

ON THE RECORD

HUAWEI EXECUTIVES
SPEAK TO THE PUBLIC

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Heroes are forged, not born.

During World War II, the famous IL-2 kept flying even after being riddled by anti-aircraft shells and machine-gun fire from other planes. Although badly damaged, it finally made its way back home.

Contents

May 2019

01. Ren Zhengfei's Japanese Media Roundtable	01
02. Ren Zhengfei's Chinese Media Roundtable	34
03. Ren Zhengfei's Interview with Bloomberg TV	104
04. Liang Hua's UK Media Roundtable	148
05. Catherine Chen's Interview with Corriere Della Sera	167
06. Catherine Chen's Interview with Sky Italia	179
07. Guo Ping's Canadian Media Roundtable	186
08. Ken Hu's Speech at VivaTech 2019	211
09. Ken Hu's Speech at the Potsdam Security Conference	221
10. Song Liuping's Speech at the Press Conference on the Progress of the NDAA Lawsuit	232
11. Catherine Chen's Byline in The New York Times	237

June 2019

12. A Coffee with Ren	243
13. Ren Zhengfei's Interview with Le Point	295
14. Ren Zhengfei's Interview with CNBC	336
15. Ren Zhengfei's Interview with the Financial Times	367

Ren Zhengfei's Japanese Media Roundtable

May 18, 2019
Shenzhen, China

Ren: Thank you for visiting Huawei and talking with us. I'm very pleased to talk with representatives from the Japanese media and academia face-to-face. As you are all from Japan, does this café look familiar to you? After staying at Hotel Gajoen Tokyo in Meguro, my wife suggested we build a café in a similar style to host our Japanese friends. My family are all fans of Japan, and my younger daughter has even chosen Japanese as her second foreign language. She regularly visits Japan to go shopping or buy things at the pharmacies.

01

Thank you for meeting with us today. I visited Huawei for the first time in 1997 when I was still a graduate student. A very young employee hosted me, and he told me that he was heading for Africa the following week, and that his last assignment before going overseas was to host customers in the factories. After becoming a university professor, I brought my students to Huawei in 2017. To be frank, those students were a little scared of Huawei, but after seeing with their own eyes how great Huawei looked and how cutting-edge Huawei's technology was, they understood what kind of company Huawei is now.

Despite the challenges Huawei faces in the external environment, Huawei is the most technologically advanced company in the world. This morning,

Professor Huang Weiwei shared with us his idea about *The Huawei Charter*. He told us that Huawei has one basic idea, which is to maximize growth while ensuring a certain level of profit. In addition, Huawei seeks to become number one in the installed base market. This is now the driver behind Huawei's growth. I am wondering whether Huawei would consider creating new value and perspectives in new markets and new domains. Huawei is an excellent communications equipment provider. Moving forward, 5G will combine technology and services to better serve humanity. Against this backdrop, will you make some adjustments to the company? For example, personal data protection is now taken very seriously. The primary goal of the EU's GDPR is to give control over personal data back to individuals themselves, but the associated technologies needed to do this are not mature enough right now. In which areas can Huawei create new value moving forward? Do you have any specific ideas that you can share with us?

Ren: Why does Japan have such an advanced economy? The answer is you stay customer-centric to develop excellent products that everyone buys. Many Chinese people flock to Japan to purchase goods that China has alternatives to at even lower prices. Why? Because people believe that the quality of Japanese products is higher. The goal of quality is to meet customer needs.

We want to make our customers happy; we don't pursue specific growth rates or seek to become number one in the installed base market. To make our customers happy, we must take responsibility for our products. This means we will continue to provide maintenance services for equipment we have already sold to our customers, even if some of the equipment is outdated. After 5G networks are rolled out, we will continue to maintain our 2G, 3G, and 4G equipment. If we stopped doing so, how would our customers in Africa live normal lives?

When designing industrial products, Japanese manufacturers strive to make them small, light, precise, and compact, and deliver the best possible customer experiences to make customers happy. This is something worth learning from. Our production lines were actually designed with the help of Toyota and many retired Japanese experts, based on Japanese quality management systems. A lot of equipment on our production lines is from Japan and Germany. This has something to do with the advice of these Japanese experts. I believe you have visited our Songshan Lake campus. It was also designed by well-known Japanese architect Okamoto.

By learning from Japan, we have managed to make our equipment as compact as possible and make our 5G base station a "must-have" item around the world.

With a capacity more than 20 times that of a 4G base station, our 5G base station is only a third or a quarter of its size and weighs only 20 kilos. In addition, it is 10 times more power-efficient, and we don't need to build a tower to install the 5G base stations. In densely populated European cities, there are many old houses, so it's impossible to build towers. Our 5G base stations can be easily put on poles or walls instead.

We've also learned from Japan in terms of corrosion-resistant materials, which can resist corrosion for at least 20 years. This means our 5G base stations can even be placed in sewers. This will be a great feature. Building large towers everywhere would be very costly, and we would need to use cranes to install base stations on them. In Europe, the engineering delivery cost of one Huawei 5G base station has been reduced by 10,000 euros, and the maintenance has been greatly simplified.

The US is a rich country with a vast territory, so it's understandable if they are willing to build a lot of towers. However, Japan is a densely populated country. There are many buildings very close together in the cities, so there is not enough space for towers. We have learned from Japan to develop very powerful yet very compact 5G base stations that can be installed under any conditions, from the coldest parts of Hokkaido to the hottest parts of Okinawa. I'm sure our 5G base

stations will become very popular in Japan.

My family loves Japanese home appliances because they are high quality and easy to use. Users who haven't received much education can also effectively operate these appliances. We have incorporated this principle in our product design, creating new opportunities for us in the market.

The largest reason for Huawei's success has been that we put customers first in everything we do. Some people say only people with money are customers. I don't think this way. We have many customers in Africa that are cash poor, but our employees on assignment in Africa are paid triple what their peers in China make. We don't make much money in Africa, but we have still chosen to operate there.

Huawei is not a listed company, so we don't seek to make our financial statements look good. Instead, we work for humanity and for our ideals. Almost all base stations on the southern and northern slopes of Mount Everest were installed by Huawei. We don't make much money from them because there are very few people on Mount Everest. However, network connectivity could save the lives of mountaineers. I once had lunch on Mount Everest in Nepal. At that time, it didn't occur to me that it took some Nepalese girl eight hours to carry the food up there. A local told me that even if I started

walking right then, it would take me more than three days to reach the base of the mountain. When we serve others, they thank us in their own way. I believe this spirit is similar to the Japanese spirit.

We've learned a great deal from Japan, and I often share stories about Japan with our employees. The "Japanese spirit" is one of the most important elements of a future industrial civilization. Of course, we also learn a lot from Germany, especially its process-based management. We have worked hard to incorporate these management approaches as well as the Japanese and German spirits into what we do at Huawei.

02

I have been following the Chinese economy for 25 years, with a focus on the development of private companies. I believe Huawei is the best private company in China. Has Huawei experienced any difficulties that are unique to private companies? The environment in China isn't very friendly to private companies. Why do you think they have been developing so rapidly?

Ren: I really don't have an answer to your question. We have faced numerous difficulties, and we have overcome them by abiding by the law. We never do things that are not allowed by law; in this way we can ensure our operations are secure. How do we earn profits? We

expect our employees to work harder, improve the quality of the services we provide to our customers, and be nicer to them. This is how we have won customer trust.

In our early years, we encountered the same difficulties that all private companies would face. The biggest difficulty was getting loans. We didn't have money ourselves. What could we do? Before 2000, we basically reinvested all our personal income into the company. I didn't even have my own apartment before 2000. My wife rented a small 30-square-meter apartment. It was facing the west, and had no air-conditioner. I was called a rich man, but I didn't know why I still lived in such meager conditions. My younger brother told our mom, "Many other employees who are not doing as well as my brother have their own apartments, but he doesn't." This is because I had invested all my money in our company's future. Back then, we had to work extremely hard just to get our first loan, which was only 80,000 yuan.

All countries face problems during their development, and China is changing for the better. In general, the environment where private companies operate has become so much better. To you, the environment in China may not be as good as that in Japan, but compared with 30 years ago, the environment and policies in China have become very good. I believe that

China will become even better. Particularly, the ongoing trade war between China and the US will stimulate and accelerate economic reforms in China. So I believe the environment in China will become even better.

The US has been using the strength of an entire nation to attack Huawei, but they haven't yet produced any solid evidence against us. Why has Huawei been complying with all applicable laws and regulations? In countries outside China, we were called communists. If we didn't respect the laws of these countries, we would not have survived. But back in China, we were often called capitalists. When I said I had no money, that was back in 2000. It doesn't mean I have no money today. Some people now regard me as a capitalist. So we were faced with challenges both inside and outside China. If we broke the law or crossed the line either inside or outside China, we would have disappeared. So we must strictly abide by all applicable laws both inside and outside China.

03 I have been studying Huawei for 20 years, and came to know some of your stories. One story said there was a time when Huawei had only one car, and you let a customer use it, so you had to walk in downtown Shenzhen. During our visit to your Songshan Lake campus yesterday, we saw Huawei's huge European-

style factories. These stories are deeply moving.

Ren: The story you told is true. Back then, my home was 4.4 kilometers away from the company. In Shenzhen, it gets very hot in summer. When I walked to the office from home, I would be drenched in sweat. At that time, it was impossible to have a shower in the office, so I would sit at work all day in my wrinkled clothes. That's where the story you heard came from. However, that is a thing of the past. I wear decent clothes today, and I have to thank my wife for that. She always reminds me to change my clothes before meeting with guests, and often forces me to buy new clothes.

04 **Toyota has a production automation system called Andon. While its processes can be optimized to meet local conditions and help workers know what's going on in production lines, the core Andon system itself is never changed, no matter where it is used. Toyota sticks to this principle. Huawei has factories all over the world. Is there any principle or rule that you always adhere to no matter where you are?**

Ren: We also have our own principles that will never change. Did you go to our factory on our Songshan Lake campus earlier today? You might have found that the equipment on our production lines is almost all from

Japan. We strictly followed Japanese practices when building these production lines, and we will build several hundred or even a thousand production lines like these in the future. Each of these lines will be 120 meters long and use a lot of equipment from Japan.

We have consulted with many senior Japanese consultants and engineers. They taught us the Japanese approaches to management and how to use their equipment. Going forward, we will build factories all over the world and we will use these Japanese practices everywhere we go.

When it comes to quality management, the German approach makes products first and then tests them later, trusting that the original design will work. The Japanese approach is highly vigilant and tests products at every stage of the production process. Both are good approaches, but Huawei has chosen the Japanese one.

05 Huawei is famous for its "dedicated employee" concept, and you encourage this kind of spirit no matter where you are. Is this idea about Huawei correct?

Ren: Yes, you're right. We call anyone who works hard to create value a "dedicated employee".

Let's say I want to be a musician. If I only practice

eight hours every work day and then relax on weekends, do you think that will make me a great musician? Could you become a great painter by just working regular office hours?

Anyone who wants to make a truly great product might have to put more time into it. We call these people "dedicated employees". It's up to our staff to decide what they want to be: a dedicated employee or a normal employee. Normal employees can clock-out on time every day, enjoy their weekends uninterrupted, and get paid for mandatory overtime work. They are still well-paid. A dedicated employee needs to go the extra mile though. Does this mean dedicated employees are not compensated for their additional effort? No.

Our dedicated employees are allocated company shares. For normal employees, we offer annual bonuses as a type of short-term incentive based on their contributions to the company, but they are not entitled to share in the company's long-term success. Company shares are a type of long-term incentive for dedicated employees, allowing them to continuously benefit from their past contributions. After retirement, dedicated employees can keep their company shares to continue benefiting from their past contributions. The number of shares employees receive is linked to their job grade, contributions, and how long they have worked for the company.

06

I study international economic rules, especially WTO rules. I'm very concerned that the friction between China and the US may split our world into different camps. The US just issued an executive order on Huawei two days ago. Previously, the US only banned government procurement of Huawei products, but now they are using the executive order to bar all US companies from buying Huawei products, and the Commerce Department's Entity List prevents US companies from selling to Huawei. This is all very shocking to us.

I have two questions for you. First, the US is clearly trying to sever their economic ties with China. What's the impact of actions like this? Second, Huawei sued the US government for its National Defense Authorization Act in March. What's your response to the new actions the US is taking now? The way I see it, you could file a lawsuit in the US, or work with the Chinese government to bring the case to the WTO. That would be a confrontational approach. Or you could accept oversight from the US or a third party, just like what ZTE has done. That would be a conciliatory approach. Which approach would you choose?

Ren: I think the world economy is much more globalized than it was in the past. Previously, a country could make a sewing machine, train, or steamship entirely on its

own. We are now in the era of economic globalization, so global collaboration for shared success is the only way to move forward.

If a country makes a product on its own behind closed doors, then this product won't sell well, and the system that uses this product will be too expensive to meet market demands. The goal of economic globalization is to let each country do at scale what it is most suited to. Aren't high-speed rails around the world using the nuts made by one particular Japanese company? However, if every country wanted to build their own nut factory like this, then they would have to bear very high costs.

Any attempt to reverse this trend of globalization and develop an industry in isolation will only lead to greater economic chaos. This is particularly true for Japan. Japan and China are close. With a population of 1.3 billion, China is an important market for Japan. Many Japanese products dominate the Chinese market because of their high quality. The Chinese market is still on the rise. China is also easing its restrictions on foreign investment by passing a new foreign investment law. This will speed up the flow of goods in China. The US's decision to pull out of the Chinese market will in no way help boost its economy.

The US Department of Commerce has just added us

to their Entity List. We haven't quite figured out what to do next yet. That said, there are two things we'll never do. First, we will never follow in the footsteps of ZTE. Huawei is totally different from ZTE, and associating Huawei with ZTE just because we are both Chinese companies doesn't make sense. Second, we will never resort to international arbitration through the WTO, because this would mean the country would have to exercise its power on our behalf. Why would a company like Huawei want to meddle with national affairs? The country has a lot of other things to worry about, so they shouldn't worry about companies like us. You asked whether we will file another lawsuit in the US. We need to think more about it.

07

I have two questions for you. First, if Huawei is banned from importing semiconductors, can you keep your smartphone production going? Second, both the global economy and the global Internet society are being split. Will this trend reverse? Will the global economy and the Internet move towards integration or disintegration?

Ren: First, that ban won't have any significant impact on our production. It's true that the ban will affect us to a certain degree, but not much. Our revenue may just not be as good as previously expected. For example,

our first-quarter revenue grew 39% year-on-year, but in April, that growth rate declined to 25%. We estimate our annual growth rate will drop to 20% or slightly lower.

Second, let's take a look at railway systems. There are multiple standards around the world, from narrow tracks to standard tracks and wide tracks. These differences impede the smooth flow of goods. History has proven that this kind of inconsistency is harmful to the global economy. Unhindered interconnectivity is vital for global progress.

The circle is the most important discovery in history. Without this understanding of circles, people couldn't have invented the wheel. Without wheels, there wouldn't have been the carriage, the train, or the steamship. And even then, when carriages were the main method of transportation, people couldn't go very far. When trains and steamships were in their heyday, economic growth was still relatively slow and poverty remained a persistent issue. Now that our world is connected by high-speed trains and aircrafts, our society is moving ahead at an increasing speed. Advances in network technology will always enable faster social progress.

Similarly, networks have evolved from 3G and 4G. There are currently three separate standards being used for 4G, making 4G very costly. We've gone to great lengths to define a single set of globally accepted

standards for 5G. You may ask what value 5G will create for our society. The cost per bit of 5G will be 10 or 100 times lower than that of 4G. Marketing people say it will be 10 times, while scientists say it will be 100 times. This means the price for 5G bandwidth will be one-tenth or one-hundredth of 4G bandwidth. With affordable 5G, children from poor families will be able to more easily access the Internet to study and see what the outside world is like. This is a huge advancement.

When I was a kid, I lived in a poor mountain village. At that time, we used to sing a song called "Let's Paddle", which is from a movie that was shot in Beijing's Beihai Park. One of its lines was about "green trees and red walls". Decades later when I took my younger daughter to the Beihai Park for paddle boating, I realized why the song was like that. I saw these green trees and red walls for myself. I couldn't help but shout out, "Oh. These are the green trees and red walls from the song!"

Nowadays, little kids already see so much of the world online. With the Internet, humanity will be able to unleash its creativity and make great progress. Some people wonder whether we will see a harmonious society. I think the Internet will help to make that happen.

I was asked a question recently, "How much populism do you think you will see among young people of future

generations?" I said, "Future generations will probably think beyond national borders." I didn't know how active my younger daughter is online until a US reporter told me that she has tens of thousands of online followers. Young people don't define themselves by geopolitics; they can instead talk with anyone who shares their values. How could people like that be divided by different ideologies?

