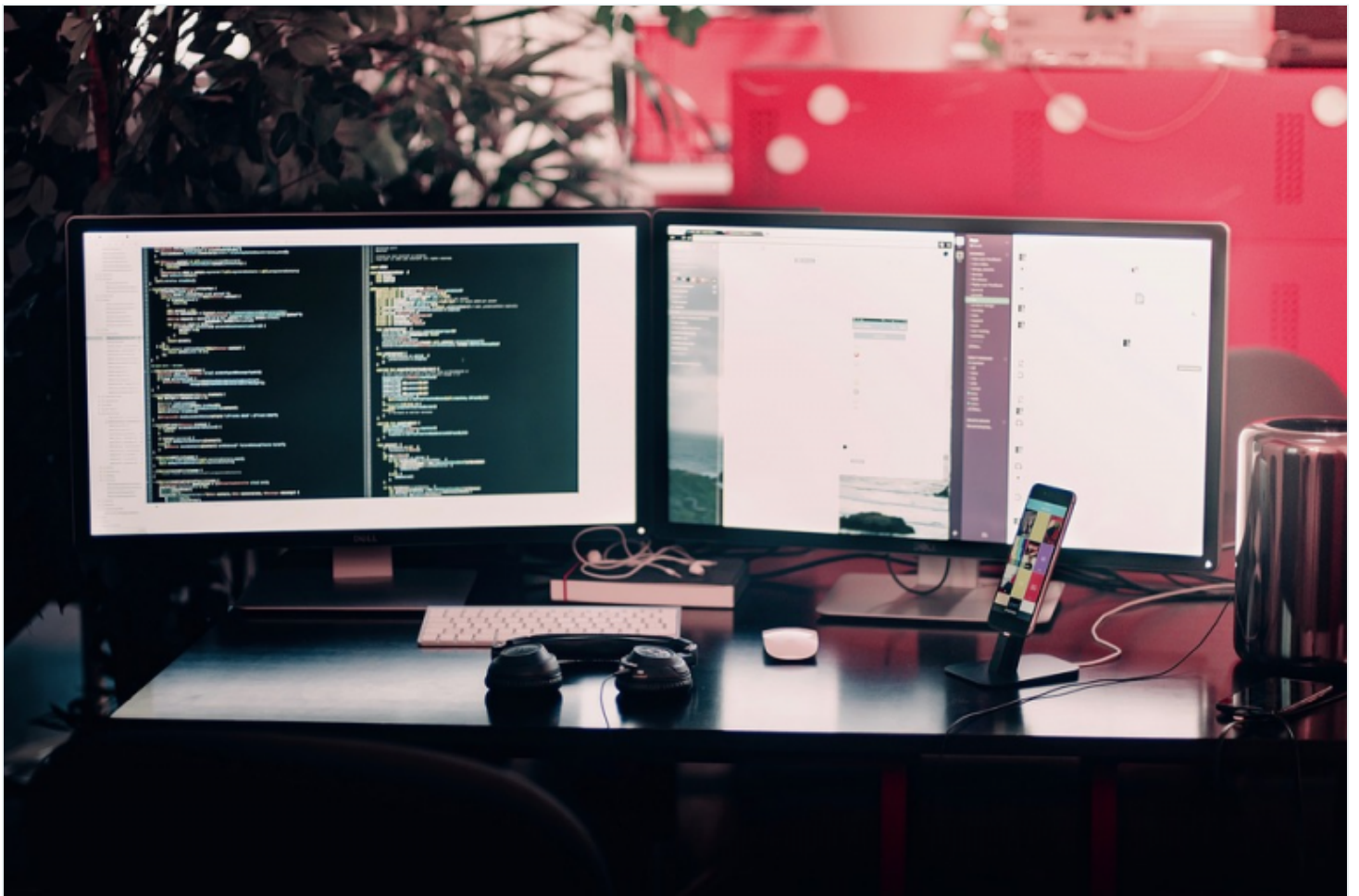


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through Friday in Las Vegas, may provide a clue when it serves up a first look at the hot technology trends for the year.

Jan. 06, 2020



Some technology trends for the New Year are easy to predict, such as the continuing hype around faster, more reliable 5G cellular networks.

Others, however, are harder to forecast. What new artificial intelligence service will blossom to become the next Amazon Alexa or Google Home? Can self-driving car technology take a meaningful step forward?

CES, the sprawling consumer electronics trade show that opens Tuesday and runs

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“The technology trends that are driving a lot of what is happening at the show is the rollout of 5G as well as artificial intelligence — be it in transportation, health care and a variety of other industries,” said Karen Chupka, executive vice president of CES for the Consumer Technology Association, which puts on the show. “Those two trends are showing up in almost all categories across the show.”

CES is expected to bring 170,000 attendees to the Las Vegas Convention Center and nearby venues — 60,000 of whom come from outside the U.S. Some 4,500 exhibitors will take over 2.9 million square feet for the show.

