

COMMENTARY

Trump's war on Huawei is self-defeating

The US has up to now dominated the semiconductor industry; that's about to change

by [George Koo](#)

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US President Donald Trump continues to target Chinese telecom giant Huawei in a spiraling superpower tech war. Image:

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When the US administration recently attempted to slam the door on Huawei, China's leading telecommunication and most technology-loaded company, President Donald Trump and his China advisers broke what had until then been the gold standard in international collaboration – the world's semiconductor industry.

The US Department of Commerce recently announced that henceforth, any

semiconductor chips made with equipment built by American companies cannot be sold to Huawei without prior approval and licensing from the DOC.

This new regulation is unprecedented and in violation of normal sales contracts between the buyer and seller of such equipment. And it is difficult to know if the DOC has any legal ground to stand on.

Depending on the complexity of an integrated circuit, the manufacturing process could easily take a dozen steps or more. Many of the critical steps use high-precision equipment designed and manufactured by American companies. In effect, requiring a license in order to sell to Huawei is to threaten the supply of semiconductors to the Chinese company.

Silicon Valley in the San Francisco Bay Area gave birth to the semiconductor and American companies continue to dominate the manufacturing of equipment needed to fabricate increasingly complex semiconductor devices. There are five major semiconductor manufacturing equipment (SME) companies in the world, and three of them are American.

The business model of the semiconductor industry is to make successive generations of integrated circuits that are faster, smaller, cheaper and more powerful, doubling in performance roughly every 18 to 24 months. To keep this trend going, the fabrication equipment has to become more intricate and more powerful, and therefore more expensive.

Writing off an obsolete fabrication line and investing in the next generation of technology had become a hurdle only highly capitalized multinational companies can scale. Then along came Taiwan Semiconductor Manufacturing Company with a new and unique business proposition.

TSMC revolutionized the business

TSMC announced that it would invest and keep investing in state-of-the-art equipment to make semiconductor chips as a “foundry” service to anyone who wishes to take advantage of such “toll” fabrication.

Thus TSMC irrevocably altered the business model for the industry. No longer having to invest in a “fab” (industry lingo for a production line), companies can concentrate on designing new chips to perform new functions and tasks.

A million dollars for computerized design tools can now launch a startup with an idea to meet a market opportunity, whereas to own a semiconductor fab, the company would have been looking at minimum investment well north of US\$1 billion around a decade ago, a figure that could pass \$10 billion these days.

For the last 30 years, “fabless” companies have proliferated. Some, such as Nvidia, concentrated on proprietary chip designs to be sold on the market. Others, such as Huawei, can afford to design specialized chips for their own internal use.

With no exaggeration, the independent-foundry model enabled the recent boom in the economy driven by high-technology companies.

The entire world benefited from the virtuous circle made up of innovative chip designs by fabless companies, to be made by independent foundries and then sold to gadget makers such as Apple and Huawei.

Advances in chip design take advantage of advances in semiconductor-manufacturing equipment that are then incorporated into new end-uses and novel applications. Each step on the chain goads the next to stretch and attain the next level of technological advances.

Digital currency, autonomous driving and applications on the drawing board based on artificial intelligence are all waiting for the introduction of the next generation of semiconductor devices.

That is, until the Trump administration abruptly changed the rules of the game. Suddenly, American made SME cannot be used to make semiconductor chips for Huawei.

In the process, TSMC became an unwitting victim caught in the squeeze play between the Trump White House and Huawei. Huawei has been one of the most important clients for TSMC, accounting for as much as 20% of its annual revenue.

TSMC may have decided to yield to the White House pressure and agree to locate a fab in Arizona to help Trump look good and hoped that in exchange for the goodwill the company would be allowed to protect its business with Huawei.

TSMC outsmarted by Trump?

Surprise, surprise. Just the day after TSMC signed the agreement to invest \$12 billion and build a fab in Arizona, the DOC made the announcement that could force TSMC to stop selling to Huawei.

Less than two weeks earlier, the DOC also gave Huawei a head fake by signaling that American companies would be allowed to participate in organizations along with Huawei to set industry standards for 5G, the fifth generation of wireless telecommunications technology.

This action suggested that the DOC had finally recognized how far Huawei had come to dominate the development of 5G. Agreeing to work with Huawei would seem to hint that some sort of peace agreement was in air.

Not so. It seems double dealing in bad faith has become the hallmark of the Trump administration.

Of course, the estrangement with Huawei will materially impact sales of all semiconductors to China. The US has remained the world's leader and biggest supplier of semiconductors and China has been America's largest customer. In 2018, the US sold \$75 billion worth of semiconductor chips to China, or about 36% of the US output.

When China retaliates by buying less from the US, the generous trade surplus enjoyed by the American side will shrink. Lower sales mean less profit and less money to spend on research and development, and that will erode America's leadership in this high-tech sector.

