# Editorial

**by Gurumurthy Kalyanaram**

**The Case of Huawei: Political, Policy and Market Dynamics**

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US-China trade and other disputes have injected great uncertainty in the global economy and geo-politics. The disputes have thrown a shadow over US economy and society. However, in the recent G-20 summit, Presidents Trump and Xi have agreed to resume the dialogue to resolve the disputes. That's good news, though there is no promise of final resolution of disputes. Time will tell.

President Trump had to make two concessions to President Xi. One, the US will not impose new 25 percent tariffs on $300 billion in Chinese imports. Two, US has agreed to lift some restrictions on Huawei, including sales of American components to the telecom giant.

The case for encouraging Huawei's participation is simple. Huawei is the leader in 5G and related technologies, and 5G is transforming the productivity of economies and societies.

**Lifting Some Restrictions on Huawei Is Prudent, And More Could be Done**

The decision to lift some of the restrictions on Huawei is a prudent and mutually beneficial move. As a matter of negotiating chip, there are still many pending restrictions on Huawei. For instance, the Commerce Department will now review its legal measures restricting the exports. There are also Justice Department actions against the company and one of its executives, both of whom have denied wrongdoing.

The US administration should consider relaxing the restrictions further. Such action will not only engender the goodwill of Chinese government, it will also enhance the productivity and innovation.

The security concerns relating to Huawei equipment, even if based on sound evidence, can be substantially ameliorated. And on balance, there is much business and economic value in engaging with Huawei.

**Security Concerns Can be Addressed**

The European countries, including France, Germany and UK, have reviewed the potential security threats posed by Huawei equipment and concluded that these threats can be materially obviated with appropriate mechanisms.

For instance, UK review concluded that “underlying defects” left the company's software and cybersecurity systems open to hackers, posing “significant” security issues. Even so, the report mainly blamed sloppy engineering and found no evidence that the vulnerabilities had been introduced at the direction of Chinese authorities; it also stopped short of proposing an outright ban.

Nevertheless, out of abundant caution, they have restricted Huawei from participating in a few specifically identified highly-sensitive sectors.

The US could do the same. There are many possible instruments. For instance, the US can place Huawei on a probation for a stipulated number of years as it is commonly done in "deferred prosecution" status. And the case against Meng Wenzhou, the CFO of Huawei, can be resolved through a Non Prosecution Agreement.

**Global Competition Forces Re-Think on Supply to Huawei**

Huawei is a major customer of United States chip makers, and ban on sales to Huawei had created a dismal outlook for these companies. So, the chip makers found a way to circumvent the ban on sale of American technology: take advantage of a provision on labeling American-made goods because goods produced by American companies overseas are not generally considered American-made.

Even if the American companies were bludgeoned into submission, there are others and the American companies would be losing business to a competitor. For instance, Micron competes with South Korean companies like Samsung and SK Hynix to supply memory chips that go into Huawei's smartphones. If Micron is unable to sell to Huawei, orders could easily be shifted to those rivals.

**Huawei, The 5G Leader**

Huawei has become the leader of fifth-generation (5G) mobile telephony. 5G will offer hugely faster data speeds than today's mobile technology, which is important for consumers. Huawei secured the 5G leadership by designing relevant chips, related product development, and by engaging in setting standards and protocols for 5G.

For instance, Huawei has released a series of 5G based chipsets designed to compete with U.S. and Korean competitors. These chipsets cover most of the telecom field: Kirin 980 chipset for smartphones; Balong 5000 chipset for modems; Tiangong 5G base station; and Kunpeng 920 chipset for the Taishan cloud server.

**5G Will Transform The World Order**

5G will alter the landscape of our society, commerce and economy, and polity in substantial ways. Take the case of crypto-currencies and block chains. With a clever application of cryptography, we will be able to secure the transfer of money and payment without needing a trusted third party. No central banks, no clearing houses. Per most technology and policy experts, the role of traditional currency will diminish in the next decade or two and even disappear. Obviously, this will change the optics and substance of commerce and conduct. Experts are already discussing regulatory mechanisms for the new world order.

The crypto-currency and block-chain efficiencies and effectiveness will depend much on the speed of the networks, and the 5G networks will be crucial in this context. Huawei, as the leader in 5G, will have a big role to play in the design of new global economic and market ecology and order.

**5G Will Transform Everyday Life**

The two defining characteristics of 5G are: low latency (1 ms or thereof) and large bandwidth (up to 10 Gbps.) What are the applications that require some combination of the massive bandwidth and throughput promised by 5G in addition to tight latency requirements?

Augmented Reality, Autonomous Driving, Multi-person Video Conversation, Tactile Internet, Wireless Cloud Based Office, and Virtual Reality. And what are the applications whose performances will be materially enhanced with the adoption of 5G technology? Automotive e-call, Device Remote Control, Disaster Alert, First Responder Activity, Monitoring Sensor Networks, and Video Streaming. All these applications are dependent on making cellular networks smarter and more efficient, and AI will do just that.

What does 5G bring to AI applications apart from technically enhanced performance? As Bob Rogers, chief data scientist for analytics and AI in Intel's Data Center Group observes, 5G provides contextual awareness. How so? By more meaningful machine learning: having access to more data and having that access at significantly faster speeds than are available with today's LTE networks, devices will have a better ability to understand their surroundings. For instance, voice-activated assistants like Siri, Alexa, and Google Assistant which already use AI to process our requests will do far better when the context becomes richer.

What more? 5G and AI will revolutionize the Internet of Things (IoT), which is essentially about devices being connected and the network being smart. How so? 5G technology is able to support more simultaneous internet connections, require less energy from wireless radios, enable more video applications, and mitigate problems associated with wireless latency.

5G will transform every-day consumer experience in many ways. For instance, we are now at the threshold of dramatically enhanced performance of TV and Smartphone. Huawei leads in both these domains.

5G will impact the manner in which we deliver and receive health care, and our mobility and transportation.

5G will make an enormous difference in providing health care to millions of people in remote locations, as well as training doctors in surgical specialties. Telecom equipment maker Ericsson is already working with doctors at King's College in London to test 5G-compatible prototypes of touch-sensitive gloves connected to robots.

5G will accelerate the adoption of self-driving cars and vehicle-to-vehicle communication — where cars exchange their location, speed, acceleration, and direction. The vehicles will know before their drivers do when a truck five vehicles ahead suddenly brakes, or another car turns into your blind spot. These changes will evidently recast mobility and safety. As with land vehicles, technology will enable communication between drones, and enhance their precision and safety.

Overall, 5G will be the core technology that ensures artificial intelligence functions seamlessly, that driverless cars don't crash, that machines in automated factories can communicate flawlessly in real time around the world, and that nearly every device on earth will be wired together.

**5G Ecology Is Exploding**

5G ecology is exploding. "According to the GSA's monthly report on the 5G device ecosystem, there are now 25 5G mobile phones (plus regional variants), 7 hot spots, 23 customer premise equipment devices and 23 5G modules;

four routers (including two internet of things routers), two drones, one laptop, one switch, one USB terminal and one robot."

Accordingly, the US should explore ways to encourage full participation of Huawei in the US economy even as it carefully addresses the security concerns.

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