5G is here to benefit humanity. It's not an atomic bomb. Networks are a must-have. Without interoperable networks, communications will be difficult. What will be the world's most important resource in the future? Population. About 70% to 80% of the world's population live in developing countries, rather than in a few developed countries. If developed countries build closed networks, they will lose access to the world's most populous markets. I believe most countries understand this and will not set themselves down a path of isolationism.

08 **In previous interviews, you called Donald Trump a great president. Under today's circumstance, how do you feel about him?**

Ren: I called Donald Trump a great president because he has cut taxes, which is a very difficult thing to do

in democratic countries. Why have many European countries become welfare states? Their tax rates are so high that people who work hard end up paying most of their income to taxes. This may make people think they'd be better off working less hard and spending more time drinking coffee. They may wonder why they have to work at all.

Tax cuts are good for industry development. Donald Trump has got one thing wrong though. People see the US intimidating this country today and that country tomorrow, and randomly detaining this person today and that person tomorrow. Under these circumstances, who would dare to invest in the US?

Similarly, Deng Xiaoping made massive tax cuts in China about 40 years ago. He reduced the tax rate for foreign-funded companies to 15%. Back then, the income tax rate for Chinese companies was 55%, so even the Chinese people questioned why the tax policy favored foreign companies so much. At first, foreign investors weren't sure of this policy, so they came to China to test the waters. They found that local governments were all scrambling to make the most of this central government tax policy. New foreign-funded companies could operate tax-exempt for their first three years, and were given additional 50% tax rebates in their fourth and fifth years. Because of this, foreign investors

have since flooded into China.

I went to Yalong Bay in Hainan for the first time over 30 years ago. The bay is every bit as beautiful as Hawaii. The local government leased the land to Hong Kongese investor Fok Ying Tung for 7.5 Chinese yuan per hectare. Now the land price has soared to 15 million yuan per hectare. Fok Ying Tung later donated a whole golf course and some hotels to the local government.

Thanks to China's favorable tax policies, foreign investors have swarmed into China over the years. Deng Xiaoping was very friendly to foreign investors, including those from Japan. When Hu Yaobang served as the Chairman of the Chinese Communist Party in the early 1980s, there were many young people traveling back and forth between China and Japan. Sino-Japanese relations reached their peak in the 1980s, and the two economies have reinforced each other. The Hotel Nikko in Shanghai was built at that time. It still looks stunning to this day and has yielded many times its initial investment in returns over the years. China has tried very hard to be truly friendly to foreign investors. If President Trump keeps intimidating others, no one will dare to invest in the US.

While favorable policies are important, it's also crucial for policymakers to keep their promises. I called Donald Trump a great president in the sense that he has done

a great job cutting taxes. But he has his weak points. His tax policies are excellent, but they haven't been well received in other parts of the world. Even worse, they have caused US stock prices to plunge. He hasn't put his policies to good use. By the time he finally finds where he has gone wrong, others simply won't believe that he will make his words count. As a result, he may miss out on the opportunity to become a truly great president.

That being said, Donald Trump has reminded other world governments of the need to reduce the burdens on companies. When companies pay less taxes, they can spend more on developing new products and upgrading facilities. This will help the country become more competitive. China has reduced the rate of its value-added tax by about three percentage points recently.

I said that Donald Trump is a great president only because he has cut taxes. I won't change my opinion on this even though the US has attacked us and made my family suffer. I have an open mind. If I didn't, Huawei wouldn't have become what it is today.

09 My first question: The US has banned the export of US parts and components to Huawei. Had Huawei prepared for this or were you taken aback when this was announced? If you had prepared in advance, when

did you begin this preparation? Do you plan to address the issues arising from the US ban through in-house product development or other channels? My second question: Is the US ban on Huawei due to the fact that you are a Chinese company? Is being a Chinese company a curse or a blessing for Huawei?

Ren: Regarding your first question, I want to talk a bit about Huawei's history first. In 2002 and 2003, we were at a turning point. We looked at it like we were trying to climb a very high mountain. We were climbing from the northern side, which was steeper and more treacherous than the southern side. We also didn't have the money for proper field rations. Another team was also climbing the mountain, but from the southern side, with canned beef, coffee, and sleeping bags. We knew when the two teams met at the peak, there would potentially be intense conflict. We thought at the time that there was no way for us to win in that kind of faceoff, so we planned to sell Huawei to a US company for 10 billion US dollars. We went through all necessary procedures and signed all necessary contracts. Our two teams even took a weekend to put on Hawaiian shirts, run around, and play ping pong on the beach, to celebrate the success of this great deal. However, the US company's board of directors was changing and the new chairman vetoed the deal. Many years later, Ericsson's CEO told me that the US company's number 2 leader was almost

in tears when he told him about how the deal fell through, because he thought they had missed out on a very good opportunity. That deal was supposed to give us an "American cowboy hat" that we could wear to protect ourselves when we faced off against the US at the mountain's peak. That way our Chinese employees would be working for an American company. We had hoped that would help prevent a violent clash with the US. It was a pity that this deal failed.

Our senior executives discussed this again in 2003. I asked them, "Do we still want to sell the company?" All of our younger executives said no, so I said to them, "We are going to clash with the US in 10 years; we have to be prepared." Since then, we have had our Plan B, which thousands of employees have worked on in the background. They often complained to me that the company didn't value their work and that other teams were receiving much more attention. This indicated that they didn't understand our Plan B. I then asked them, "Have your salaries and bonuses been impacted?" They replied, "No." Then it was still ok.

To avoid competition with the US, we really wanted to sell our company over a decade ago, and at the time we even planned to move onto new businesses. One plan was to acquire all tractor factories in China. The biggest problems with tractors back then were oil

leaks and engines that would overheat too easily. We knew we could solve these problems using the IPD process we learned from IBM. The average price of a tractor at that time was 1,000 US dollars. After some quality improvements, we would be able to increase the unit price to 2,000 US dollars. If we had taken that path, we might have become the world's largest tractor empire. Another plan was to enter the tourism sector. We targeted the region between Sichuan, Tibet, and Yunnan, aiming to bring tourist trains to the region like those you see in Switzerland. We wanted to develop the region into a popular tourist destination. We even asked our senior executives to buy land there. In places where our trains would go, we planned to build high-end hotels. If some of our executives couldn't buy land in an area, we would plan our train routes to avoid that area. It was a great plan. At that time, 10 billion US dollars was a huge sum of money, and we could also use the capital leverage to amplify its impact. Today, most tourist destinations in China are very crowded. If we had entered the tourism sector, we would have been able to help make the situation better. However, because the plan to sell the company was vetoed, we returned to committing ourselves to the information industry.

Regarding your second question, I think you're approaching the US ban from a geopolitical perspective. Will there be two sets of network standards? That's

only going to happen if they don't want to deploy their networks in foreign markets. Currently, both sides are trying very hard to reach the top of this mountain. Maybe when we get there, we won't fight but will instead embrace each other, to celebrate our success together. Both teams are working to provide information services for humanity. I will never hate the US, and I actually was a big fan of the US when I was young.

Is being a Chinese company a curse or a blessing? It's hard to say. We don't want to take advantage of others and we don't think we are at a disadvantage for being a Chinese company. We are moving forward constantly, to fulfill our mission of serving humanity. Not everyone dislikes us and decides to not use our services. We will serve countries and regions that welcome us. That fulfills our mission. I think that will make us happy. For those countries and regions that don't welcome us, what's the point of edging in to serve them?

10 **Your management philosophy has touched me deeply. In the past, you said that a businessperson shouldn't talk about politics. Is that a result of your past experience or lessons learned? You mentioned in your article that you had been influenced by Yitzhak Rabin. What is on your mind?**

Ren: I think that everyone has a job to do. As a businessperson, I know nothing about politics. If I meddle in politics and make a mistake, I would harm my country. In view of this, it'd be better not to meddle in politics and instead do what I am good at doing.

I like to think that I am a student of Yitzhak Rabin. I admire him and his policy of "exchanging land for peace" very much. Israel has a very small population, around whom live several hundred million Arabs. The Arab nations are very smart, and it is easy to see what they could become in 100 to 200 years. After drawing a clear border between Israel and surrounding Arab countries, Yitzhak Rabin tried to remain friendly with them. This might have helped avoid many disasters over the years, and it showed how Yitzhak Rabin looked at things from a long-term perspective. Yitzhak Rabin was a great man. His tragic death was a loss to humanity.

His philosophy has taught me that we must be friendly to our competitors. For many years, we have never attacked our competitors. Instead, we have strengthened technical exchanges and dialogues with them. Even though we have become the leader in some standards domains, we have never taken measures that harm our competitors. We have learned Yitzhak Rabin's philosophy of "exchanging land for peace". This has significantly improved our thought. We have been

collaborating for peaceful coexistence with others.

As you might remember, during the first wave of the EU's anti-dumping moves against Huawei, Sweden and Finland were among the first countries to object. I like to believe this must be because of lobbying from Ericsson and Nokia. Here is another example. US policies today are favorable to Ericsson, Nokia, and Qualcomm. However, comments made by the CEOs of these companies are very neutral, and they are very nice to us. They don't mean to exclude us. If all countries endorsed Yitzhak Rabin's philosophy, I think we would see greater peace and harmony around the world. Society ultimately relies on labor to create wealth. When Yitzhak Rabin passed away, I was very sad. The same goes for Steve Jobs' death. If they could have lived longer, maybe the world's information sector would have seen more dramatic changes.

11

There's still no new progress in the Meng Wanzhou case. Do you have any new thoughts on this?

Ren: First, Meng Wanzhou hasn't violated any laws. The US allegations are groundless. Nevertheless, we have to wait for the US to produce evidence so the court can make a ruling. Overall, Meng Wanzhou is quite well right now. She is taking six online courses and she plans

to complete her doctorate during this time. She doesn't lose heart.

Meng Wanzhou has a good connection with Japan. When the March 11 earthquake hit and caused the nuclear leak in Fukushima in 2011, Ms. Meng flew to Japan to lead Huawei's disaster relief efforts. On her flight, there were only two passengers on the plane. One was Ms. Meng and the other was a Japanese person. During the disaster, she helped a Japanese girl, who actually wrote to my daughter after she was detained in Canada.

Right now, Meng Wanzhou is calm and patient. The legal process might be very long, but truth will eventually be revealed.

12

I am the only Chinese person in the delegation today. My relationship with Huawei began with Mr. Tian Tao's book *Leadership, Culture, and Connectivity*. I arranged its translation into Japanese. It feels like Huawei has always acted as if it is in crisis. I want to ask you, Mr. Ren: Besides the external environment, for example, pressure from the US, what do you think is the biggest risk for Huawei internally? Is it the ownership structure, succession, your strategic direction, or your decision-making mechanisms?

Ren: First, we don't really have any serious problems within the company. Before the Meng Wanzhou incident happened, we had one crisis – complacency. This was because our employees had earned quite a lot and became comfortable. Since this incident, we have become more united inside the company, and all of us are now more dedicated than ever before. Those who are not are often choosing to leave the company. That's why we don't have big issues internally.

Second, regarding our ownership structure, our employees can choose to keep their shares and retire if they meet certain conditions. They can also sell their shares back to the company. There is no risk in this regard.

Third, regarding our strategic direction. Over the past several decades, we've gone from dozens of people charging at an opening in the city gate, to several hundred, several thousand, tens of thousands, and then hundreds of thousands relentlessly charging at that very same opening together. This opening is "dredging information traffic", and we spend nearly 20 billion US dollars a year on R&D in this area. Not many companies around the world dare to invest so much on the same thing for so long. Public companies all have to care about their financial statements, so they tend to be conservative when it comes to investment. Huawei is

not a public company, so we don't care about whether our financial statements look good or not. We only care about whether we can achieve our strategic goals. Therefore, we don't have any issues with our strategic direction.

13 **Regarding Huawei's relationship with Japan, Japanese companies have sold huge quantities of parts and components to Huawei. What kind of relationship does Huawei plan to build with Japanese companies moving forward?**

Ren: This is a very good question. First, Huawei complements Japanese companies in many aspects. Japan is good at nurturing Nobel Prize winners. This means that Japan has highly developed basic research. It doesn't matter which individual wins the Nobel Prize; it boosts the basic research of Japan's entire scientific research system. This is really a big deal. Japan is the world's most powerful in terms of industrial research in materials. Of course, the US is also very powerful in this area.

Second, Japan is also the world's most powerful in terms of parts and components. People are saying that we will move toward an intelligent world. The most important characteristic of that society will be that all things will be able to sense. How can people and things

sense? Through sensors. Sensors are based on materials science. Displays are also part of materials science. We estimate that the 5G industry itself will create a market worth 400 to 500 billion US dollars, but it will enable an Internet of Things industry worth dozens of trillions US dollars. As Japanese products are small, light, precise, and compact, they will surely be used on a super-large scale around the world. Huawei complements Japanese companies in many aspects, and we maintain friendly relationships with them. We don't compete with each other. If we return to that metaphor of climbing the mountain, I would say that Japanese companies are with us climbing the northern side. That is because we must use Japanese products in great quantities if we want to reach the top. We collaborate with Japanese companies for shared success. Together, we will be able to expand the information industry and build an intelligent world for humanity.

Recently, I listened to a speech by Japan's Finance Minister Taro Aso and was deeply moved. He is rather just and positive. We should thank him. He is a great man to make such a speech under such huge pressure.

Actually, Huawei used to be rather timid. Because of the attacks from the US, we have been forced to walk tall today. It is the US that has forced us to become heroes. Even though nationalism and populism are

on the rise in some parts of China today, we don't think those sentiments represent the direction of our country's development or the direction of society as a whole. China, Japan, and South Korea will form a free trade zone someday, where we can promote economic development by bringing what we each have to the table. The Association of Southeast Asian Nations (ASEAN) member states would surely want to join so they can buy industrial products and sell their agricultural products. If ASEAN integrates with China, Japan, and South Korea's free trade zone, the EU will get excited too: "We also have many good things and want to cooperate with you because you have a large population and a large market." I think this is how the "Belt and Road" initiative is intended to work. If our trains run out of fuel halfway to our destinations, we need to refuel them. The Middle East and Central Asia have plenty of energy, so they can join to provide fuel. This will create a rather large economic zone. In this zone, Japan would play a very important role, because it is already an industrialized country. China is a country moving towards industrialization but will still need quite a long time to gradually optimize its institutions. We can work together to create a more harmonious society. This society will be centered on the economy, trade, and wealth creation, rather than military hegemony. Many countries around the world spend a huge amount of

money on the military. If this money were saved, it could be used to completely eliminate poverty.

I hope that you can continue visiting us here, helping strengthen the bridge of friendship between Japan and China. Many people in China don't know much about Japan. If they go there, I believe they will like it. Japan is one of the world's best tourist destinations. The villages are all clean, each with at least one good noodle house and one good izakaya. The rivers are all crystal clear, with ducks and fish swimming and wild flowers decorating the banks. I've even seen them lay eggs and hatch ducklings along the banks. Japan is a great example of a harmonious society. The US can learn a lot from Japan. The US has spent huge amounts of money on war, but their roads are falling apart.

Ren Zhengfei's Chinese Media Roundtable

May 21, 2019
Shenzhen, China

01

I am a reporter for live broadcast. You have a military background, so one thing we have in common should be that we are both punctual. How time flies! Four months ago, in this same place, we had an interview. At that time, the public all felt that Huawei had hit its lowest point. Everyone was so concerned about Huawei, so you started taking many interviews from journalists inside and outside of China. We didn't expect today's situation to be even more complicated, or even more difficult, than four months ago. Just now, another media representative took out a photo of a bullet-ridden aircraft. I was also given this same photo. I heard that you like this photo very much, the photo of the badly damaged fighter aircraft.

Ren: I first saw this photo on wukong.com, feeling that the aircraft was quite like our company. So I sent it to my colleagues. The Carrier BG thought the aircraft in this photo is akin to its situation and started using it for communications.

Later, we found that there were not many problems with the Carrier BG, since it has been getting fully prepared over these past 10-plus years. So our current situation is that we are repairing our "aircraft" during its flight so that it can make its way back home.

But this aircraft was able to fly back, because its vital parts, such as its fuel tanks and engines, were not

damaged. Only the non-vital parts of its wings were damaged. But if its vital parts were attacked during a flight, how was it possible for it to make its way back?

Ren: I want to tell you two stories about Germany and Japan during World War II. Germany refused to surrender, so its cities were flattened by air-strikes. Japan was also attacked by intensive bombardments. The US army threatened that if Japan did not give up, intense bombing would also flatten the country. At the end of the day, Japan decided upon a compromise, which was to announce the country's surrender but keep their Emperor. By the time the surrender came, the majority of Japan's industrial infrastructure was destroyed, but the country did not suffer the fate of being leveled like Germany.

