∠SSEMBLY CES 2020

Trends and Predictions for 2020



Not Science Fiction, but the Technology of 2020

While the demonstrations of <u>farm-to-counter kitchens</u>, concept <u>smart mirrors</u> and <u>all-electric adventure vehicles</u>—and even novelties like the <u>world's first smart potato</u>—continue to steal their share of headlines, CES 2020 was less about innovation for the sake of innovation, and more about highlighting feats of technology that are accessible now, or in the very near future. In fact, Samsung's 292-inch <u>"The Wall" modular TV</u> can actually be purchased, <u>Toyota's e-Palette</u> will be transporting Olympic athletes at the 2020 games in Tokyo, and multiple brands of foldable and dual screen phones are now in stores.

The innovations of the future are already here, presenting tons of exciting potential applications for marketers in 2020 and beyond.

Standouts of 2020 included:

Useful robots: LG's CLOi restaurant concept showed us a restaurant where people and robots seamlessly interact; Samsung's Bot Chef could identify ingredients and aid in chopping, and its Ballie robots could autonomously assist around the house. Toyota also introduced the blueprint for its Woven City, to be built by 2022, where robots and autonomous vehicles are part of the fabric of how people live. These examples offered an exciting glimpse into a future where robots can assist in less novel, more useful ways.

Practical biometrics: Technology that reads our biometrics can help us calibrate our lifestyles to get more out of the every day. Panasonic demonstrated this through its <u>yoga</u> <u>studio powered by human trait sensors</u>, and we saw more <u>connectivity between</u> <u>exercise</u>, <u>wearables and smart devices</u> across the floor.

Urban air travel: While autonomous helicopters won't be taking flight for a number of years, the race to the <u>third dimension of travel is on</u>, and the technology to power it is already available.

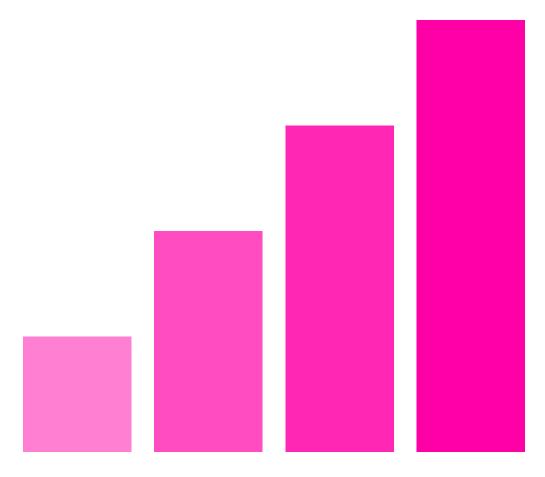
ATSC 3.0: The biggest names in the TV industry <u>launched 20 new ATSC 3.0-enabled TV models</u>, a new standard representing the future of broadcast that will roll out in more than 60 markets nationally in 2020. ATSC 3.0 will enable <u>dynamic</u>, <u>geo-targeted ad insertion across TV and mobile devices</u>, changing the way we view ads. Fox, NBC, Tegna and Nexstar have already announced support for ATSC 3.0 in 2020.

If nothing else, these demonstrations invite us to imagine what is possible with technology and to envision a world where even the daily commute could be fundamentally disrupted.

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The Wait for 5G is Over

For several years, 5G has been the talk of CES, with prominent exhibitions from chipmakers like Intel and Qualcomm proposing a more connected and high-speed future powered by 5G. This year, 5G was less stand-alone and more integrated, particularly in automotive and connected city demonstrations that illustrate how the roll-out of 5G will enable every device—from autonomous helicopters, to in-home robots, to the ThinQ Smart Front Door—to connect, share and react.



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Anticipatory Technology

With the <u>Internet of Things</u> (IoT) and smart technologies colliding over the last few years, the bar is now set for consumers to expect everything to be connected. For example, Samsung's palm-sized <u>Ballie robot</u> can activate the vacuum cleaner; <u>LG smart fridges</u> can view ingredients, aid meal prep and pre-heat the oven; and <u>vehicles are becoming living rooms</u> <u>and entertainment centers</u>. There is no doubt that the power of anticipatory technology will disrupt media consumption.

The right mix of tech, data and creative will enable advertisers to take advantage of the same trend across media, with companies like IBM combining Watson and weather data, and Visa using financial signals to enable smarter and more predictive targeting throughout the consumer journey. As the <u>sun sets on cookie-based targeting</u>, we will see more applications of media and technology working to understand and anticipate consumer intent, to deliver and measure advertising in a cookie-less world.