It is the world's biggest circus tent for consumer electronics, where all kinds of interesting technologies and cool gadgets vie for attention. About 40 San Diego area companies will exhibit, including cellular technology giant Qualcomm, Rancho Bernardo's Sony Electronics, gaming/e-sports outfit Turtle Beach Corp., mobile hotspot maker Inseego, and mobile health records provider Humetrix.

Over the course of the show, CES spotlights hot button issues in tech. This year it's privacy. Apple, which hasn't directly participated in CES for more than 20 years, has made privacy a focal point of its marketing. On Tuesday, Apple's Senior Director of Global Privacy, Jane Horvath, is scheduled to join Facebook Chief Privacy Officer Erin Eagan, U.S. Federal Trade Commissioner Rebecca Slaughter and others in a roundtable discussion on what consumers can expect in terms of privacy with their electronics.

Here's a look at some additional trends expected to be showcased at the show.

8K, streaming and OLED

TVs are among the most eye-catching products at CES. This year, a top story line will be whether manufacturers try to push super high resolution 8K televisions into the

mainstream market.

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For now, there is very little that can be viewed in 8K, so TV makers would be trying to convince consumers to upgrade based on 8K content coming sometime down the road, said Gagnon.

Another thing to watch is how the popularity of streaming services such as Netflix, Hulu and Disney-Plus plays out for TV makers.

“Streaming services are one of the most important reasons why people buy new TVs,” said Gagnon. “If you have a six- or seven-year-old smart TV, it might not necessarily work with the new streaming services. So a lot of people are upgrading to get access.”

In addition, 2020 could be a pivotal year for OLED TVs, which serve up very crisp picture quality on ultra-thin screens.

OLED TVs remain expensive, especially when compared with LCD TVs that sometimes are one-third the price for the same screen size. For instance, where an OLED TV can currently be purchased in the range of \$1,500 to \$2,000, an LCD set in an equivalent size can be had for \$500.

“There has been a slowdown in OLED sales worldwide because of how fast LCD prices have fallen in 2019,” said Gagnon. “It is not unreasonable to say that for the OLED TV category, it is a make or break year in 2020. There has to be some significant movement on pricing.”

5G Momentum

Mobile network operators worldwide, including Verizon, T-Mobile, AT&T and Sprint in the U.S., began rolling out faster, more reliable 5G cellular networks in 2019, and coverage is expected to expand dramatically this year.

While smartphones will lead the way for 5G, these new networks have been designed

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Connected Vehicles

Top automakers have been coming to CES for years to show off the latest driver assist, navigation and infotainment systems. This year is no different, with the march toward autonomous vehicles underpinning a lot of what car makers are doing.

Qualcomm is expected to make news at CES on the autonomy front. The San Diego company has established itself as a key supplier of connectivity, telematics, and infotainment systems to the auto industry. Now Qualcomm is making the leap into autonomous driving, offering up a technology system to power self-driving vehicles.

Details will be released at the show. But the move isn't a surprise. The company received regulatory permission in 2017 to test self-driving cars in San Diego County. It has conducted experiments on streets near its headquarters and on local highways. One of the most recent tests occurred in October when a portion of Highway 905 was closed while three Qualcomm self-driving cars maneuvered along the roadway.

"I think we have a fantastic starting point," said Nakul Duggal, senior vice president and head of automotive product management for Qualcomm. "Autonomous driving is just going to be transformative to the auto industry because it is going to bring the right technologies — machine learning, sensors and really advanced capabilities to the next generations of cars. I know our customers who have been working with us (in telematics and infotainment) are going to be very excited to see what we have to offer in these new categories."

Qualcomm is also touting CV2X, or Cellular Vehicle to Everything, at the show. This peer-to-peer technology lets vehicles communicate directly with other nearby vehicles and smart cities infrastructure at distances beyond line of sight. The

technology is in its early stages of deployment, but Ford and several other car makers

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These algorithms hunt for patterns. Probably the most common AI experience for many people is having targeted digital ads pop up based on an Internet search.

But AI powers a lot more than that. Voice assistants, language translation, biometrics, facial detection and recognition all rely on AI. Those cool smartphone camera filters come from AI. So does the processing that creates focused, centered photos even in low light.

Much of the heavy lifting for AI occurs in data centers. But powerful processors on devices these days are bringing AI closer to users.

Device-based AI chips will likely find their way into a number of consumer devices this year, ranging from smartphones and smart speakers to wearables, according to consulting firm Deloitte's Technology, Media and Telecommunications Forecast for 2020.

Deloitte predicts that on-device AI will be popular with businesses too. Robotics, smart cities sensors, security cameras, environmental sensors and other Internet of Things gadgets could tap the technology to deliver insights from data closer to the source.

"John Deere is back this year with how AI is transforming the farming world," said Chupka, the executive vice president for CES. "Companies realize they need to develop a technology strategy for their own growth, and CES is the place where people showcase that."

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