Back then, there was a famous slogan: "Even if everything else is lost, as long as people remain, they will revitalize the nation." The truth is, Germany was able to revitalize its economy and restore all its houses to the extent before the war in just a few years. The Japanese economy also recovered very quickly. This was attributable to their talent, education systems, and foundation. This is what matters most. So even if we lose everything else, we can't lose our talent. This includes their qualities, skills, and confidence. This is very important.

Yesterday (US time), the US issued a temporary license to Huawei. In other words, its restrictions on Huawei can be lifted in the following 90 days. What's your view on this license? What could you do in these 90 days? If the news is true and the US cancelled the imposed restrictions after 90 days, how would you comment on such a reversal?

Ren: First of all, 90 days doesn't mean much to us, and we have prepared. To us, the most important thing is to do our job well. What the US will do is out of our control. I would like to take this opportunity to express my gratitude to the US companies that we work with. Over these 30 years, they have helped us to grow into what we are today. They have made many contributions to us. They have taught us how to get on the right track and run the company. As you know, most of the companies that provide consulting services to Huawei are based in the US, including dozens of companies like IBM and Accenture.

Second, we also have been receiving support from a large number of US component and part manufacturers over all these years. In the face of the recent crisis, I can feel these companies' sense of justice and sympathy towards us. Two days ago, at around two or three a.m., Eric Xu (one of Huawei's rotating chairs) called me, telling me how hard our US suppliers had been working

to prepare goods for us. I was in tears. As a Chinese saying goes, a just cause attracts much support, while an unjust one finds little. Today, some US companies are communicating with the US government about the approval.

The US has added Huawei to the Entity List. That is to say if a US company wants to sell something to Huawei, it needs to obtain approval from the US government.

The US is a country ruled by law. US companies must abide by the laws, and so must the real economy. So you guys from the media should not always blame US companies. Instead, you should speak for them. The blame should rest with some US politicians. I don't think we should throw blame indiscriminately without knowing whether it will fall on the right persons. We may end up targeting the wrong persons if we do so. The media should understand that these US companies and Huawei share the same fate. We are both players in the market economy.

US politicians might have underestimated our strengths. I don't want to say too much about this, because Ms. He Tingbo, President of HiSilicon, made all these issues very clear in her letter to employees. And all mainstream newspapers inside and outside of China have reported on this letter.

You touched upon the damaged aircraft just now. We have some non-core products for which we haven't prepared "spare tires", or Plan Bs, so to speak. These products will be phased out sooner or later. So the US move will have some impact on these products. But in sectors where we have the most advanced technologies, at least in the 5G sector, there won't be much impact. Not just that, our competitors won't be able to catch up with us within two to three years.

02

I want to ask a question about chips. I noticed that you said in an interview with Japanese media on May 18 that "Huawei does not need chips from the US. There is no problem with Huawei." In a letter to your employees, you mentioned that Huawei has strengths and has made preparations. Can I ask where your strengths come from and what you have done to prepare?

Ren: First, we are always in need of US chips. Our US partners are fulfilling their responsibilities and asking for approval from Washington. If this approval is granted, we will still buy chips from these suppliers. We may even sell chips to US companies (to help the US make more advanced products). We won't exclude our US partners or seek to grow entirely on our own. Instead, we will grow together.

Even if there is an insufficient supply from our partners, we will face no problems. This is because we can manufacture all the high-end chips we need ourselves. In the "peaceful period", we adopted a "1+1" policy – half of our chips come from US companies and half from Huawei. Despite the much lower costs of our own chips, I would still buy higher-priced chips from the US. We cannot be isolated from the world. Instead, we should become part of it.

Our close relationships with US companies are the result of several decades of effort on both sides. These relationships won't be destroyed by a piece of paper from the US government. As long as these companies can obtain approval from Washington, we will continue to buy in large volumes from them. It may be the case that they cannot obtain approval quickly. We have ways to go through this transition period. Once approval is granted, we will maintain our normal trade with these US companies and work together to build an information society for humanity. We don't want to work alone.

We can make chips that are as good as those made by US companies, but this does not mean that we will not buy chips from the US.

03

You once said that Huawei wouldn't be working behind closed doors and would cooperate with others. Now you are saying that Huawei will be doing both things. Does this mean that US trade protectionism and the US ban on Huawei are essentially disrupting global supply chains and causing chaos in the market? The US has been accusing Huawei in many aspects, such as corporate governance and finance. What do you think are the focus areas of the criticisms? Why are they targeting Huawei?

Ren: I'm not a mind reader, so I don't know exactly what [those US] politicians are thinking. I think we should not be the target of US-led campaigns just because we are ahead of the US. 5G is not an atomic bomb; it's something that benefits society.

In terms of network capacity, 5G is 20 times larger than 4G and 10,000 times larger than 2G. The power consumption per bit of our 5G base station is ten times lower than 4G, and the size is 70% smaller. Our 5G base station is very small indeed, about the same size as a briefcase. It's also light – about 20 kilograms. You don't have to build a cell phone tower for 5G base stations, because they can be installed anywhere – on poles or walls. They can work for decades because they are made of anti-corrosion materials. This means that our 5G equipment can be installed even in underground sewage

systems. It is especially suitable for European markets, where there are many areas with historical buildings and it's impossible to build giant cell phone towers like those in China. Of course, the existing towers in China won't lay idle, because our 5G base stations can be installed on them too – it's just that we don't need to build new towers.

With our 5G base stations, our customers in Europe can reduce their engineering costs by 10,000 euros per site. They won't need to use cranes for installation, and they won't need to build cell phone towers. In the past, our customers had to use cranes to install huge pieces of base station equipment, and the surrounding roads had to be blocked off during the installation process. Now, they can easily install our 5G base stations by hand. It's super easy.

The bandwidth of 5G is very high – so high that it can support a huge amount of high-definition content and easily transmit 8K video. They're saying that 5G will reduce costs tenfold; in fact it's more like 100-fold. This means that ordinary people can watch high-definition TV programs, and they can learn a lot from these programs. To develop further, every country needs to rely on culture, philosophy, and education. These form the foundation of national development. Therefore, 5G will change our society for the better. Latency on 5G

networks is extremely low, so 5G will be rapidly adopted in many industries for all sorts of purposes.

[Regarding the image referred to earlier] The CCTV reporter was concerned about whether the engine of the aircraft was broken. While there might be "holes" in our aircraft wings, we will continue to focus on developing our core and to lead the world in these areas. The more advanced a product is, the more comprehensive its Plan B will be.

Do you think the international market has been disrupted?

Ren: I don't think so. Europe will not follow in the footsteps of the US, and the majority of US companies are communicating closely with us.

04 **You mentioned the impacts on Huawei. The letter from HiSilicon President has created a lot of excitement in the media. People in the chipset industry take an objective approach to the gaps between companies in China, the US, and other countries in terms of chips and other core components. What do you think is the position of Huawei's in-house products and R&D? The letter also gave an assurance that Huawei can ensure supply continuity. Is that assurance true? Is there any critical point? Where is it?**

Ren: I think that if you feel worked up about something, you should start by taking a cold shower. In my opinion, what's most important is to be calm and level-headed. Getting over-excited and shouting slogans is of no use if our capabilities are not strong. The important thing is to work hard towards success.

It's worth learning from US companies in terms of their depth and breadth in science and technology. We lag far behind in many aspects. Some small US companies are providing super advanced products. We have only focused on our business and become a leader, but we haven't attempted to compare ourselves to the US as a nation. On a business level, I think the gap is quite small between Huawei and certain US companies. On the national level, however, there are huge gaps between China and the US.

The gaps on the national level have much to do with economic bubbles in China. There are bubbles in many sectors, including peer-to-peer (P2P) lending, the Internet, finance, and real estate. There are copycat products, which are also bubbles. As a result, bubbles are appearing in academia, too. Developing a new fundamental theory takes several decades. If academics focus more on shouting slogans than on developing solid theories, then our country will not become stronger in the decades to come. We should keep our feet on the ground and concentrate on our work.

05

My question is about chips. The letter from Ms. He Tingbo, HiSilicon President, was very inspiring. Records show that HiSilicon was established in 2004. After so many years of efforts, you can produce your own chips for many purposes. How did you make the chip plan in the first place? How did you or Huawei decide to make your own chips? Ms. He said that Huawei began planning for the most extreme conditions many years ago. During an interview two days ago, you said that Huawei no longer needs US chips. Can you tell us more about the planning process? Is the planning result in line with your current situation? How well can you serve customers if the US companies stop supplying chips to you?

Ren: We have made a lot of sacrifices – we have paid very little attention to ourselves and our families, especially our parents. We have done all this because our goal is to make it to the very top. Nowadays, we cannot help but shouting our goal out loud: We want to be the global leader. We want to be No. 1 in the world. In the past, we didn't let our employees say it out loud, because we thought it might cause conflicts with the US.

In early 2000, we were hesitant, and we wondered if it would be possible for Huawei to wear an "American cowboy hat". So we decided to sell Huawei to a US company for about 10 billion US dollars. A contract was

signed with this company, and all relevant procedures were completed. The deal was ready to be completed once it received the approval of the US company's Board of Directors. While we were waiting for approval, the negotiation team, including me, all put on floral-print clothes, running and playing ping pong on the beach.

While we were waiting, the Board of Directors of the US company was reelected. Their new board chair was somewhat short-sighted and rejected the acquisition deal. If we had been sold to this company, we would have been able to get our American cowboy hat and try to take the world by storm. After this deal failed, our senior executives were deciding whether to sell Huawei to someone else. All of our younger executives unanimously said no. I could not reject this, so I replied, "We will have to square off against the US when we reach the top. We need to get prepared." Since then, we have been considering the question of what happens when we meet the US at the top, and have begun to make preparations for this. That said, we will ultimately embrace each other because we want to work together with them to make contributions to society.

Other Huawei executives have stated that Huawei is able to continue serving customers. Will the US ban affect your major customers and business? How will you respond?

Ren: We will certainly be able to continue serving our customers. Our mass production capacity is huge, and adding Huawei to the Entity List won't have a huge impact on us. We are making progress in bidding worldwide.

Our growth will slow down, though not by as much as everyone imagines. In the first quarter of this year, our revenue grew 39% over the same period last year. This rate decreased to 25% in April, and may continue decreasing towards the end of this year. But the US ban will not lead to negative growth or harm the development of our industry.

06 **If the US cuts off the supply chain, how will the industry be impacted? Two days ago, I saw that Fang Zhouzi (an Internet celebrity) tweeted "If the spare tire is good, why not use it before a blowout?" What's your opinion on it?**

Ren: If we use spare tires in all our products, that means we are seeking the so-called "independent innovation". The main purpose of independent innovation is to become a dominant player. But we want to have partners all over the world. For that reason, his idea of using the spare tire before a blowout is not on our minds. He doesn't understand our strategic thinking. We

don't want to hurt our partners. We want to help them have robust financial statements, even if it means we have to make adjustments.

As I mentioned, we don't intend to stop using the components of US companies, but we haven't told them about this. We hope US companies can continue to be our suppliers, so that we can serve humanity together. Previously, we've shared information about our chip development with our suppliers. We've even shared our research results with them. We outsource production to our suppliers. That's why the suppliers are so kind to us. Again, to answer the question "If the spare tire is good, why not use it before a blowout?", spare tires are backups. Why should we use them before our current tires burst?

How will the industry be impacted if the US does cut off the supply chain?

Ren: Our company will not end up with an extreme supply shortage. We have got well prepared. At the beginning of this year, I predicted that something like this would occur two years later, and that the US would not take action before the US lawsuit against us was settled in court. We were quite sure that they would take action against us whatever the result was. We thought we would have two years to make preparations. But when Meng Wanzhou was arrested, it sparked

everything off.

You may know that we were also working during the last Spring Festival holiday, and I paid visits to our employees working during the holiday. In China alone, 5,000 service personnel, such as security guards, cleaners, and canteen workers, stayed to serve our "fighters". They received salaries several times higher than normal. The company paid double for food from suppliers, and paid service personnel extra. Many of our staff didn't even go home during the Spring Festival. In order to save time for work, they made makeshift beds on the floor to take a nap. Also during the May Day holiday, many of our staff chose to stay here.

07 Speaking of Plan B, how much has Huawei invested in this plan over the years? If Plan B is not put into use, will Huawei continue to invest in the plan?

Ren: We have invested so much that I cannot give a concrete figure. For both Plan A and Plan B, the budget and headcount were allocated together. Previously, Plan A received most of the budget, but now most of the budget will be allocated to Plan B. I don't know exactly how much the budget is. Every report I receive is several pages long. And instead of asking questions about every single component, I just do a general review. Making a

plan is just one step. We have to identify the key phases for each component. So we are preparing little by little. Otherwise, we would not have hired 80,000 to 90,000 R&D engineers.

08 After the US export control goes into effect, Huawei's suppliers in Japan, Europe, and Taiwan are expected to help Huawei a lot. If this export control fails, do you think the US government will put pressure on companies like TSMC? Huawei can produce its own chips, but it does not have the capabilities of the entire value chain.

Ren: If more companies refuse to succumb to the pressure, then even more will follow. Don't worry too much about this. After all, this is not happening.

Considering Google's recent action, users in Europe are very worried that Huawei phones will not be able to use the latest Android system in the future. What's your opinion on this?

Ren: Google is a good company – a highly responsible company. They are also trying to persuade the US government to solve this problem. We're now discussing viable solutions for this, and our experts are still working on this. So I can't give you a detailed answer today.

09

How long will this tough situation last? Will this be a turning point in Huawei's development?

Ren: You are asking the wrong person; you should ask President Trump this question. I think there are two sides to this. Of course, we will be affected, but it will also inspire China to develop its electronics industry in a systematic and pragmatic manner. In the past, China threw a lot of money at developing the industry, but it turned out that this approach didn't work. To build bridges, roads, and houses, maybe it's true that we just need to invest money, but to develop chips, money alone is not enough. We need scientists, physicists, and chemists as well. How many of our people are truly studying hard? How many doctorate papers bring true insights? Under such conditions, it is very difficult for China to succeed by relying on its own innovation, so why not take a cross-border approach to innovation? We can establish innovation centers in many countries. We can establish research centers in any locations that have the capabilities we need.

A lot of talent has returned to China, which is very important. But China's personal income taxes are relatively high. If talented people returned to China from abroad, they would have to pay a lot of taxes. We cannot expect them to act like Lei Feng forever – Lei Feng gave everything he had to the country and to the

party. Although they are all top experts, there are no incentives for them, and they even have to pay higher taxes. Recently, I heard that the personal income tax rate will be cut to 15% in the Guangdong-Hong Kong-Macao Greater Bay Area, but how exactly will this policy be enforced? Will people entitled to this policy need to get a hukou, or a job in this region? If yes, what's the point of this policy? There should be a flow of scientists. If they work eight hours every day at the same place, are they true scientists? We need to create opportunities for scientists to come back to China.

The first major shift of talent in the world occurred with the move of three million Jews from the Soviet Union to Israel. Israel then became a scientific and technological hub. The second shift is underway. The US is not open to foreign countries and lots of talent cannot engage in classified research. A well-known US media outlet wrote an article, asking the US one question: "If China invented a cancer drug, would it pose a threat to US national security?" A US cancer center dismissed three Chinese scientists, which is the reason the journalist asked this question.

As a result, many scientists have lost confidence in working in the US. Why not take this opportunity to welcome them back to China? But they might ask, "How? In China, it is difficult for our children to enroll in

schools; we cannot buy cars because we have no hukou; and we have to pay high taxes." We need to adjust our policies to attract talent from around the world. 200 years ago, the US was just a barren land of Native Americans. It was the right policies that turned the US into the global leader it is today. China's civilization is 5,000-years old. With such a solid foundation, we need to create favorable policies to attract talent from around the world to start businesses in China.

East European countries are relatively underdeveloped, but a large number of leaders, scientists, and financiers in the US are East Europeans. Why don't we welcome talent from these countries to China, or establish research centers in those countries? We can establish theoretical research facilities with China as the center to fight against US restrictions. If we stick to our current approach, it will be difficult to succeed. China is weak in basic theories, though it has seen some progress over the past few years.

I have emphasized the importance of mathematics at the national science conference, and I heard that graduates majoring in mathematics can now more easily find jobs than in the past. How many of us are willing to study mathematics? I didn't major in math. I once said I wanted to find a good university to study math after I retired. The president of a university asked

me why. I replied I wanted to study the Second Law of Thermodynamics. He then asked why again. I said I wanted to study the origin of the universe. He said he would welcome me as a student. I still haven't retired yet, so it looks like I won't be able to go. When I was an engineering student, I studied higher mathematics, which is about the very basics of mathematics. China must remain pragmatic and work harder to make changes in mathematics, physics, chemistry, neurology, brain science, and many other disciplines. Only by doing so can we secure a foothold in this world.