Chip suppliers in Japan and South Korea will be happy to fill the void left by the US, and China will be more determined than ever to invest in the development of semiconductor technology that will break the dependence on the US.

The short-term outcome is lose-lose, but the long-term consequences will be disastrous for both sides. The virtuous circle where everybody gains will be replaced by vicious competition and market fragmentation.

At a Rose Garden press conference on Friday, Trump read a statement on his position on China, the World Health Organization (WHO) and Hong Kong. He didn't specifically threaten to tear up the Phase 1 trade agreement signed in January with China, but it would be difficult not to conclude that bilateral relations are heading toward decoupling.

Painful future awaits

Once Beijing gets weary of continuing to be conciliatory and hoping for reconciliation, its retaliation will be nasty and directed to where it would cause most pain. It won't just be not buying soybeans and Boeing aircraft.

As the [Macau News Agency](#) points out, gaming licenses are up for renewal over the next two years. By merely starting rumors that the renewal for Sands China is problematic could devastate majority owner Sheldon Adelson's net worth.

Adelson has been Trump's most important underwriter of his political fortunes, to the tune of more than \$100 million for each election cycle. Trump will feel the sting of Adelson's pain.

What will the world look like, when bilateral relations split into an American sphere of influence and a Chinese sphere of influence?

The US sphere is best represented by the "charm" of the country's smooth-talking top diplomat, Secretary of State Mike Pompeo. He struts around the world offering no carrots, just the stick of possible sanctions if a hapless country doesn't go along with whatever is in the American interest that he dictates.

Some small nations do get intimidated and fall in line because they fear the might of US

sanctions. Under Trump, these sanctions can be arbitrary and at the whim of the president.

Others fall in line because they feel the need for the security promised by the presence of the US military, as for example the case for Taiwan. Despite the feckless nature of the Trump administration, the Taipei government willingly submitted to being violated by letting Washington coerce TSMC and relocating its crown jewel to Arizona.

However, there is no reward for being an economic ally of the US, like Vietnam for example, if it sells more to America than it buys. When that happens, the US gets upset and slaps on tariffs. If a “trade partner” happens to have a comparative advantage, Congress will be asked to enact a regulation to erase that advantage.

But America’s presumptive global leadership is starting to break down, brick by brick. Whether the issue is climate change, weapons proliferation, Open Skies inspections, covenants with Iran and others, European Union nations resent having no say in America’s decisions. They are expected to abide by whatever Washington decides is in America’s best self-interest, sometimes without so much as a courtesy consultation.

It doesn’t matter to Pompeo if the interests of the EU and the US are not aligned. But with increasing regularity, when Pompeo makes a declaration, the EU members pretend to be hard of hearing.

As [Asia Times](#) has pointed out, China and other Asian countries are far ahead of the West in recovering from the Covid-19 epidemic and well on to economic recovery. China’s trade with Asian countries is three times what China has with the US. The writer of that article goes on to say that the long-term driver of Asian growth is China’s emergence as a tech superpower.

Certain members of the US Congress along with Trump seem to think that China desperately needs to send students to the US to steal American technology. They probably don’t

know that China is already first in the world in supercomputing, quantum computing, 5G telecommunications, hypersonic weaponry, civil engineering, high-speed rail, electric vehicles, self-driving cars and buses, along with myriad other disciplines.

At the Friday press conference, Trump announced that he would sever the US relationship with the World Health Organization and stop funding it because, he claimed, the WHO is in China’s pocket. He was not fooling anyone, of course. He has to double down on blaming the WHO so that he doesn’t have to explain why more than 100,000 Americans have died from Covid-19.

At the [World Health Assembly](#) with representatives from 194 nations that convened just 10 days earlier, every member expressed support for the WHO as essential to safeguard world’s health, except the US.

Chinese President Xi Jinping addressed the assembly. He didn’t know at the time that the US was going to withhold more than \$400 million per year of financial support to the WHO. He announced that China would contribute \$1 billion annually for two years to help the WHO fight the pandemic.

Xi also reported that China has five potential vaccines undergoing clinical testing. Should any emerge as a safe and effective vaccine, then he pledged that China would make the vaccine available to everybody.

The US also has vaccines under development. However, its position is that the owner of the intellectual property for that vaccine will decide on its availability. Asia Times has an excellent analysis of the vaccine “war” [here](#).

If you were one of the 190+ nations having to decide which sphere of influence to become a part of, which would you choose?

George Koo recently retired from a global advisory services firm where he advised clients on their China strategies and business operations. Educated at MIT, Stevens Institute and

Santa Clara University, he is the founder and former managing director of International Strategic Alliances. He is currently a board member of Freschfield's, a novel green building platform.

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