed potential of 5G may be stoking dreams that wireless can finally replace cabling on a large scale, but that’s unlikely to be the case. 5G is coming quickly, with trials under way even as the standard is still being finalized, but it’s not likely to be as ubiquitous as current wireless technologies. “Because 5G’s high frequencies have correspondingly low wavelengths, they have difficulty penetrating solid objects like walls, windows, and even trees,” writes *Digital Trends* contributor [Kyle Wiggers](#). “The near-term result will be ‘pockets’ of 5G deployed in heavily trafficked areas—think public parks, coffee shops, and airports.”

Next on the picklist in the IDG Research survey is network functions virtualization (NFV), at 56%, and the closely

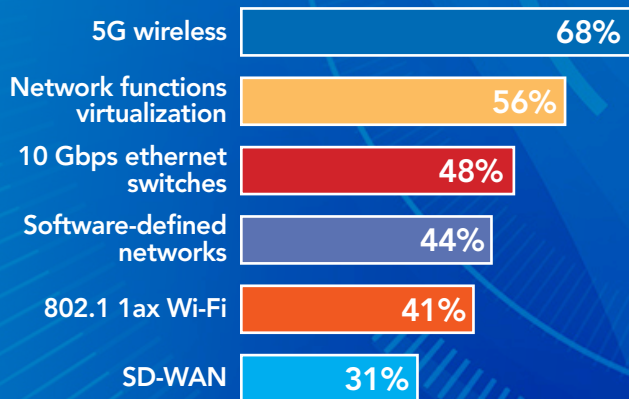
73%

of IT leaders prefer
unlimited data
storage as a support
for innovation



5G Wireless considered best networking for innovation

What networking technologies do you believe will best support innovation?



SOURCE: IDG RESEARCH SERVICES, OCTOBER 2017

related software-defined wide area networking (SD-WAN) was quite a bit behind, at 31%.

Jeffrey Lewis, vice president of Data Product Management with Comcast Business, says that this disparity is a good indication that many IT decision-makers don't really have a handle on SD-WAN. "It's a new emerging technology that came to market as an equipment-first solution, so not a lot of carriers have offered it yet."

Comcast took a big step in that direction recently, with its **announcement of Comcast Business SD-WAN** on its new carrier-grade ActiveCoreSM software-defined networking (SDN) platform, which is already commercially available nationwide. Comcast Business is offering SD-WAN together with its DOCSIS 3.1 infrastructure to provide gigabit speeds for branch locations, positioning the technology as a powerful, scalable alternative to multiprotocol label switching (MPLS) running over T1 lines.

Paving the Way

Many enterprises are dependent on MPLS, which can't keep up with the realities of today's digital business, where scalability, flexibility, and affordability are prized.

But that doesn't mean that they have to stand pat, wistfully watching others innovate their way to market leadership.

Although IT decision-makers can aspire to deploy AR, VR, and AI, they won't be able to get there unless they can affordably ramp up to the needed bandwidth. "I think too many enterprises are living within the constraints of what their network offers them today," Lewis asserts. "They are used to managing the network according to the budgets and the apps they have today. They don't look at other transport options, because they don't think they can afford it."

The rollout of SDN and SD-WAN services, however, does provide flexibility, scalability, and much greater control over pricing than enterprises have been able to enjoy in the past. "Businesses that have incorporated SD-WAN into their network strategies are finding that it is a viable and cost-effective solution for meeting the escalating connectivity demands of increased branch dispersion and growing dependence on cloud-based applications," says Lewis.

With SD-WAN, all branch and remote sites can be connected through a reliable, scalable, and secure network that allows for more flexibility and control. Dreams of innovation will remain dreams unless enterprises update legacy networks to take advantage of new technologies that require high bandwidth and optimal application performance. SD-WAN is a critical starting point that paves the way for the future.