China's philosophy to date is mostly about metaphysics. Although some have adopted Buddhism, all the texts are in Sanskrit, and they have not been translated into Chinese. The West has promoted metaphysics and mechanical materialism, giving birth to disciplines like physics, chemistry, mathematics, and geometry. That's why they have advanced industry. Based upon their strong industry, they have built industrialized nations and led the whole world.

I don't mean that metaphysics is useless, though it focuses on virtual things that don't exist in the real world. The gaming industry is developing rapidly in China. Many of our modes of production may be virtualized. About 50% of AI scientists are Chinese, and if they are not welcome in other countries, we should

welcome them here in China. They can then work on platforms at the bottom layer, providing us with a solid foundation.

I believe that if we can bring in outstanding talent, it will be good for our reform. If we keep emphasizing independent innovation, I think we are wasting our precious time.

10 **Has the Hongmeng OS been used on a small scale within Huawei?**

Ren: Sorry, I can't answer this question today. We can make our own operating system, but it doesn't necessarily mean that it will replace other operating systems. We need to use operating systems for our work in artificial intelligence and the Internet of Everything, but I'm not clear on which are used and which are not. So I can't really answer your question yet.

Many articles these days are reporting on "Huawei shocks" – that is, how Huawei has been shocking the whole world.

Ren: Our staff are not sensitive to such reports. None of us has been shocked, because they are nothing special to us. The articles online often exaggerate a lot. For example, it was reported online that Infineon stopped

their supply to us. No such thing has happened. It was a made-up story. If you really want to know what's going on with us, you can visit our Xinsheng Community. We don't ban accounts, even if people criticize the company there. In fact, the HR department reviews how people are criticizing us. If anyone provides especially constructive criticism, the department will look into their performance over the past three years. If they are high performers, they will be transferred to the Secretariat to help with some specific issues. After being trained at our "Headquarters of the General Staff" for half a year, they will be sent to other departments. These people have a lot of potential to eventually become leaders. On the contrary, blindly singing our praises online may make us complacent, because it's no more than empty talk. When people post specific criticisms on our Xinsheng Community, we will analyze the situation accordingly. Without self-criticism, we wouldn't be surviving today.

11

I want to ask you a question about Huawei's Plan B, which many people are concerned about. Ten years ago, you began to show a sense of crisis and talk about how international situations would affect Huawei.

Ren: All my speeches regarding Plan B published by Huawei's Executive Office are publicly available. I don't remember exactly when I began to talk about it, but I

have repeatedly mentioned our Plan B. People just didn't pay much attention to it until the recent attack that the US launched against Huawei.

Over the past several years, you have shown a great sense of crisis, made preparations at both the macro and micro levels, i.e. in both strategy and how to ensure business continuity. When what you have envisioned becomes a reality and the attacks against Huawei become more serious than what you previously thought, do you have any new ideas? We have seen too many articles talking about how trade frictions between China and the US affect Huawei. When the challenge truly comes, do you have any new ideas?

Ren: Business continuity is all about our Plan B, or our "spare tire" plan. Spare tires ensure that when cars break down, they can continue running after tires are replaced. We have ensured our business continuity step by step. In fact, many parts we use in our products have been put into production. Despite this, we are open to parts from outside the company. Half of our parts are produced by other companies. I once said in an article that we should buy at least 50 million chipsets from Qualcomm every year. So we have never excluded or resisted foreign companies.

The world's largest spare tires are atomic bombs.

What can they be used for? Since World War II, they have never been used again. Senior government officials in China have often worked on atomic and hydrogen bombs. And their loyalty to the country also counts. Those who are both capable and excel at technology can be promoted to a minister or provincial governor. Some can even become governors by age 40. I really envy them. When I was 40, I was still finding a job.

Spare tire is now a buzz word. In fact, it's quite normal practice in our company. He Tingbo has become well known because of her letter regarding Plan B. She published the letter just during the night when the US issued the ban on Huawei. She just couldn't bear it anymore. She has been through a lot these years. She felt bad. Her team has been working so hard, but they just couldn't keep their chins up.

So you mean that spare tires are always available at Huawei and you don't know whether they will be used.

Ren: Spare tires are certainly useful. They are part of our solutions, instead of being independent of them. We will use them on a rolling basis when necessary.

12

Now people have two completely different sentiments towards Huawei. Some have shown great patriotism and escalated their support of Huawei as a patriotic

act. Some think that support toward Huawei has become entwined with patriotism toward the whole country; in other words, people will not be considered patriotic unless they support Huawei. This situation is now becoming more serious.

Ren: My children prefer Apple products over Huawei's. Does it mean that they don't love Huawei? Of course not. I have mentioned this quite a lot, and Richard Yu (CEO of Huawei's Consumer BG) was mad about me – he saw it as me promoting other companies' products over Huawei's. But this is the reality: We cannot simply say that one is patriotic if they use Huawei products and they are not if they don't use Huawei products. Huawei's products are ultimately commodities. People use them if they like them. Politics should be left out of it. Huawei is just a company. We have never said anything about contributing to Chinese national pride in our advertising. At our latest oath-taking ceremony, someone might have shouted something along those lines, but we immediately issued a file to discourage shouting out such slogans. They can hold celebration parties and give out medals. It's okay to say things like this privately in their spare time, sure, but we must never stir populism.

I often use a lot of examples just to throw some cold water on Huawei. We should not promote populism; populism is detrimental to the country. To have a

promising future, China must be more open. Following the recent China-US negotiations, CCTV said China should further reform and open up. I was very happy to hear that. In fact, we should have reformed and opened up earlier. China has made a commitment to the WTO and we need to honor this commitment after we benefit from it. We should make some contributions so that we can unite more friends around us. China has too much money. Why are we only putting it in the US? Why not lend some to Europe, Russia, and Africa? One might worry about their ability to repay it. These countries use their national credit as collateral. Well, maybe they can't repay it this year, but what about in 100 years? We don't have an urgent need for the money anyway. Doing this would help disperse our risks. Why does China only buy agricultural products from certain countries? It could also buy from Ukraine. That would contribute to their economy.

13

You've mentioned that developing chips requires not only money but also physicists and mathematicians. As a company, Huawei, as well as you personally, have repeatedly talked about basic education and basic research, and we also know that Huawei focuses on this area from some of your advertisements. What specific actions is Huawei taking in basic education

and basic research? What kind of support will this provide to Huawei's future development?

Ren: First, we have 26 centers of expertise for R&D globally. We currently have over 700 mathematicians, 800 physicists, and 120 chemists working at Huawei. We have an Institute of Strategic Research, which provides a large amount of funding to well-known professors at top universities around the world. We don't expect return on this investment. The way we sponsor research is similar to how investment works according to the US *Bayh-Dole Act*. It's the universities that benefit from the investment. By doing so, we will work with more scientists researching technologies at different stages.

5G standards are widely considered to have a huge impact on society. Few people would imagine that they originated from a mathematics paper written by Turkish professor Erdal Arikan over a decade ago. We discovered this paper two months after its publication. Then we started to do research, perform analysis, and apply for patents based on this paper. Thousands of Huawei employees have been involved in this research. It took us a decade to convert the math paper into technologies and standards. We have the most 5G standard-essential patents in the world – about 27% of the total.

Professor Arikan is not a Huawei employee, but we sponsor his lab so that he can take on more PhD

students, whom we also support. We also sponsor a university professor in Japan. He once had four PhD students, all four of whom later joined Huawei but continued to work at his office. Then he recruited four more PhD students to work for him, with all eight working for him at the same time. All those papers belong to them, not us. If we need to use their academic outcomes, we need to pay them. This approach is similar to the US *Bayh-Dole Act*. We use such approach to work with more scientists.

We held a global scientist conference last week, and I attended the conference remotely through video. Several brilliant young scientists, all doctorate degree holders, attended the conference and introduced the technology to me. They explained to me what each of those papers would mean to society in the future. We constantly have this kind of communication around the world. This enables us to absorb new ideas, and also helps them understand our requirements. This way, we are able to constantly inform each other.

When it comes to winning talent, Western companies are more far-sighted than we are. They identify talent and then recruit them to work as interns, providing dedicated training to them during their internship. This is different from the traditional job seeking method graduates follow in China.

Now we have more opportunities to compete with US companies in terms of recruitment, but we are not strong enough to attract the talent. We give job offers to some excellent, very talented students as early as their second year of university. For example, students from the Novosibirsk State University have been the champions or runners-up in the International Collegiate Programming Contest for six consecutive years. Google paid salaries five or six times higher than normal to employ them. Starting this year, we will pay even more than Google to attract such talent to work on innovation in Russia. We will join the competition for talent.

We don't require scientists to always be successful. Failures are also a form of success, because they develop talent. In this way, we are able to constantly move forward.

14

I visited Huawei's lab and saw many inventions, such as anti-corrosion equipment and heat conduction. They seem to be based on chemical theories we learn in high school. These applications are magical. Is this a reflection of what you call basic science and basic education? What support will such basic science bring to Huawei at this critical moment?

Ren: Actually, even junior high school students learn

the general equations for a nuclear chain reaction, but it's not an easy task to build an atomic bomb. Basic science seems to be simple, but it's difficult to apply it in practice. Therefore, some foreign inventions may look simple, but they are based on numerous other inventions. A small component may be developed based on thousands or even tens of thousands of patents.

15 You are talking about enhanced investment in mathematics and basic disciplines. What about Huawei's level of investment in the world? What made you recognize the importance of basic disciplines? What are your goals and expectations for future investment?

Ren: Let's look at an example. The camera of the HUAWEI P30 smartphone is a reflection of how mathematics can be applied in practice. Photos are not simply captured but calculated through mathematics. Human eyes are equivalent to about 100 million lenses, but a camera only has one lens. Our smartphone is able to use calculations to divide the image captured by the light sensors in a single lens into tens of millions of visual lenses, and then reproduce the image.

Mathematicians in our company have a slogan – Making smartphones that outperform human eyes. I

once criticized this idea in an internal speech. I think it's unnecessary. However, they are stubborn and I can't change their minds. They say our smartphones can capture an image of the moon and views a thousand kilometers away. This may be true, because mathematics can help restore weak light signals.

When I visited our mathematicians in our research center in Nice, France, I said, "The sea and sky of Nice are blue. Why are the formations developed by our mathematicians also based on a blue color?" Previously, the images captured by our smartphones were bluish, but now this seems to have been corrected.

Our strategic "spare tires" have contributed to the fast development of our smartphones. Some strategic "spare tires" developed for our network business were not used in that area, and were transferred to the consumer business. The consumer business has benefited a lot from these resources, and is able to upgrade its products every three months. Most contributions come from mathematicians. Physicists have also contributed to the development of trichromatic sensors.

Therefore, business in the electronics industry is impossible to develop if we are still relying on components manufactured by others. There are also mathematical achievements in other vendors' components, but you need to pay more money to gain

access to what they developed. I think we should strive to be the world leader in this area.

16 For a period the US has been attacking Huawei, and also urging its European allies to put pressure on or even block Huawei. If the US continues to push its European allies to close their markets to Huawei, will you visit 10 Downing Street or the Élysée Palace in person to persuade them to open their doors to Huawei through more direct and effective methods?

Ren: I used to have afternoon tea at 10 Downing Street. They asked me how I learned to catch up with the rest of the world, and I said it was the afternoon tea. Therefore, they received me with afternoon tea at Downing Street. We've been communicating with leaders of different countries. Every country has their own interests. The campaign of the US will not be powerful enough to call on everyone to follow them.

17 I've been closely following what phone manufacturers can do to support accessibility for people with disabilities since last year, because technological progress plays a very important role in helping these people. Huawei is a company with lofty aspirations. This year's Global Accessibility Awareness Day fell

on May 16 last week. As a leading tech company, what has Huawei done to promote accessibility and inclusion for people with disabilities? What plan do you have in this area?

Ren: During one of my trips to Japan, I tried a pair of special glasses made by our company that allowed me to clearly see employees working thousands of miles away, and I could provide guidance and instructions to them. With these glasses, I could see all drawings, and know immediately whether something I was looking at was correct or not. This is something we are doing now, but I don't know whether these devices have been launched in the market.

Theoretically, I think we will be able to support people with disabilities in future. I don't know exactly what progress we have made on this front. I'll ask someone to check, but I do believe that theoretically speaking we can stimulate people's senses through the cranial nerves.

The wireless glasses I mentioned just now allowed me to see the engineering work our employees were doing thousands of miles away. Our scientists showed this new product to me. But it has not been launched in the market.

18

Apple has been paying a lot of attention to basic education, and they have done a very good job in this area. iPads and iPhones are very useful to help children learn. Huawei also takes basic education, including basic disciplines, very seriously. Actions speak louder than words. Specifically, what has Huawei done in this area? Can you share your ideas about education?

Ren: The basic responsibility for improving people's competences and qualifications lies with the government. No company can assume the responsibility for improving the capabilities of our nation. We talk about education, but that does not mean we should get involved in this domain.

The only way for China to achieve a positive outcome in future competition with the US is to improve the quality of education. As for commodities that can be used to help improve education, that is a separate matter.

To improve the quality of education, I believe the most important thing is to show respect for teachers. If teachers are well respected across society, more people will want to become teachers. Teachers are highly respected and well-paid in Shenzhen. That's why we have seen news reports about 253 candidates applying for a single vacancy in some schools in Shenzhen.

Huawei has helped Tsinghua University High School establish a school called Tsinglan School. The president of that school said it will become the best school in China, because the tuition fees there are extremely high. The school only enrolls around 2,000 students, and the admission pool is open to all of society. Many Huawei employees want to send their children to the school, and some asked me to help them get their children enrolled. I told them that there was nothing I could do about that.

What I'm trying to say is that we can significantly improve the quality of education only when the social and economic status of teachers improves. Why do I have so much to say about this? Both of my parents were rural school teachers working in a remote mountainous town in Guizhou Province, but they didn't allow their children to become teachers. If even teachers discourage their own children from becoming teachers, how can our country have a bright future?

I saw and experienced the many hardships my parents faced as a result of being teachers at that time in history – low social ranking, discrimination, and poor pay, so I never considered becoming a teacher myself.

19 I have two questions. First, the consumer business now accounts for the largest part of Huawei's revenue,

followed by the carrier and enterprise businesses. What proportions do you think these three businesses will take in Huawei's revenue in five or ten years' time? Second, in the current situation, how would you define the future role of HiSilicon in Huawei?

Ren: The role of HiSilicon is a support team to Huawei, one that moves forward in tandem with the operating team of the company. It can be likened to a fuel truck, a crane, or a field medic that moves forward together with the core operation.

As for our three business groups, we don't take the view that the most profitable one is the most important. Only the department that is responsible for building network connections will be able to become number one in the world. It is the very department that has come under attacks from the US. I have compared it to a badly damaged aircraft. Actually, we have realized that this department does not face as many difficulties as others because it has been preparing for a long time. Our 5G, optical transmission, and core network technologies are free from the pressure that is being put on this department, and these technologies will be the world leaders for many years to come.

20 The assembly order from HiSilicon has gone viral online recently. This unit has been hiring talent

from around the world. When will it become an independent unit in the future?

Ren: The answer is never. HiSilicon is a support team to Huawei's operating team, and will never become an independent unit. As I just described, to our core operation, it is like a fuel truck, crane, or field medic. Our operating team is the department responsible for building network connections. It may not necessarily generate the highest revenue for our company in the future, but it is the strategic high ground. The US has taken administrative measures against Huawei because it could not seize the strategic high ground. We will never give up this strategic high ground just for the sake of making more money. HiSilicon will never become part of our operating team and steal the thunder at Huawei.

21

We know Huawei has made preparations in terms of business continuity management, but a server or base station involves too many parts and components. Why are you so optimistic?

Ren: We will make a list of the problems we face and solve them one by one.

22

I have a question about R&D. Huawei has invested heavily in R&D. In which areas will you focus your

future investments? What technological preparations will you make?

Ren: We have been working on an opening in the city gate for three decades. At first, we had several dozen and several hundred employees focusing on this opening, then we had tens of thousands, and now we have over a hundred thousand. We have been focusing all of our energy on this same single opening, which inevitably results in breakthroughs. Every year we invest 20 billion US dollars in R&D, and no listed company has ever had the courage to invest so much money into a single area like we do.

We have been working on the information transmission domain. Our Consumer BG works on the "water taps", while our Carrier BG works on the "pipes". The harder we work on this domain, the more likely it will be for us to lead the world and maintain our position. In addition, we will continue to increase our investment in R&D.

I do not think that some downward pressure on our financial performance will affect our investment in R&D. Our employees are not greedy; they have enough money to make ends meet. I have even made comments about the partners of many of our R&D employees for being frugal. Some people asked me how I could identify our dedicated employees. I said if we talked to those people

who purchased several items at luxury stores, and found out that their partners worked at Huawei, then those Huawei employees are our dedicated employees. After they make money at Huawei, their partners should be able to spend it, so that they are motivated to make more money.

