

U.S. Pushing Effort to Develop 5G Alternative to Huawei

Companies including Dell, Microsoft and AT&T are part of the effort, White House economic advisor Larry Kudlow says



Industry boosters say 5G networks can do for future tech startups what 4G technology did for smartphone apps like Uber and Snapchat.

PHOTO: FACUNDO ARRIZABALAGA/SHUTTERSTOCK

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WASHINGTON—Seeking to blunt the dominance of China’s Huawei Technologies Co., the White House is working with U.S. technology companies to create advanced software for next-generation 5G telecommunications networks.

The plan would build on efforts by some U.S. telecom and technology companies to agree on common engineering standards that would allow 5G software developers to run code on machines that come from nearly any hardware manufacturer. That would reduce, if not eliminate, reliance on Huawei equipment.

Companies including [Microsoft](#) Corp., Dell Inc. and [AT&T](#) Inc. are part of the effort, White House economic adviser Larry Kudlow said.

“The big-picture concept is to have all of the U.S. 5G architecture and infrastructure done by American firms, principally,” Mr. Kudlow said in an interview. “That also could include Nokia and Ericsson because they have big U.S. presences.”

Telecom equipment market shareSource: Dell'Oro GroupNote: 2019 figures through third quarter

2016201720182019CiscoEricssonHuaweiNokiaZTE0%102030

The U.S. contends Huawei has strong links to the Chinese military, making use of its equipment [a national-security risk](#). Huawei has denied such links and says it operates independently of the Chinese government.

Mr. Kudlow said Dell founder Michael Dell was a strong backer of the project, noting that software is becoming more important as 5G develops. Dell could also benefit by producing the servers and other equipment that run the advanced software, said James Lewis, a technology analyst at the Center for Strategic and International Studies.

“Dell and Microsoft are now moving very rapidly to develop software and cloud capabilities that will, in fact, replace a lot of the equipment,” Mr. Kudlow said. “To quote Michael Dell, ‘Software is eating the hardware in 5G.’”

The effort is in a preliminary stage and still faces many obstacles, including bringing together different companies with varying priorities. Cellular networks use highly specialized technology that is mostly new to generalist companies like Microsoft and Dell.

“Talk is a good start,” said Roger Entner, an analyst for industry researcher Recon Analytics. “But in the end it needs action. More funding will accelerate everything.”

White House officials say they are taking the effort seriously because of the potential value of 5G technology to the broader economy.

[U.S. lawmakers have proposed](#) funding research and development into open 5G software standards. A bipartisan group of senators in January proposed tapping proceeds from the Federal Communications Commission’s coming spectrum license auctions to pay for research grants into those technologies.

The administration is looking into those efforts but hasn’t yet decided whether to back them, Mr. Kudlow said.

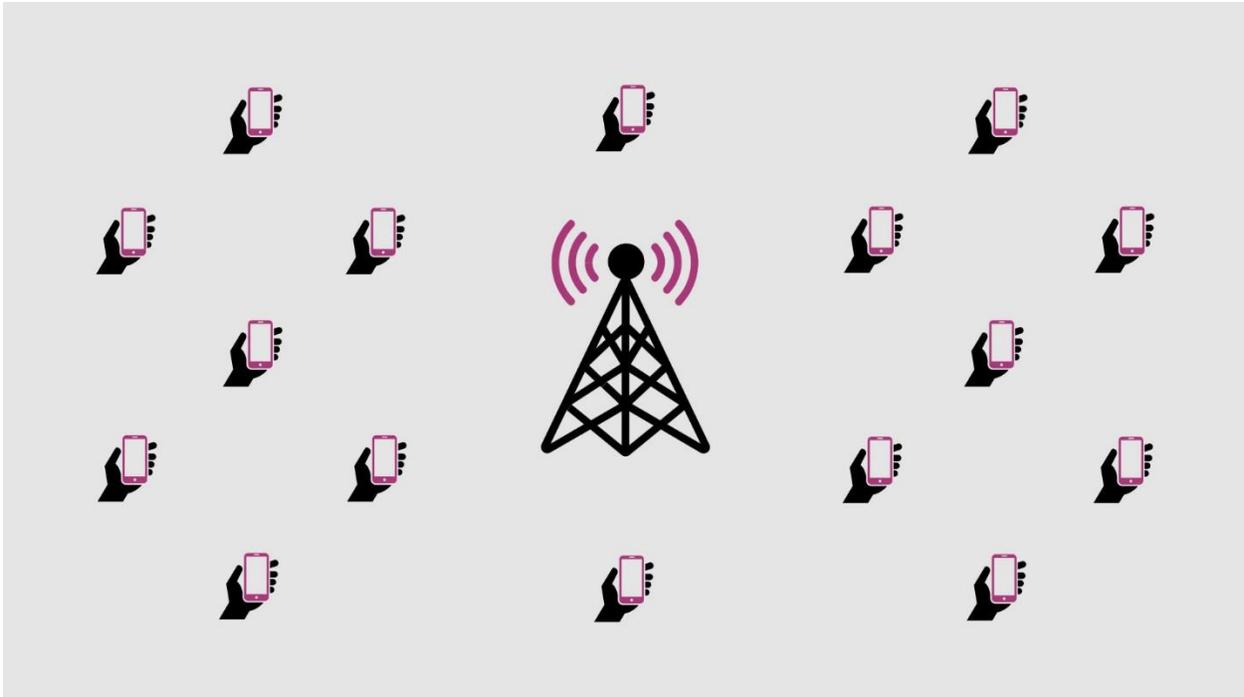
In some ways, the U.S. effort mirrors the way China seeks to nurture new technology. Huawei benefited enormously from Beijing’s willingness to subsidize the company and block foreign competitors. While the U.S. won’t be providing subsidies, it is protecting the enormous U.S. market for Finland’s [Nokia](#) Corp. and Sweden’s [Ericsson](#) AB as well as other non-Chinese companies.

