

Huawei's HarmonyOS Aims at US Tech Dominance

Chinese tech giant seeks to link billions of smartphones to server farms that upload real-time information to big data processing driven by AI

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Huawei's new Harmony operating system isn't just a substitute for Google's Android software for smartphones, industry experts say, but an ambitious effort to unify handsets and laptops with the internet of things and big data analysis.

The Chinese tech giant, shut out of the Android ecosystem by US sanctions, wants to lead the integration of mobile devices and personal computers with data centers and industrial robotics, autonomous vehicles, industrial robotics and smart logistics.

If Huawei's program succeeds, billions of smartphones will link seamlessly to server farms, uploading real-time information to big data processing driven by artificial intelligence.

Western analysts believe that HarmonyOS is based on Linux, the open-source operating system now employed on more platforms than any other operating system.

Smartphone apps written in HarmonyOS will exchange data with cloud-based AI servers over high-speed broadband. The same software will control automobiles, industrial automation, smart home technology and other functions.

The potential pushes the envelope of imagination.

HarmonyOS can power a fitness tracker that takes pulse, temperature, blood oxygen levels, blood pressure and electrocardiograms in real time and upload the data to an AI server that flags individual health problems and checks billions of people for symptoms of epidemic disease.

It can integrate the travel plans of urban commuters with autonomous vehicles while controlling the traffic flow of entire cities.

"It will take five or ten years for the potential of Harmony to become evident," Handel Jones, CEO of International Business Strategies, told Asia Times. Jones advises many

large US and overseas technology companies.

“The key issue for Huawei is the adoption of Harmony in smartphones, tablets and notebooks, and I expect that Harmony will gain market share over time,” he said.

Huawei’s Chinese competitors in the handset market including Xiaomi, Oppo and Vivo will support HarmonyOS among China’s 1.5 billion broadband subscribers, while continuing to use the Android system outside of China, Jones added.

Initial reception of the HarmonyOS operating system inside China has been positive, according to industry analysts. Users report that the new Huawei system extends battery life by about 10% over Android in the same handset.

“A key reason for all of China’s handset manufacturers to promote Harmony is support by the Chinese government, and China’s commitment to become independent of the US,” Jones added.”

In May 2019, the Trump administration imposed sanctions that stopped Huawei’s access to Google’s Android system. In early 2020, Washington also banned the sale of high-end computer chips that power Huawei’s top-of-the-line smartphones.

Huawei was the world’s top handset vendor in the second quarter of 2020, but fell to second place in the third quarter and is expected to [rank seventh](#) in 2021.

HarmonyOS had been under development for three years before the Trump sanctions, and Huawei accelerated its development in response to the US ban. The company’s consumer business shrank, but its network business accounted for 16.5% year-on-year growth in revenues in 2021’s first quarter.

Huawei meanwhile has diversified into cloud computing, automotive software, fintech, and industrial automation, among other fields. It remains the main provider of 5G infrastructure in China, despite US attempts to prevent it from obtaining the required computer chips.

American sanctions forbid the sale to Huawei of high-end computer chips made with American machinery or American chip design software – restrictions that cover almost all of the world’s output.

Semiconductor fabrication involves 200 separate industrial processes and American hardware and software are present in almost every semiconductor production line in the world.

One expert who requested anonymity speculates that “Huawei must be getting chips that it isn’t supposed to get” from Asian suppliers who ignore US sanctions. Asia Times could not independently confirm the claim.

Chinese industry sources told Asia Times last month that [5,000 dedicated industrial 5G networks](#) already have been installed in China and that tens of thousands more will come on line during the next year. Huawei is a leading provider of automation software.

“Software is where the money is,” an industry analyst said. “The main processor that controls a vehicle costs about US\$100. But Tesla charges \$10,000 for its self-driving system. If you just make the processors, you can’t make that much money. But the

software is very profitable. And China doesn't want to depend on Tesla's software."

Huawei executives say that they never wanted to compete with Google over a smartphone operating system, but now have no choice. HarmonyOS may displace Google from the Chinese handset market, which accounted for a quarter of the world's 325 million handset shipments in 2020.

HarmonyOS is also in a position to challenge Microsoft's Windows operating system for laptops and tablets. A version for laptops is now under development, and it "might eliminate Windows," one industry analyst told Asia Times. Microsoft earned about 10% of its \$125 billion in 2020 revenues in China.

On the other hand, HarmonyOS will have little impact on the market for Android software outside of China, industry analysts say.

The greatest impact of HarmonyOS as an integrated platform for the whole range of digital products will be in China, IBS's Jones believes. "China is already experimenting with technologies that will become a daily reality in a few years," he said.

"In Chengdu," a western Chinese city of 25 million people, "there is already a pilot program for autonomous vehicles, with one level for piloted vehicles and another for self-driving vehicles and that will come to Beijing and Shanghai soon.

"The whole ecosystem will change dramatically in five or ten years, and Harmony will support this change in the structure of society," Jones concluded. "And China will do this independently of the US."

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