Huawei will continue working in the ICT domain, and will not enter other domains. Rumor has it that Huawei will engage in automobile manufacturing, but that's not true. Our connected vehicle products serve world-leading carmakers, and mainly include vehicle-mounted computing and electronics products. This may develop into a huge industry. We work with companies in the automotive industry to achieve autonomous driving. However, putting Huawei's logo on a car sent by our partner to us does not mean that we will manufacture cars. We will not randomly enter other domains.

23

You take basic education very seriously. Is it possible for you to become involved in basic education in one way or another in the future?

Ren: Basic education is the responsibility of the government. Companies should focus on their own business. We don't want to be distracted during our business operations by becoming involved in basic

education.

Building massive networks for humanity is Huawei's biggest social responsibility. We have connected three billion people around the world, including people in some African regions where Western companies don't want to do business because they cannot make money. If Huawei collapsed, it would have a huge impact on the world.

Huawei will not engage in education. We are even going to downsize our operating team, and get rid of some less important departments. Employees working in these departments can continue to move forward alongside us as our partners.

During the last Chinese Spring Festival vacation, when Huawei employees worked overtime, more than 5,000 people provided services. During this period, we doubled the prices we paid for the services we received and promptly provided extra rewards to these people.

24

In our eyes, Huawei's management philosophy is Mr. Ren's management philosophy. What do you think is the essence of Huawei's management philosophy? International management theories have long been dominated by the West. Do you think now is the time for China's management philosophy to be exported to the outside world? There are now many books

about Huawei's success formula. Is there really such a formula for success? Can others copy Huawei's model?

Ren: Huawei has no philosophy. Personally, I have never studied philosophy or carefully read any philosophy book. I've never met the authors of those books you mentioned. It's possible that they just made them up. The so-called Huawei philosophy is casually written, and has nothing special. If there really is such a thing as Huawei philosophy, I would say it is to "stay customer-centric and create value for customers".

This is because our money comes from our customers' pockets. There are three ways to obtain customers' money. The first is to rob, which violates the law. The second is stealing, which is not the right way, either. If you stole money, you would be detained in the police station. The third is to have our customers willingly give us their money. To make that happen, we must provide them with quality goods and services that they need. That's our one and only secret of success.

I'll take our company's cafés as an example. They are doing very well. Why? They do business carefully and sincerely, and don't play tricks. At first, five or six Huawei employees managed these cafés and lost money. They had high salaries and company shares, but lost money in the cafés businesses.

Then I told them to start up their own cafés. This way, they ended up earning 700,000–800,000 yuan every year. Some people at headquarters said they wanted to investigate these cafés, as they were suspicious of the reason why these cafés had started making a profit. I told them that every time they investigated, I would dismiss one of them. Why? Because their teams were overstaffed and couldn't focus on the right things.

As long as the cafés pay their rental, water, and electricity expenses, meet sanitary requirements, and maintain an appeal to our employees, why do you bother minding something that is none of your business? That's also why Huawei has a very small logistic team. It only has 703 employees but provides support for over 180,000 Huawei people across 170 countries and regions around the world.

25

I've recently read a speech you delivered at a Representatives' Commission meeting. In the speech, you described Huawei's approval of the Charter of Corporate Governance as an institutional development milestone. The document also described Huawei's corporate governance structure. What is the direction of Huawei's governance?

Ren: Actually, our governance structure and Charter

of Corporate Governance have been published on our Intranet. The election of the new Board of Directors took more than a year, and more than 90,000 people were engaged in the process. They keep learning about and communicating these documents, but the media is not very interested. As to your question, I cannot fully explain this to you today. It is a comprehensive system.

What kind of company does Huawei want to become in the future? Or which direction does Huawei want to move along?

Ren: We will not allow capital injection. Besides that, we are open to discuss anything.

26 **We have a deep impression that Mr. Ren has a very strong sense of crisis, even in times of peace. For example, Huawei began to have a Plan B for chips more than a decade ago. I'm very curious about how you got this sense of crisis at first?**

Ren: You would build a sense of crisis if you had been beaten by others many times.

27 **In your answers to many questions, you said Huawei has a Plan B and you are optimistic about the current situation. What is your biggest concern at**

the moment? This event has affected your family members. Have your daily exchanges with your family influenced your decision-making?

Ren: They detained my daughter, trying to shake my will, but my family's encouragement has solidified my will. In her letter to me, my daughter said she would be mentally prepared for the long run. She is very optimistic. That has greatly reassured me and eased my pressure. I need to go beyond myself, my family, and Huawei to think about the world's issues. Otherwise, I cannot stay objective.

International journalists were very candid when they talked with me. Our public relations department has published the transcripts of these interviews. I will give them to you today. Why are we speaking out so frequently? If we took a narrow view, we would be on the opposite side to the Western media, and even to you. However, I should avoid the influence of personal opinions, so that we could discuss issues on an equal footing.

Most of Huawei's executives do not consider issues based on their personal interests or our corporate interests. We are a global company, and we have many friends that accept and support us around the world.

28

I am very interested in proprietary intellectual property rights and independent innovation. Many people think that proprietary intellectual property rights and independent innovation are the only way to ensure survival. You mentioned just now that HiSilicon has created some "spare tires" to support Huawei's long-term survival, and this is built on your independent innovation. But you also said that you would give up non-critical parts of an "aircraft" if that's the right thing to do, because you don't want to waste your time and energy. Why is there such a big difference?

Ren: If you mean the spirit of independent innovation, then I would encourage it. Innovation should build on human civilizations. This is the right approach. All scientists are independent innovators. Why? They crack some mysterious questions that no one can understand.

But we must understand that we need to stand on the shoulders of our predecessors to promote scientific and technological innovation. HiSilicon does not innovate independently out of nothing. They have paid a huge amount of royalties to obtain licenses for the use of others' intellectual property rights. They have signed cross-licensing agreements, some of which are permanent licenses. Our innovations are intertwined with others, and we have produced our own innovations building on those of others.

We agree that we need to encourage the spirit of independent innovation. But we must clearly define it. If you make something that others have already produced, you cannot use it. If you want to use it, you have to pay for their original ideas. This is what the law says. Patents are granted to those who filed for them first.

Alexander Stepanovich Popov first discovered radio waves, but the Soviet Union suspended the announcement of this news for the sake of confidentiality. Instead, Guglielmo Marconi in Italy filed the first application, so he was granted a patent for the invention of radio waves. Many people thought airplanes were invented by the Wright brothers, but actually, the Wright brothers were not the inventors. They were just the first to fly the airplanes. Nikolay Zhukovsky was considered the real inventor of airplanes. His work on fluid-mechanic equations helped lay the foundation for aerodynamics and lift the wings.

Why are our jet engines still not good enough today? Who invented jet engines? The Chinese.

When Deng Xiaoping visited the UK to buy Spey engines, Spey agreed to sell their engines to China. When Deng asked further whether they would sell their engines for military use, they also said they would. At that time, what China wanted was to buy civil engines and use them to make civil aircrafts.

Later on, the British also sold engines for military use. The engines in China's Xian H-6 bombers were also bought from the UK.

When Deng stood up and saluted the British scientists on-site, the British scientists stood up to return a salute. They said, "We have to thank the great inventions from Chinese scientists."

When Deng returned to China, he managed to find out who invented this engine. It was Wu Zhonghua. Where was this guy? He was breeding pigs in Hubei Province. So Deng decided to assign the inventor to serve as the Director of the Institute of Engineering Thermophysics in Beijing. Why couldn't we build on Wu's work and delve deeper into it? Why couldn't we make theoretical breakthroughs in jet engines?

Now, aircraft engine design is an experimental science, not a theoretical science. But aircraft design must be a theoretical science. You can have a look at a speech about aircrafts by Sergey Kuzhugetovich Shoygu in Russia.

According to him, US aircrafts are very sophisticated and they can fly for 4,000 to 5,000 hours. But Russian aircrafts are not that advanced and can only fly for 1,000 hours.

Shoygu asked, can an aircraft fly for 1,000 hours

during wartime? Actually, most of them are destroyed before they get the chance to fly for 1,000 hours. So why bother creating an aircraft that can fly for 4,000 or 5,000 hours? What's more, they are very expensive. So the Russians have determined their aircraft design principles according to their actual needs.

He said that an aircraft was not flying very fast because it lacked a flat metal surface. So the Russians added layers of laminar film to the wings of the aircraft. This helped solve the lubrication issue at high-velocities. This way, Russian aircrafts could fly very fast as well.

The stealth principle of the F-22 stealth fighter was invented by mathematicians from the Soviet Union in the 1950s. They said that the diamond cut surface had stealth functionality. But after a long period of research, the Soviet Union concluded that this function was useless. Why? Because they couldn't make it happen.

They approved the publication of the paper on this principle. When the Americans read the paper, they thought they had found a treasure. It took the US 20 years to produce the F-22 stealth fighter. But now, our meter-wave radars can detect F-22 fighters.

In fact, there were many scientists doing original research in China in the 1950s, but now there are bubbles everywhere. How can this research environment

help make our country more competitive in basic research? We need to change the environment for research.

You made a very important point just now – we must be clear about what independent innovation is truly about. So are you against closed, and repetitive independent innovation?

Ren: If you mean the spirit of independent innovation, then I support it. But if you are talking about doing innovation independently, then I object to it.

If you define independent innovation this way, others would refute your point by referring to HiSilicon.

Ren: When it comes to innovation, HiSilicon also stands on the shoulders of others.

Zhu Guangping: Independent innovation does not mean innovating all by yourself. The key to innovation is to grasp the core part of a system, rather than reinventing the wheel. This would be meaningless.

Mr. Ren places great emphasis on mathematics. At its core, mathematics answers both the whys and hows. Say, you can easily make a hoe, does that mean you understand the principles behind it? What is the best shape, for example?

We know we can verify these things through

experiments. But what are the theories behind these experiments? How can we identify the gaps between our theories and experiments? What are the limits? We have to verify these with theories.

I don't agree with you. When it comes to automotive manufacturing, some say that Li Shufu is an important figure in China's automotive industry, because he was able to lever Volvo with capital. But people also call him "a giant with short legs", because he does not possess the technology to produce engines. Most automotive companies in the world possess the technology to produce engines, but Chinese companies don't. In this case, isn't independent innovation critical?

Ren: I'm not against Li Shufu, but can we say things like shock absorbers, steel shims, and tires are the products of independent innovation?

Let me tell you a story about how Germans make cars. When I visited Stuttgart in Germany, the dean of the University of Stuttgart's faculty of engineering took me to observe their first-year students' class during their first few weeks. Each student was given a piece of iron and a drawing of a wheel gear. They then had to make a gear with just a knife. After they made the gear, they would not be graded. They could only receive a grade when they fitted the gear into the gearbox, and the car had driven away and back safely. This is what underpins

the German automotive industry.

What are the differences between European cars and Chinese cars? Why are European cars more expensive? Because they are more reliable. Many companies can make cars, but that doesn't necessarily mean they can all make best cars. To make good cars, you need extensive technological achievements of human civilizations. So I don't think it can be called independent innovation.

Zhu Guangping: Independent innovation doesn't mean you do everything yourself. It means you need to find out what you are good at. We all know that weaknesses are usually what lead to failures. So the key is to identify your strengths.

Ren: We can buy things that we are not good at making ourselves. Why bother making things we are not good at?

If you can't buy things you don't have, then are you doomed?

Ren: The situation we are in is an extreme one, and not everyone has to go through this. We should move forward based on the achievements of human civilizations. If it is independent innovation like you said, where are you going to get the material for steel plates? If you have to source them from others, then it cannot be called independent innovation.

29

Do you think the situation you are in is accidental or will it be the new norm for Chinese companies in the future?

Ren: I've never spent time studying specific social issues in China. I'm speaking to you today because our public relations department is pushing me to do so. They treat me a bit like a shield that can block "bullets" coming towards us, and that's how I have come to be here. I'm old, and I can make some sacrifices because I don't have many things to worry about.

I spend most of my time researching the company's internal problems. I'm also interested in the technologies relevant to our businesses worldwide. This helps me identify what strategic mistakes we might have made. I don't really get along with my own family. I spend such little time with my children and my wife as well. She once accused me of only caring about my company, not them. If I also cared about social issues, I would probably end up losing my family. So I'm not in a position to comment on social issues and I don't have extra energy to study other Chinese companies.

30

Is there a way to address the spectrum concerns raised by the US Department of Defense?

Ren: I suppose I am addressing it?

31

I was given a brochure about your previous interview transcripts with foreign media outlets. I read it carefully and found some strange questions asked by foreign media. In fact, I noticed that there are some misunderstanding and ideological issues between countries. In your opinion, how can these issues be addressed? Have you ever considered changing the way Huawei will position and promote itself outside China in the future, or what you will do to improve your approach to globalization?

Ren: We do not seek to solve our reputation issues outside of China through media campaigns. I think we will ultimately need to solve these issues by providing excellent services to our customers. We are very advanced, and our customers will realize this if they start using our services.

Let me give you an example. The Chairman of the South Korean LG Group once reached out to me and said he wanted a 300 Mbps LTE network. I even objected to him at first. I told him 100 Mbps would be enough and 300 Mbps would not be necessary. He came to persuade me with the help of two interpreters. He insisted on 300 Mbps. So we sold him equipment that could deliver 300 Mbps. Soon after that, Pope John Paul II visited South Korea, and 300,000 people gathered in an area of 1.3 square miles. Everybody was taking

photos and sending them out through our 300 Mbps network, and the network did not crash.

The second example is about how we helped to ensure smooth communications during the Hajj. Before we took over the network, all carriers had suffered from network breakdowns during the event. However, this has not happened once since we started providing the services. The very moment before four to five million Muslims started praying, everyone would turn off their phones. When the praying was over, everyone would turn their phones back on and get authentication at the same time. But our network still did not crash and all communications went smoothly. This is a good example of how we shape our reputation in the world. We do not seek to change our reputation simply through media campaigns.

As for investments outside China, this is because we need to do this. For example, we have invested in an optical chip factory in the UK, aiming to make the UK the hub for the exports of these chips in the future. We also have factories in Germany and Japan. We build factories as needed, not for the purpose of boosting our reputation. We don't need a better reputation; we need purchase orders.

32

Yesterday we visited your Exhibition Hall for Virtual Restricted Shares. I had two feelings which lead to my two questions for you:

First, regarding the ownership structure, Huawei has taken a totally different path compared to other major technology companies in East Asia, such as Samsung Electronics and TSMC. In these companies, foreign entities or individuals hold at least 50% of company shares. This type of ownership structure means Western capital can obtain capital gains from leading Eastern Asian companies like Samsung Electronics and TSMC. What's your view on the differences here and the topic of capital gains?

Second, Huawei's ownership structure is a model that Huawei has been exploring and finds fitting. Huawei has communicated with Western media about this over the past few years. But I learned yesterday that there are still some misunderstandings among Western media outlets. They don't believe Huawei's shares are fully owned by its employees. Rather, they think Huawei's ownership structure is more of an employee rewarding scheme. This tells me two things about the West. First, Western technology companies value talent and technology, which I admire. On the other hand, they tend to misunderstand or simply do not understand things that do not work the Western

way. What do you think is the root cause of Western misunderstandings?

Ren: I'm not interested in capital, so I haven't done any research about that. If Western media outlets are interested in it, they can do the research themselves. But no matter what, I will not let external capital enter our company. The problem for our company now is that we earn too much money. This is partly because we cannot lower prices. If we lowered our prices, the market of other companies would be squeezed and Huawei would share the fate of Xiang Yu, the Hegemon-King of Western Chu, eventually failing. So we cannot do this as an industry player.

In this regard, Apple is a role model. It's like an umbrella beneath which many small companies shelter and survive. If Apple charged low prices, there would be no other mobile phones in the world. With the excessive money that we earn, we use some of it for strategic investments, but we don't seek horizontal expansion. Instead, we use it to fund universities and scientists. At Huawei, we have scientist conferences which bring together numerous leading scientists from around the world, which I think is a miracle.

So we don't let external capital into our company. Capital investors are inherently greedy, which would stand in the way of the realization of our ideals.

What do you think is the root cause of Western misunderstandings of Huawei's ownership structure?

Ren: Such misunderstandings do not appear just today. Western misunderstandings about China have existed for decades. It's okay as long as our ownership structure complies with Chinese laws and regulations.

33 **The US government detained Ms. Meng in Canada, and then imposed an export ban on Huawei, citing the Department of Justice's sanctions against Iran as the reason. In order to find a way out, would you be willing to talk with the US government, the Department of Commerce, and the Department of Justice?**

Ren: We have sued the US government, haven't we? We would rather talk with them in court through lawyers, where the US has to provide evidence against us.