However, as <u>privacy regulations continue to unfold</u>, it remains to be seen how quickly adoption of new IoT devices and technology will trend.



Ubiquitous Voice

What once was the hottest debut of CES is now part of the fabric of almost every technology innovation.

Amazon's first stand-out presence on the show floor had nothing to do with its now ubiquitous smart speaker technology, but rather, it showcased the <u>first Alexa-powered automotive exhibit</u>, featuring multiple demos designed to show what is possible through the mashup vehicles, connectivity, software, apps, sensors and machine learning. For example, the Rivian Alexa full-vehicle demo highlighted the deep <u>Alexa Auto SDK</u> integration that Rivian is using to control core vehicle functions on its upcoming <u>R1T Electric Truck</u>—the first all-electric adventure vehicle. <u>"Hey Google"</u> also returned as the core of Google's presence, while voice assistants are moving to integrate standards, allowing them to seamlessly permeate everything from smart TVs to washing machines.

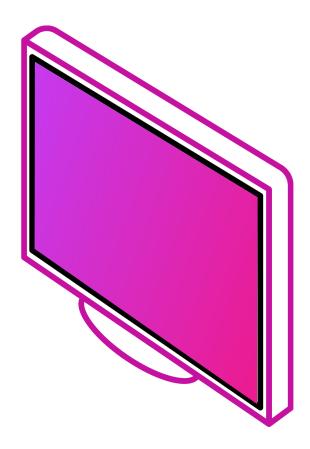


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Anytime, Anywhere Screens

An <u>LG TV screen that rolls up (or down)</u>. A <u>Samsung Sero</u> screen that can turn vertical to seamlessly integrate with mobile content. A groundbreaking <u>Sony Crystal LED production</u> <u>screen</u> that can hardly be distinguished from a 3D movie set. A <u>Sharp transparent display</u>. A <u>Royole paper-thin screen</u> that can flutter in a breeze or attach to any surface—even fabric. A <u>Samsung Frame</u> that melds form and function, becoming artwork when it's turned off.

There is no longer a distinction between "first" and "second" screens, as screen innovation has become less about finding incrementally brighter hues or blacker blacks, and more about adapting to <u>people's needs and lifestyles</u>. There has never been more diversity, choice, innovation, affordability and integration when it comes to an exciting world of screens, opening a world of possibility for advertisers who can creatively take advantage of a growing array of canvases.

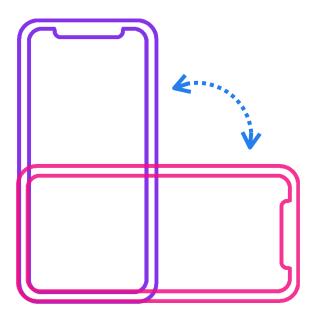


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A New Addition to the Streaming Wars

Quibi, the \$1 billion backed company helmed by Meg Whitman and Jeffrey Katzenberg, formally unveiled its 'Hollywood-style' mobile streaming service, along with ad supported and ad free options. The big bet here is that consumers will continue to embrace mobile as their first screen but increasingly want curated, premium content specifically made for this device.

Opportunities for content creators were unveiled with <u>Turnstyle by Quibi</u>, which lets viewers get different angles of content when viewed in portrait mode vs. landscape mode. Having every show filmed and edited this way unlocks features unique to the mobile device and a new way for creators to develop content. It remains to be seen however, if users embrace to this flexible way of consuming content.



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A Shorter Path to Purchase

As our lives are enhanced by smarter technology, more screens, and ultimately, more screen time—the path to purchase becomes even more direct. Haier Magic Mirrors will let you try on outfits virtually, your LG or Samsung refrigerator will tell you when you are running low on milk, and you will be able to shop the outfits the actors on your favorite show are wearing directly from your smart, Samsung Multi-View TV.

We are also seeing this come to life in digital media. Across our conversations at CES, more media partners—including Google, Facebook and Amazon—introduced products drawing a sharper roadmap from media to shopping and ecommerce in 2020. These products, like <u>Instagram Threads</u>, featured shoppable ad units and betas. Perhaps more interesting were the less unexpected and newer tech providers who are now entering or enabling the world of shoppable experiences, such as <u>TheTake</u>, a image and video recognition company that is partnering with LG and select networks to offer users of new LG Smart TV devices shoppable content. Using AI and partnering across multiple stakeholders, including networks, MVPDs, hardware and tech, this solution offers hundreds of products for users to shop and more closely tie purchase to content or inspiration.



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