“The Chinese don’t have grounds to complain,” Mr. Lewis said. “We’re doing what they do. The Chinese hate the word reciprocity.”

Industry boosters say the engineering standard will power an “Internet of Things” in which factories, household appliances and vehicles are connected in the way mobile phones are now. They say 5G can do for future tech startups what 4G technology did for smartphone apps like [Uber Technologies](#) Inc. and [Snapchat](#) Inc., building a foundation for future innovation.

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In the global race for 5G, U.S. telecom firms have a unique disadvantage: limited access to the “goldilocks” band of radio frequencies. That’s pushing U.S. firms toward a less practical version of 5G. WSJ explains the science and its implications. Illustration by Carlos Waters / The Wall Street Journal

Huawei won’t be easy to unseat as the global leader, however.

Huawei is [the world’s top seller](#) of telecom equipment, followed by Nokia and Ericsson, according to market researcher Dell’Oro Group. The Chinese company has won fans globally—including small rural telecom carriers in the U.S.—for the quality of its equipment and technical support.

Over American objections, the U.K. recently decided to permit Huawei [to build part of the country’s 5G system](#).

Andy Purdy, Huawei’s chief U.S. security officer, said American officials shouldn’t sideline the Chinese telecom giant.

“If the U.S. wants 5G hardware and software developed by a U.S. or European company, the government should encourage companies to begin negotiations with Huawei to license our 5G technology,” Mr. Purdy said, adding that without the company’s

intellectual property, “the combined product will be 1-2 years behind the comparable Huawei products in terms of functionality and assurance.”

Paul Triolo, head of global technology policy at the Eurasia Group, a business consulting firm agreed that Huawei has a formidable lead.

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“The problem is you’re starting late in the game to fix this problem,” Mr. Triolo said of the U.S. effort. He added that the initiative could also threaten Nokia and Ericsson by making their machines into commodities, Mr. Triolo said.

Representatives of Nokia and Ericsson didn’t comment on the White House initiative.

Other potential issues could slow the project. If U.S. and European companies work separately, it could take longer to develop world-beating technology. If they work together, it could raise antitrust concerns.

Mr. Kudlow said he didn’t believe antitrust would be an issue, saying the companies would compete in providing 5G technology. “We’re taking a coordinating role among leading companies,” he said.

He didn’t provide a specific time frame, though others in the government have said they expect to have a system running within 18 months. Earlier, the White House considered subsidizing a new hardware competitor to Huawei or backing a government-owned 5G network but rejected both.

President Trump is squarely behind the effort, said Mr. Kudlow, who is leading the initiative as director of the National Economic Council.

“The president kept saying to me, ‘Can’t we just put it (5G) under one simple infrastructure?’” Mr. Kudlow said. “We’re trying to create an American soup-to-nuts infrastructure for 5G. He kept hearing that Huawei seems to be able to do it.”

Internationally, U.S. officials have discussed their 5G development plans to try to convince allies to ban Huawei equipment. Huawei is [deeply ingrained in countries](#) like the U.K. and Germany. Mr. Kudlow said he hoped the software project would help the U.K. reverse its recent decision to permit Huawei to build part of its 5G network. The software development push has attracted interest from U.K. officials who want domestic cellphone carriers to have more suppliers to choose from other than Huawei and its Scandinavian rivals, according to a person familiar with the matter.

At the same time that the U.S. is [trying to block Huawei overseas](#), the administration is split on whether U.S. companies should continue to supply the firm, which is [on a Commerce Department blacklist](#).

The Defense Department recently opposed a Commerce rule [that would close a loophole](#) allowing U.S. firms to continue selling computer chips and other products that aren't deemed sensitive from a national-security perspective.

The Pentagon argued that if U.S. companies lose Huawei as a customer, they will have fewer profits to pour into research and development.

Mr. Kudlow signaled that he was aligned with the Pentagon view. "We don't want to put our great companies out of business; the president is a strong believer in that," he said. "But on the other hand, we are very aware that Huawei is a threat to our national security."