That means you won't talk with them in private?

Ren: I don't have private access to them. Can anyone give me Trump's phone number?

34 **I'd like to ask a more relaxed question. Last year, you took a family photo with your younger daughter Annabel Yao and her mother Yao Ling. As a snapshot**

of one of your then-rare public appearances, this photo fascinated the outside world. How would you describe yourself as a father and a husband? How much time do you spend with your family? Since Annabel is now studying at Harvard, what kind of job do you want her to pursue in the future?

Ren: I feel I owe my children a lot. I was serving in the army when my first two children were still young, and went back home every 11 months. When I was at home, my children had to go to school during the day, do homework in the evening, and then go to sleep. Life went on like this every day, so we barely had any communication. Life wasn't very easy for my younger daughter, either. The company was struggling to survive at that time, so I had to spend over 10 hours at the company every day or go on business trips for months. To enter the international market and prove that Huawei's success was not built on corruption, I stayed overseas for a few months in a row and had little contact with my children. They have become who they are through their own efforts, and they demand a lot of themselves.

My little daughter danced 15 hours a week during her middle school and high school. She did homework every night after dancing, and didn't get to sleep until one o'clock in the morning. At her university, she works

until two o'clock in the morning, or even until 4 or 5 a.m. to do algorithms. She loves art, and when she was invited to the Le Bal des Débutantes, she asked me and her mother whether she could attend. I was very supportive of her. Because if I threw cold water on her even once and forced her to choose another way, she could easily blame me and her mother for any problems she ran into in the future. We felt it would be much better to support her in doing whatever she wants to. When she brought up the idea of taking a family photo, I was the first to support her and allowed her to post it online. Her mother had thought that I would decline this request, but I didn't. I owe my children, and the least I can do is support them, so that my daughter can focus on her studies and take control of her own destiny.

Could you please tell us a bit about your wife?

Ren: I have been married twice and have three children. My ex-wife is very tough. She used to be a political commissar of 300,000 Red Guards in Chongqing. She was a big shot back then and I was not even one of the Red Guards. I didn't have a girlfriend after graduating from university, and someone introduced her to me. I don't know what she saw in me, because she was already somebody and I was nobody. I had nothing but good academic performance. My family was poor and my father was locked up in a "cow shed". But she just

fell in love with me. After 20 years, our marriage came to an end. My current wife, Yao Ling, is very gentle and capable. She has dedicated over 20 years of her life to educating and cultivating our daughter. She has been successful in this regard. My ex-wife gets along with Yao quite well, and even my marriage certificate with Yao and my little daughter's household registration record (hukou) were taken care of by her.

35

Google has suspended some business with Huawei. To respond to this, Huawei has made a media statement. I'd like to know how Huawei will be impacted in terms of the Android operating system.

Ren: There would be some impact. Google is a great company, and we are both finding solutions and discussing possible remedies.

36

I see many job ads by HiSilicon these days, including on its WeChat account. Chinese companies, including Alibaba and Tencent, are facing the common challenge of attracting more high-end talent and international talent. What is Huawei's plan for building a high-end talent resource pool? Have you set any specific standards in terms of compensation and benefits for high-end talent?

Ren: The answer is a sense of mission. We will certainly set specific standards for compensation and benefits, but more importantly, I believe we need to give our employees a sense of mission and opportunities to fulfill their missions. We also need to allow our scientists to do research freely.

I toured Huawei's offices in Europe a few months ago, and I found that many non-Chinese employees have a good understanding of Huawei's culture. I myself am reading some books about Huawei, and I'm curious what drives you, as a private company with strong Chinese characteristics, to become an international company with a generally-accepted corporate culture.

Ren: What you read about Huawei in books written by people outside of Huawei is by and large untrue. Most of the information in such books comes from online documents, but we don't oppose this kind of writing because they live on this. I suggest you go to the Xinsheng Community and get access to real Huawei stories. Non-Chinese employees are basically the same as us, in that we both are committed to serving our customers. That means we share the same value.

China's work culture, including the recently discussed "996" working hour system, has conflicted with Western working cultures. I'm wondering how Huawei manages and coordinates these conflicts.

Ren: We respect the labor laws in every country where we operate and make sure the working hours are reasonable. But our employees have a strong sense of mission, which drives them to continuously make accomplishments. Our non-Chinese scientists actually work harder than our Chinese scientists, and many of them still aren't married despite being in their 30s or even 40s.

37 **As you mentioned above, Huawei's key operating teams are becoming more capable and stronger. While layoffs are a sensitive talking point in the Chinese market, many ICT companies are going to or have cut jobs. Since Huawei was established in 1987, there haven't been any massive layoffs. What's your opinion about layoffs?**

Ren: The number of former Huawei employees exceeds the number of current employees. How did they end up leaving Huawei? Some of them left of their own will. If some business fails, it is the commander's liability, not the employee's. When we remove a department, we should find a way for its employees who have developed many skills as they grow.

For example, the company recently commended the application & software department. I approved

the department's request to invite 10,000 employees to walk the red carpet, which ended up with several thousand employees. In 2017, we held a strategy retreat in Shanghai and decided to scale down the application & software department which had made no major achievements. When we decided to remove this department, I was afraid that its employees would suffer in their new departments because they might not have good performance or their personal grades were low. So I privately told the HR department to raise their salaries before they left. Two years later when I visited them, I found many of them had set out to a new journey even before their salaries were raised, and contributed a lot to the success of the Consumer BG and the Cloud BU. They went for strategic opportunities, and got promotions while finding the opportunities to make contributions. During this process of scaling down, most of the redundant personnel were transferred to key strategic operating teams. Only a few mediocre employees were advised to leave. While restructuring our organization, we remove departments, but don't dismiss employees.

38

Richard Yu said that you used an iPhone in the past, but now you use Huawei's own high-end phones. Are you using a P30?

Ren: The P30 is too advanced. My phones are not the

latest. If I use advanced phones, I have to study the new functions, which is a waste of time for me. I don't need new functions.

Have you always favored the CNBG (carrier network business)?

Ren: No. I often scold those who I favor. Otherwise, why do I scold them? I also scold Richard Yu a lot.

How do you see the growth of the CBG (consumer business)?

Ren: After all, it is a support business. It aims to make money and give it to the CNBG to help it become a global leader. The CNBG uses the money the CBG gives it to charge ahead and capture "Mount Everest". Even if we can't grow crops there, it is still right we capture it. This is the principle we follow. It's not that I favor the CNBG.

I think Richard Yu is very capable.

Ren: I didn't say that he is not capable. You media people are all saying good things about Richard Yu. Please call Richard right now.

Can you summarize the development of the CBG over the past several years?

Ren: When we recognize a department, we must not just praise it. We need to correct its mistakes and

drive it to move in the right direction. We have a lot of reflection internally. Sometimes, members of the Board of Directors Executive Committee quarrel, but they will often reach a consensus eventually.

Richard Yu: I hope that we can gain more of your support, boss. Some of your words might be misinterpreted or misunderstood, and some people even used these words to attack us relentlessly.

Ren: Richard, you don't walk tall today.

You set a 150-billion-dollar goal for the CBG?

Ren: They set it themselves, and I am sure they will not attain it.

You place hope in them, aren't you?

Ren: Market demand has approached the saturation curve. When you move forward along the saturation curve, you may put in a lot of effort, but cannot widen the gap between you and the followers. The gap will only gradually narrow. For example, it is very difficult to download two movies within a second. It doesn't actually matter much to users if they can download one movie or two movies within a second. Even if we invest heavily in technology for this, we won't see any big difference in its application. This will easily cause losses to the company. It is easy to take the lead while an

industry is rising. However, it is hard to do so when we begin to approach the saturation curve. Therefore, I am not sure what will happen in the future.

39 Regarding the shareholding structure. I previously interviewed some Huawei employees. They are very concerned about one issue: In the past, Huawei's shares grew along the way, and they bought many shares in Huawei, which benefited them tremendously. However, they have one question now. Uncertainty about the future is increasing. If Huawei encounters problems, will dividends and earnings per share be impacted?

Ren: Naturally. Whether to buy or sell company shares is up to the employees themselves. The mechanism is open and our employees are not bundled with the company. Dividends from Huawei shares are expected to drop. Our Blue Team has criticized the company for "distributing dividends at a rate of more than 30% for 30 years in a row." They asked, "How long will this continue?" Therefore, I criticize the Board of Directors Executive Committee every year, saying that profits are increasing so much, and our strategic investment is not sufficient. Their self-reflection minutes for the previous year are still on my desk, and I haven't approved them yet. This year, Donald Trump approved the sanctions on

Huawei, which may cause our profits to drop slightly.

This means they need to take the good with the bad?

Ren: We understand what some employees think, and they can take back their money if they want.

You just mentioned that as long as you don't allow capital into Huawei, you can adopt any path for your future development. Capital is a very sensitive topic and we've already heard all kinds of rumors.

Ren: Rumors are just rumors. We will never allow capital into Huawei. This is a consensus shared by all our executives. We work for ideals, not money.

40

Regarding the operating system, which department is responsible for it? Will you open up the source code to attract some developers?

Ren: I can't say for sure which department is responsible for this. We will try our hand at this. It is not technically difficult to develop an operating system. What is difficult is building an ecosystem. This is a big issue, and we should take it easy.

41

Yesterday, I went to visit your Exhibition Hall for Virtual Restricted Shares and I was shocked. Huawei is highly

bundled with the rights and interests of its employees. You hold only 1.4% of company shares and you only have the power of veto. In many companies today, the founder often has rights that align with their shares or demands more rights than their shares can provide. Your influence in Huawei is incredible. What is the essence of this?

Ren: At the beginning of the year, we completed the election for representatives of our shareholding employees, who become members of our new Representatives' Commission. This was a result of more than one year of preparations. These members were elected on a one-share-one-vote basis. Why didn't people outside Huawei know about this? I don't know why our employees have voluntarily kept this a secret. These representatives of shareholding employees do not represent shares. Instead, they represent shareholding employees and vote company decisions on a one-person-one-vote basis. The company's Board of Directors makes decisions through voting, which also follows the one-person-one-vote principle. As authorized by the Board of Directors, its Executive Committee manages the company's daily operations.

42

You have never used your power of veto, Mr. Ren. Have you ever wanted to use it at a specific moment? Or,

what would be likely to prompt you to use your veto in the future?

Ren: "Brexit." There was a date that my power of veto would expire. I had planned to give it up when that date arrived. However, when we passed the new Charter of Corporate Governance, the UK happened to vote on Brexit. If we allowed voting as they did, the fate of Huawei might be ruined as a company. That would be a regret, so we retained the power of veto, which is temporarily in my hands. When some members of our Executive Management Team exit to form a Core Elite Group, I will give up this power and hand it over to the Core Elite Group, which will be made up of seven people. Then the Core Elite Group will be able to veto decisions on critical issues. Normally there is no need to use the power of veto on business matters.

Ren Zhengfei's Interview with Bloomberg TV

May 24, 2019
Shenzhen, China

01

Tom Mackenzie: Mr. Ren, thank you very much for the time to talk to us. President Trump has described Huawei as a dangerous company. He said, and I'm quoting, "From a security standpoint and from a military standpoint, this is a dangerous company." How do you respond to that?

Ren: I have no idea why he considers us to be a danger. We provide information and communications services to three billion people around the world, including those in underdeveloped African countries and other hardship regions. Like missionaries in the past, we try hard to bring culture (communications services) to the depths of the thickest forests. We have been serving humanity with religious devotion. How is it possible that he considers us to be a danger?

5G is not an atomic bomb. It is a tool for communicating information. The content of communications has nothing to do with the tool. Take a microphone as an example. We cannot say that this microphone is a dangerous tool, because it can transmit and amplify voices. But those who speak with a microphone may say something that poses a threat. How can a tool itself be dangerous?

His accusation is unsubstantiated. Does he have the confidence to analyze the accusation for the public?

02 Tom Mackenzie: The US decision to blacklist Huawei is being framed by some US lawmakers as a death sentence for the company. Do you see this as a question of life and death for Huawei?

Ren: First of all, the US has decided not to purchase our equipment. This is their freedom in a market economy. They can choose not to buy or sell a product. This is not an issue. But the US believes that we pose a threat to security. We have virtually no presence in its market. How does its security have anything to do with us? It has nothing to do with us.

The US is a country ruled by law. In such a country, what's most important is evidence. But the US has failed to present any evidence to prove that we are a security threat and instead has directly added us to this blacklist. A journalist once asked Mike Pompeo where the evidence was. See what his reply was. He said that they asked the wrong question. So I think it may be wrong to add us to the Entity List.

The US is acting with too much anxiety. This is irrational. The country has dominant advantages all over the world and this has been so for quite a long time. Even if some countries manage to catch up in the future, the US still has its relative strengths. Certain companies make some breakthroughs in certain areas. They should be happy about this, because other players can work

with them to provide better services to humanity. How can they consider this a threat?

Is it possible that Huawei will collapse after being put on the list? No, we won't. But our aircraft is bullet-riddled. As you can see in this photo, this is an Il-2 bomber made by the former Soviet Union during World War II. It is actually a portrayal of Huawei. Despite being badly damaged, we don't want to crash and just want to make our way back home. Our current situation is difficult, but it won't cause us to collapse. Adding Huawei to the Entity List may cause us some trouble. But we are repairing our aircraft while adjusting our route back. We will definitely survive.

We will still be a global leader in 5G, as well as some other areas. And our competitors won't be able to catch up with us within one or two years.

03

Tom Mackenzie: You talk about the aircraft analogy and it's an interesting one. The list of companies that supply Huawei with components, as well as software, and are now cutting off the supply of both is growing. This includes Qualcomm, Intel, and Google. So I guess the question is, how long can you survive without these supplies, in terms of both components and software?

Ren: The US is not the world's police and should not seek to manage the whole world. Other countries can decide whether to do business with us based on their own interests and positions. If a company decides not to trade with us, we'll patch that hole in our aircraft with sheet metal or cardboard. We will keep flying and do the repairs at the same time, so that the aircraft continues to fly. How long can it fly? How should I know? We hope to make it to the top of Mount Everest. That's our ideal. The US shares this same ideal. The difference might be that they climb up from the south, with a backpack full of canned beef and coffee. We are moving up from the north with field rations. Without bottled water, we need to melt snow to drink.

Why does the US go to such extremes when dealing with Huawei? What makes them so scared? The US is so powerful. Why does such a small company as ours deserve so much attention from them? I'm thrilled about this, as we are valued and our role has been exaggerated. What the US has done is publicity, good publicity actually, for us. I'm very grateful for what they have done.

04

Tom Mackenzie: You talked about reaching Everest. What does that mean? What does Everest look like for you? What is the company's ultimate goal once

you reach it?

Ren: I think Huawei's goal is to work hard to develop advanced technologies and provide cutting-edge services to humanity. The US also wants to achieve this goal. What's wrong with us sharing this same goal and providing services to humanity?

05 Tom Mackenzie: Do you think the recent actions by the US will be more painful for Huawei or for your US suppliers?

Ren: It hurts both.

06 Tom Mackenzie: In terms of 5G, because there has been a lot of focus on 5G technologies, can you continue to offer the same quality, in terms of 5G technology, without US components?

Ren: We don't have problems with 5G. We can maintain the quality of our most advanced products.

Tom Mackenzie: In terms of the services of core networks, have you developed your own chips that can replace US supplies?

Ren: Yes.

Tom Mackenzie: Do we have a timeframe when those in-house chips developed may be able to be used as a substitute for some of those US supplies?

Ren: Actually, we have been using our in-house chips for a long time. We used to have a "1+1" policy – half of the chips we used came from Huawei, and half from US companies. This could protect the interests of our US suppliers as well. We could also verify that our products worked in real-world scenarios this way. If the US imposes more restrictions on Huawei, we may have to use more of our in-house chips than those from the US. If Washington allows US companies to continue selling chips to Huawei, we will continue buying US chips in large quantities. US companies and Huawei have a symbiotic relationship. We will not discard our partners just because we are able to make chips on our own; otherwise, no one would be willing to cooperate with us in the long term.

Our goal in making our own chips is not to substitute other companies and create a closed system. Our goal is to better understand future technologies. We don't intend to completely substitute the chips of US companies. We hope to maintain long-term, amicable relationships with US companies. The point is not that we will replace the chips from the US when ours are already. We've been using our own chips all along.

07 Tom Mackenzie: Are you looking to change your supply chains at all to ensure that you have the components that you need? Is that a process that you're looking at now?

Ren: No. We will keep our existing supply chains unchanged, and will continue placing purchase orders with US companies. If they can no longer provide supplies to us, then the proportion of our in-house products will increase. It is up to us to find ways to solve our own problems.

08 Tom Mackenzie: As it stands, Huawei is the leader in 5G technology. Can the actions of the US be an advantage to your competitors like Nokia and Ericsson?

Ren: Yes, it will be good for these companies. When they can make more money, they can better serve humanity. Both Nokia and Ericsson are great companies. Many years ago, when the EU wanted to sanction Huawei for alleged dumping practices, Sweden and Finland were the first to object. I would say this was due to prompting from Ericsson and Nokia. We have treated each other well, and we have never seen each other as an adversary. Isn't it a good thing if they can secure more market share and assume more responsibility for serving humanity in place of us?

09 Tom Mackenzie: You talked about having two-year lead in terms of 5G on your competitors. Does that lead get eroded?

Ren: Of course. If we fly slower because our aircraft wings are riddled with bullet holes, our peers can certainly catch up because they can fly faster. But we are fixing these holes, and when this work is done, we will fly faster.

10 Tom Mackenzie: How much damage do you expect to be felt in the consumer division of your business – smartphones and laptops, which depend on US chips and US software?

Ren: Huawei is definitely impacted. The precise extent of impact will be assessed by the respective product line or department. They will find alternatives, or remedies, so to speak. We will pursue reasonable progress. Our growth rate may not be as high as predicted, but we will still see growth. The fact that we can continue growing in the most challenging environment shows that we are a great company. Of course, I have never bragged about myself in my whole life; I'm just praising myself this time because we are facing the biggest difficulty so far.

11

Tom Mackenzie: And you have bragging rights because earlier this year you overtook Apple as the No. 2 smartphone maker as your smartphone sales in the first quarter jumped by 50%. And because you do have the goal of becoming the No. 1 smartphone maker in the world, does that goal now have to be shelved?

Ren: Apple is huge. Two years ago, we became a bit bigger than them – like a peach. In the next two years, we may become smaller than them, like a plum. But a plum is still fit for consumption, even though it may taste bitter.

Tom Mackenzie: So you still want to be the No. 1 smartphone maker?

Ren: No. We can scale either up or down. Huawei is not a public company, so we don't aim for big numbers or high profits. Survival is the best thing we can hope for.

12

Tom Mackenzie: I want to ask about your operating system. We've been told that you want to develop your own in-house operating system. Can you tell us what that's going to look like and when we can expect to see that?

Ren: When it comes to the operating system, the difficulty is not the technology. Building an ecosystem

is the most difficult thing. Apple and Google have built robust ecosystems. Huawei has always supported the ecosystems of Apple, Google, and Microsoft. We have followed their lead. There will be new operating systems, for the Internet of Things and the like. Can we develop some simple operating systems? I can't say for sure that we will be doing very well in this, but we will make effort. Just as how we produce other components, chips, and products – we put effort into it.

Tom Mackenzie: So the key challenge is building an ecosystem, because Apple and Google spent years building their ecosystems. Will that be a key challenge around OS?

Ren: Yes, you'd be right.

13 Tom Mackenzie: There are calls by some in China for Beijing to retaliate against Apple. Is that an option that China should be looking at taking?

Ren: Definitely not! If it were, I'd be the first to oppose such actions. Why should we act against Apple? Apple is a great leader in the world. Without Apple, there would have been no mobile Internet, and the world would not have been as colorful as it is today. Apple is like a teacher to us, leading our way forward, and a student would never act against his teacher. If Beijing does so,

you can come interview me and I will be the first to voice my opposition to blocking Apple.

Some people say that since the US has blocked Huawei, China might as well block Apple. I've always been against this idea. Apple is a great company that serves humanity. Why shouldn't we use Apple products? Some of my family members are using iPhones, and Huawei phones as well, of course.

Tom Mackenzie: Does that nationalism and populism concern you?

Ren: No. We strongly oppose populism and petty nationalism. In a global economy, we must work together to achieve shared success. We live in a big world, and it's impossible for a single company to support the world alone. Again, we strongly oppose populism and nationalism. Even if we can rise to become the world's No. 1, we will partner with others to serve humanity, not just by ourselves.

14 Tom Mackenzie: President Trump has repeatedly suggested that Huawei could be a factor in any trade deal between the US and China. How likely is that, do you think, from your perspective?

Ren: The US has sued us and we have filed our

counterclaim. Now that the cases are undergoing legal proceedings, what do we need to negotiate? We will leave them to the court. We don't have anything to do with China-US trade talks. The US has bought almost nothing from Huawei, and even if they want to in the future, we would not necessarily sell to them. It's better that we wait for the court's ruling. I believe the US justice system is open and transparent.

Tom Mackenzie: I just had to bring it up because it's the President saying, Huawei could be a part of these trade negotiations, which is why I brought it up.

Ren: If he called me, I might not pick up. He doesn't have my phone number though, of course.

15 Tom Mackenzie: Trump says he is master of the art of the deal. You're a deal maker as well. Do you think you could make a deal with Trump if that was a possibility?

Ren: How can we negotiate with Trump after the US sued Huawei? The US is a country ruled by law. We should leave the case to the court.

16 Tom Mackenzie: You have said in the past that you think President Trump is a great president. Do you still think he is a great president?

Ren: Trump is a great president. He tells the whole world that Huawei is a great company and not to sell us components. As a result, we are winning more contracts and can hardly keep up with the increasing orders. He is a great president because he tells the world how great Huawei is.

17 Tom Mackenzie: Many people see parallels between ZTE and Huawei. ZTE last year accepted a deal with the US that involved changing their board and paying a significant fine. It involved quite significant oversight as well. Are there any conditions that would be possible to Huawei if that meant lifting the yoke of these restrictions?

Ren: I don't know about ZTE and haven't engaged with them before. The US sued us at the District Court for the Eastern District of New York, where we will defend ourselves. We will see them in court.

18 Tom Mackenzie: Your daughter is being held in Canada and faces extradition to the US from Canada, and she's facing charges in the US of fraud and breaking sanctions against Iran. Those are the allegations from the US side. President Trump has suggested that he could intervene to help your daughter, presumably you

welcome that kind of intervention?

Ren: Canada is a country ruled by law. We will clarify in court how the Canadian government acted illegally during its law enforcement. Meng has not committed any fraudulent activities. We have made this clear in court. Both the US and Huawei should provide evidence in court in the future, and we have our evidence. Meng was treated unfairly, which may have been politically motivated. Since Trump himself is a politician, how could he intervene? He just wants China to offer some benefits to the US. We didn't commit any crime, so why should we ask our country to offer benefits to the US?

Tom Mackenzie: Have you spoken with Meng lately?

Ren: Yes.

Tom Mackenzie: How is she?

Ren: She is studying while under house arrest.

19**Tom Mackenzie: Do you think the legal action against Canada and the US is helping your cause, or is there a risk that it inflames tensions?**

Ren: The US and Canada took action against us first; we then countersued. Why are we considered to be the one disrupting the social order, when we are merely

responding to the call of the US? Why did the US sue us even though they knew that it would disrupt the social order? Why shouldn't we file a counterclaim after they sued us? The US is a fair, open, and transparent country. It has the right to sue us and we have the right to defend ourselves.

20

Tom Mackenzie: What do you think America's long-term strategy is, when it comes to China? Do you think it is about trying to, as some would argue, contain China's rise?

Ren: I'm not a politician and I don't know about politics. You need to ask President Trump these questions because he is a politician.

Tom Mackenzie: You have rich experience and you've built up a phenomenally successful business. You've traveled to many countries and you're very well versed in what happens internationally. There are some who have said that this is the point when we are facing, essentially, a new Cold War. Is that a risk?

Ren: I don't think I'm a very capable person. My capabilities are limited to managing this company. I turn a deaf ear to things irrelevant to Huawei and I don't comment on them, including things relating to China. This is because I don't know about the practices of other

Chinese companies.

My travels to many countries have been for fun only. I could talk at length if you were to ask me about which places have good coffee, or which places have beautiful scenery, but I am not the right person to ask when it comes to politics.

21

Tom Mackenzie: OK, let me ask you about technology. Because there are those who say that if we keep going down the path we're going down, we'll have a situation where we, essentially, have two technology ecosystems: one driven by China, one driven by the US. Is that a risk?

Ren: The world has always walked a bumpy road. In the industrialized age, we had different standards for railways: narrow track, standard track, and wide track, which hindered the development of international trade. Back then, everything moved slowly, so the different standards of railways didn't create much trouble. When it comes to communications standards, we had multiple standards before 5G appeared. Different standards drove up costs for users and made it difficult to access communications services.

Since 5G appeared, bandwidth costs have been greatly reduced. In terms of network capacity, 5G is

20 times larger than 4G and 10,000 times larger than 2G, but the size of 5G equipment is much smaller and its power consumption is only a tenth of what 4G equipment consumes.

In this new age, even those without much money can afford broadband services, giving them more opportunities to receive cultural education. In the information society, children even in remote regions can see what the world looks like. Then they will develop faster, grow more harvests, and create more wealth. More people will be lifted out of poverty. All this will benefit society.

I'm not sure whether there will be two systems of technical standards. If yes, when the two sides meet at the top of the mountain, with one climbing from the north and the other from the south, we will not fight with each other; instead, we will embrace each other to celebrate our success in driving the digitization of humanity. We will toast to each other. Since there is only snow at the top of the mountain, we will use melted snow instead of champagne for the toast. Ultimately, we are jointly serving humanity. It doesn't really matter whether there is one standard, two standards, or more standards. What really matters is reducing service costs.

22

Tom Mackenzie: As you sit here today, what is your assessment of how long this trade war could go on? We've heard a former Chinese senior official say it could continue till 2035. We've heard Jack Ma say it could go on for two decades.

Ren: I don't know how to predict this. I'm only responsible for managing our company. Our business can be scaled up or down. When under attack, our business could be scaled down to the size of a table tennis ball. Then it could be scaled up to the size of a volleyball, and then to a basketball. We can adjust the size of our business anytime.

23

Tom Mackenzie: The critics of Huawei would say that you've got to where you are through intellectual property theft and government support. What is your response to that?

Ren: We have developed technologies that the US hasn't developed yet. How could we steal technologies that do not even exist? We would need to wait for the US to invent them first. Regarding whether we are supported by the government, we have been audited by KPMG, and KPMG can provide you with our audit report. Jumping to conclusions could result in a wrong judgment. If we were behind the US in terms of

technology, would US politicians step up efforts to attack us? We are attacked because we are ahead of them.

24

Tom Mackenzie: In the past, you faced legal challenges from Cisco, from Motorola, and from T-Mobile. What does that say about the culture of the company, and what steps have you taken to address those issues that came up as a result of those legal cases?

Ren: First, all of these cases have been heard in court in the US. We must respect the courts' judgments. We require all of our employees to never violate any regulations or laws. We have a huge amount of technology. If someone asks what contributions we've made to humanity, I would say we have over 90,000 patents, many of which are patents we have recently obtained for the information society. We have made huge contributions to the information foundation of the digital society. Over 11,500 of the patents we hold were filed in the US and approved by the US government. They should come to understand Huawei's contributions to humanity, and the disputes between us may be gradually resolved.

25

Tom Mackenzie: How did you manage to go from behind your competitors, like Ericsson, like Nokia, to

**being the leader in 5G? What steps were implemented?
How did you manage to make that leap?**

Ren: First, we work while others are having coffee. In general, we work much harder than others. Second, individually, we are not that wealthy. We distribute our profits to employees, and this helps attract excellent scientists and talent to join us. I am not super wealthy, although I suppose I am rather rich. It is true that I was poor in the past, but I have been forced to become rich over the past 20 years. As a Chinese saying goes, people gather around you when you share money with them. When we share our money, scientists around the world come to join us or work with us. That explains our fast pace of growth. Perhaps scientists come to join us because in the US, more money is going to Wall Street, not to scientists.

26 Tom Mackenzie: If at a moment of national crisis, the government came to you and said, "We need your help, we need your cyber skills, and we need access to your network because it's for the good of the country, the government, and the Chinese people," how would you respond?

Ren: We would definitely not install backdoors. We won't ever do such a thing. We are serving humanity, not intelligence agencies. Why would we install backdoors?

Tom Mackenzie: You are a member of the Communist Party. You've taken an oath of allegiance to the Communist Party. If the Communist Party leadership came to you at the moment of conflicts between the US and China, do you say no to that oath? Do you break that oath and stand by the company? How do you make that decision?

Ren: According to its oath, the Communist Party of China is loyal to the people. The oath does not include anything against the US.

Tom Mackenzie: Just help us understand, what are the practical steps for denying a request like that in China?

Ren: The Chinese government has never made any such requests. According to an article published by a German newspaper, no backdoors have ever been found in Huawei's systems. The UK said it has the toughest and most rigorous oversight regime in the world for Huawei; that's why they trust us and continue to use our equipment. Huawei has a proven track record in security, and we will never accept any request to implant backdoors or collect intelligence for anyone in the future.

27

Tom Mackenzie: You mentioned the UK. They published a report through your cyber security center there last year, saying that they were very concerned

that Huawei hasn't addressed some of the issues that they brought up with Huawei, that those issues posed a risk to Britain's telecom companies?

Ren: This report criticized Huawei in a well-intentioned way. Indeed, Huawei is not without its flaws. If there are issues that need to be addressed, we will make improvements.

You can also ask some US companies whether they would comply with any request to install backdoors, and see what their answer is.

28

Tom Mackenzie: How would you characterize your relationship with the Chinese government?

Ren: I pay taxes to the Chinese government and abide by Chinese law.

Tom Mackenzie: Have you spoken to the government since the blacklisting?

Ren: There is no need for me to do that. Regarding our issues with the US government, we will leave everything to the court to decide. Why would I need to talk to the Chinese government?

Tom Mackenzie: There have been reports that they might be looking at offering financial assistance to

your company. Is that something you'll consider?

Ren: There has been no such thing. You will be able to see that in our financial statements. If Western banks reduce loans to Huawei, we may apply for more loans from Chinese banks. In the past, we borrowed a considerable amount from Western banks because of their lower interest rates. However, if Western banks refuse to offer loans to Huawei, we will get loans from Chinese banks even though the interest rates are higher. This is only about business. It has nothing to do with the government.

Tom Mackenzie: Does the Chinese government, or any of its entities, own any stake, any part of Huawei?

Ren: No, absolutely none at all.

29

Tom Mackenzie: A lot of this, maybe all of this, comes down to a question of trust and, from the US side, mistrust of Huawei and of China. Do you think there are additional steps, beyond the steps you've already taken, that you could take to improve that trust, whether that is restructuring the company or listing the company? Is there anything you can do to build on that trust?

Ren: We have worked with our customers for 30 years,

and we are serving three billion people. The trust our customers and users have in us will not simply disappear because of something someone says to them.

Huawei will not go public in order to earn some people's trust. We are clean, so we don't need to worry about what others have to say about us.

30 Tom Mackenzie: Are you winning the argument in Europe?

Ren: We definitely do not have the upper hand. The US is very good at influencing public opinion around the world. Huawei's voice is too soft; it's like the sound of the wind blowing against the grass, which is overwhelmed by the sound of the waves at sea. Nevertheless, we need to speak out and make our voice heard. In the past, we believed that silence does not mean cowardice and tolerance does not mean apathy, and we kept stepping back, but they just didn't want to give us a break. So we want to say something. However, ultimately not many people would be able to hear what we say, because the US is very good at influencing public opinion.

31 Tom Mackenzie: Your business success certainly speaks to the trust that you have clearly built up with many

of your clients. But the question of trust applies to the government, and I wonder if there is anything that you feel, personally as CEO and founder, you could have done to improve that trust, or to build that trust?

Ren: In fact, most governments trust Huawei very much. When disasters happen anywhere in the world, Huawei is often among the first to stand up and respond to the disaster. When a devastating earthquake hit Japan and caused a serious nuclear disaster on March 11, 2011, all other companies evacuated at this critical moment. But Huawei employees stayed and headed in the opposite direction towards the disaster-stricken area to restore communications equipment, which supported the repair of the nuclear power plants. When Meng Wanzhou flew from Hong Kong to Tokyo at that time, there were only two people on that flight. One was Meng Wanzhou and the other was a Japanese person.

We are a responsible company that works for the destiny of humanity. After Indonesia was hit by the devastating tsunami, Huawei immediately donated plenty of cash and equipment, and several hundred Huawei employees promptly set out to the coastal area to restore communications equipment, which greatly facilitated the disaster relief effort.

During the magnitude-9 earthquake in Chile, three of our employees were trapped at the seismic center

and lost contact with us. The rep office called me, asking whether they should send people to find them. I said that since there might be aftershocks, we should wait patiently; otherwise, the rescue team could also be trapped by the earthquake. After waiting a few days, the three missing employees finally called us and said they were safe and sound.

However, the local director didn't know that Huawei had decided to put lives above all. He asked these three employees to go to repair the broken microwave devices. So they just got their backpacks and headed straight to the center of the disaster area to support the relief effort. We have made a short, three-minute video based on their story, with these three employees playing themselves.

Later, when I went to Chile, the country's richest man gave me a box of fine wine. I then went to see one of the three employees and gave the box of wine to him. He happily accepted and didn't bother to share a bottle with the senior executives sitting next to him. He is such a straightforward, great person.

In addition, Huawei has been working hard in many areas of Africa stricken by infectious diseases, such as plague, Ebola, AIDS, and malaria; many Huawei employees there even contracted malaria themselves. Therefore, Huawei applies a famous rule of the US army

for promotion, which says that only people who have been on the battlefield, engaged in battle, and gotten scars can be promoted. At Huawei, people who have never worked in hardship areas will not be promoted to senior leadership positions.

32 Tom Mackenzie: Let me go back a little bit to your history. I want to paint a picture for our audience of who you are and what motivated you. How did you go from being an engineer in the People's Liberation Army to building and setting up Huawei as a company in 1987?

Ren: My personal experience can be divided into two parts:

The first was when I worked within the system of a planned economy. I had served in the army before the large-scale disarmament, when China adopted a planned economy system. Within that system, I served as an engineer up to the level of Deputy Regimental Chief. But all of a sudden, the army carried out a large-scale disarmament, and many of us had to leave. We were directly thrown into the vast ocean of the market economy.

Thus, the second part of my life was spent working in the market economy. At first, I had no idea what

the market economy was about. For example, I didn't understand why people sold something at the price of 12 yuan when it was bought with only 10 yuan. Wasn't that cheating? My thinking was still restricted by past experience. Naturally, I choked many times in that ocean of the market. I also trusted everyone too much. When I worked in a small company, some people cheated me out of money. I tried to get the money back, but I couldn't afford to hire lawyers. So I studied the law on my own to defend myself. After I read the laws of many countries, I realized that the market economy was in fact about two things: the goods and the customer; and the law governs what's in between – the transaction. I can never control customers, but I could get hold of goods and follow the law. That's what motivated our R&D efforts. We must do research on goods and sell them to our customers through legal transactions, if we want to earn money from our customers.

In that situation, I was dismissed by my previous employer, so I had to find another job. It was right after China had adopted the reform and opening-up policy, and begun allowing educated young people to return to cities. The government also allowed these young people to do business, such as selling tea or steamed buns, since they could not arrange jobs for all of them. In Shenzhen, starting tech companies was allowed. So I decided to give it a try and started Huawei. Actually, I

set up Huawei because I had no other way to make a living. Ever since founding the company, I have stuck to my original idea, which is to make quality goods and sell them to customers at reasonable prices to earn money. That's the very simple reason why I set up Huawei, and how it has managed to get where it is today.

33

Tom Mackenzie: What were your ambitions for the company back in 1987?

Ren: At that time, we didn't even have enough food. My only wish was to survive. My daughter was still very little. Her mother often told me that she needed to buy stale fish and shrimp in the market at 5 o'clock in the afternoon and cook them for our daughter to make sure she got enough protein, as children cannot grow healthily without enough protein. Back then, we were only able to maintain the minimum standard of living. It was impossible for us to have any ambitions, because we didn't even know if we could survive. My most famous slogan at Huawei is "survive, survive, and survive". Even today, the story of the damaged aircraft that I talked about is still about survival. I don't have great ambitions.

34

Tom Mackenzie: Did you ever imagine that you will be sitting here today in this position?

Ren: People who do not have much desire often turn out to be more capable. I have never imagined myself here, nor have I wanted to earn a lot of money. So I hold only a small portion of company shares. I did not even own an apartment back in 2000. My wife and I rented only 30 square meters, or half the size of this meeting room. It faced west and there was no air-conditioner.

There was no turning back for us. If we did, there would be nothing but poverty. But if we moved forward, there would be some hope. There was certainly no hope if we turned back. So we had to bite the bullet and forge ahead. Suddenly, we are seeing the light at the end of the tunnel, and finding ourselves at the top of the mountain.

If the US had not attacked us, we wouldn't have known that we are somebody in the world. Thanks to them, we're now aware of where we stand and we are very proud. Even if Huawei collapsed today, we would still be proud. Because it was Trump, not a nobody, that defeated us.

35

Tom Mackenzie: To what extent does your military experience influence the way that you run the business?

Ren: There is no turning back. All we can do is to put

one foot in front of the other. We have to plod on, powering the grain mill like a donkey. It's the flour we grind that gives us the drive to charge forward. Step by step, we have somehow managed to overtake others and stay ahead. The nature of the military involves facing up to difficulties and challenges and moving forward one step at a time.

36 Tom Mackenzie: You had another difficult period for the company in 2000. You talked about the year 2000, when Cisco sued Huawei over intellectual property infringement. Compared to that period, is now a more difficult period for the company than 2000, or was that still one of the most challenging periods for Huawei?

Ren: For us, there has been no period without difficulties. Every period is the most difficult.

37 Tom Mackenzie: It's also being reported that you considered selling the business to Motorola in 2000. I think it's 2000. Is that a happy twist of fate that you didn't end up selling the company?

Ren: I think Motorola was silly in this case. That week, Christopher Galvin was replaced by Ed Zander. Mike Zafirovski, Motorola's second chair, had negotiated with

us on all transaction contracts and signed off on all the paperwork.

While waiting for final approval, we all put on floral-print clothes, ran around, and played ping pong on the beach. We then learned that Ed rejected this acquisition.

Years later, when I met the CEO of Ericsson, he said Mike had cried when talking about what had happened. He wondered why this great acquisition had been vetoed.

At that time, we at Huawei were afraid of the US. We knew that we were going to have to square off against the US as we continued to develop. We knew who we were then, so we planned to sell Huawei and go into the tourist and tractor sectors. But the deal failed, so we were engaged in new discussions over whether to continue with technology or sell Huawei to someone else. I was ready to compromise. That's my style. I always compromise if that's the right thing to do.

However, all of our younger executives said they wanted to continue with our business. They all had a technical background. If they gave up technology and went into tourism, they didn't think they'd be good at flying tourist flags. So they decided to stick with technology.

I replied, "We might be in conflict with the US ten years from now. So we need to move forward, and work

hard to improve." They unanimously said yes. Now, we're in a hard fight, like an aircraft riddled with bullet holes. But we are not divided. We are even more united – this might have something to do with our forecasts back then.

But can we? We don't know the answer yet. Someone asked me what if the engines and fuel tanks are hit. Don't ask me whether our aircraft can still fly if no one sells engines, fuel tanks, or fuel to us.

These will all be new challenges. We will meet these challenges head-on. We have to play it by ear when exploring the way forward.

As for your question of whether our aircraft can land, I can't say it for sure, because what really matters is that we land safely. Now, this damaged aircraft is still flying in the air. It might not withstand fierce winds and might drop to the ground.

Tom Mackenzie: Does this make Huawei stronger, automatically?

Ren: Not necessarily. I would say it's a trial by fire. It helps us reinvent ourselves.

38

Tom Mackenzie: Where do you think Huawei's greatest opportunities lie in the future?

Ren: As we haven't yet solved the problem with our survival, how can we talk about the future? There is still a question mark over whether the US will give us the license to survive. It's too early to talk about the future.

39

Tom Mackenzie: Speaking of survival, the company is famous for spending heavily on R&D, 10% of revenue every year, and that in some respect has been a major catalyst of driving Huawei to the forefront of the 5G technology era. Given the actions that the US has taken, does that mean that you're going to have to ramp up that R&D spending even more to develop your own in-house products and components?

Ren: We used to set our prices relatively low based on our costs. This gave some Western companies a hard time; some even went bankrupt. I was not proud of that. But now our prices are set relatively high, higher than those of Ericsson and Nokia, and we have earned a lot of money because of this. Now our salary standards are higher when compared to the West. If we continued to distribute more money to our employees, they would become complacent. To avoid this, we are spending more money on funding scientific research and investing into the future. This is what we call "increasing the fertility of our soil" at Huawei. Apple is the greatest company in the world. Selling at high prices, Apple is like

a big umbrella, beneath which many other companies sell products at lower prices and survive. Inspired by Apple, we have also opened an umbrella of our own; only ours is lower. We don't charge low prices, either. This is because we have many measures in place to bring the costs down. With extra money made, we will invest more into scientific research and the future.

As long as we have enough to subsist on, we will continue to ramp up investments. Even in the hardest times, we will still invest into the future. Otherwise, there would be no future at all. If the company suffered losses to the point where we couldn't pay employees' salaries, that would be another story. We don't have such a problem at the moment. Moving forward, we will save money that could be saved, but we will not cut funds for R&D investments. Otherwise, the company would collapse.

40

Tom Mackenzie: When it comes to the fight for talent, we have seen many Chinese students having their visas in the US denied, and some Chinese academics being denied access to the US. Is that a potential opportunity for Huawei to attract Chinese talent to the company?

Ren: It depends on whether our departments in different domains are short of such talent. If yes, of course we are happy to bring them in.

41

Tom Mackenzie: What do you think will be the most significant technological changes in the future?

Ren: Artificial intelligence.

Tom Mackenzie: AI? Is that going to be an increasing focus for the company and for you?

Ren: At the moment, AI chips and AI systems are widely used at Huawei. Without AI supporting our production lines and management systems, our management costs would be enormous and there would be no extra money for R&D. In addition, AI has been widely used in our products.

42

Tom Mackenzie: How long do you plan to be the CEO of the company?

Ren: I'm not sure. Perhaps I will stay in this position for some time.

Tom Mackenzie: Do you have any succession plans in place?

Ren: We've always had a succession plan. My successor is not a single person, but a group of people under which there is another group of people and then another. It's like a chain that underpins a huge succession plan. Our succession plan is not about a single person. What if

there was only one successor and that successor became ill? And we are a damaged aircraft. So our succession plan is not about a single person, but about a group of people.

43

Tom Mackenzie: I just want to bring it back to some of the original topics we talked about at the beginning around the supplies. We talked about how some of the major suppliers, like Intel, Qualcomm, Arm, Panasonic, and Google, are restricting their supply of components and software to Huawei. Just explain to us how you weather that storm. What exactly have you put in place in terms of contingency? Can you just give us a few more details around the contingency plans that have been put in place?

Ren: US companies must assess their own interests and their own situation before making decisions. We support suppliers making their own assessments. There has been a lot of media coverage about this, but what's really going on remains unclear at the moment.

Tom Mackenzie: But you started to put contingency plans in place over a year ago. We have been told. What made you take that decision? How did you know? What underpins that decision to start planning for this eventual reality?

Ren: Our contingency plans were not only meant to deal with emergencies, but also to help us become an industry leader. If the industry cannot provide advanced technologies such as more advanced chips and components, we will have to develop them ourselves. But we only develop some of them. We wouldn't be able to afford the costs of doing everything ourselves. We have prepared the core parts of the aircraft, including engines and fuel tanks. But we don't have many components to create the wings. We still need to examine which parts have been damaged and then fix them. Two or three years down the road, you will see whether we have survived or not when you come to interview us.

44

Tom Mackenzie: You talked about survival. What issue could be a cause that would kill the company?

Ren: The biggest potential killer of Huawei would be a lack of confidence, of willpower, and of unremitting effort.

45

Tom Mackenzie: One way to look at what happened to Huawei is to look at what China has done to US companies in the past, blocking some of America's top technology companies. So some would argue that, in

some respect, the US is just playing catch up in terms of putting in restrictions around Chinese technology companies.

Ren: They are not just limiting our access to the US market; they are closing in on us all around the world. If they just limited our access to the US market, I would be willing to accept that, because I had no particular desire to enter the US market to begin with.

Tom Mackenzie: China has restricted many of America's top technology companies from operating here. So some would argue that it's only fair that it's leveling the playing field.

Ren: They are lobbying all around the world against us. It is not an issue of limiting our access to the US market. It is preventing us from buying parts and components. The US is even enacting laws to limit us, but they need to tell us what we have done wrong. The US is a country that exercises the separation of powers, but they reached a verdict on us simply following a vote by legislature. That was unconstitutional, so we filed a lawsuit against them.

46

Tom Mackenzie: You did talk to the Chinese press and you talked then that China could have reformed and opened up more quickly. I wonder if you think if some

of those steps had been put into place around reform, around opening up the market here at an earlier stage, we wouldn't be in the position that we're now in.

Ren: We must not link our matter to the issue of whether China should accelerate its reform and opening-up. They are two different things. I have always been a supporter of China's reform and opening-up, because this initiative has already contributed towards China's wealth, strength, and prosperity, and will continue to do so. China must no longer close its door. It had closed its door for at least 5,000 years, during which China was poor. In 30 years of its reform and opening-up, China has become prosperous. Opening-up is good for China. This has nothing to do with Huawei's fate. I support China's continued efforts to open up.

However, it is necessary to open up step by step. The US is the most open country; but it still doesn't allow Huawei to enter its market, does it? If the US can open up step by step, why can't China?

47

Tom Mackenzie: As you sit here today, where do you see Huawei in five years' time? What is your vision for the company? What are your expectations for what this company looks like within that time frame?

Ren: I can't imagine what things will be like in five years'

time. We'd better first imagine what things will be like in three years. When you come to visit us in three years' time, please bring a rose and lay it before our tomb if Huawei is gone. If Huawei is still here, I will give you a big cake. I hope that when you visit us in three years, you won't bring a rose, but instead, I will be baking a big cake for you. This is what I wish for, but I don't know what will happen in future.

Tom Mackenzie: Still survival?

Ren: Survival is always our top priority. Without survival, development won't be possible. I don't have any dreams. I think we still need to be practical and address the problems facing us today.

48

Tom Mackenzie: Just returning to the question of Cisco and the legal action it took in early 2003. Is there more that you could have done in your position between that period and now to address some of these concerns, whether it is concern about trust or examples of some Huawei employees infringing on intellectual property?

Ren: Even before the Cisco case, we had already attached great importance to intellectual property management. That was why we could settle such a big case with Cisco out of court. However, that case

made us more alert. After that, we paid more attention to intellectual property management. Our intellectual property is a great contribution to humanity. We have many constraints inside Huawei in this regard.

49

Tom Mackenzie: In terms of culture, Huawei's culture is famous for driving its employees very hard to make those wings drive forward and push the company ahead of its rivals. Is that drive, that ambition, that relentless drive to be better, that culture in some ways to blame for some of these examples, whether it's the example of T-Mobile's Tappy robot when you had Huawei employees trying to get intelligence on that piece of equipment. Is that a statement, to some extent, of the culture of Huawei driving employees so hard?

Ren: For specific cases that are still undergoing legal proceedings, we will wait for the court to decide. In general, our management at Huawei is effective.

Tom Mackenzie: Has the company ever set up any systems at all or schemes to reward employees for stealing intellectual property?

Ren: Absolutely not.

Tom Mackenzie: The US Department of Justice said that there was a bonus scheme that was put in place

to encourage Huawei employees to steal intellectual property?

Ren: The US Department of Justice has filed a lawsuit, and we need to wait for court decisions.

Tom Mackenzie: And you wouldn't condone such a system?

Ren: Absolutely not.

Liang Hua's UK Media Roundtable

May 14, 2019
London, UK

01

How does the company feel about being at the heart of this political controversy in the UK? We've seen a cabinet minister resign. How do you feel about being in a situation where you are at the heart of this kind of debate about cyber security, about phone networks, about the role of China, about the long-term role of China in the UK?

Liang Hua: It was never our intention to be at the core of such political controversy. We have been doing business in the UK for 18 years in fixed and mobile networks. Why is Huawei now becoming the focus of this media attention? I think this is partly due to the exaggeration of the role and impact of the next generation of networks, 5G.

Cyber security is indeed a fundamental element in the future digital and intelligent world. We are happy to see this cyber security issue being discussed. We believe cyber security is a technical issue at its core, and so should be addressed through technical solutions.

Regarding cyber security, I think the UK has established a very good mechanism to manage and control these risks, and has good practices in place to manage its network operations. We see concerted efforts to address this issue in the UK between the government, regulators, and carriers. We also see good practices in how they choose suppliers, and how they establish rules

to manage cyber security, so that the networks can provide better services to users.

The cyber security issue should not be exclusive to just one single supplier or company. It's a common challenge facing the entire industry and the world at large. It needs global cooperation in technical solutions and security assurance measures to resolve the issue of cyber security.

In past years, Huawei has established a very effective mechanism for collaborating with the NCSC. I would say, on the issue of cyber security, Huawei is the most scrutinized and evaluated company in the UK.

This collaboration mechanism has proven to be very effective. Before our equipment enters the UK market, it undergoes white-box testing. In other words, before the carriers deploy Huawei's equipment or network solutions, our equipment is all thoroughly tested before it can be put into live network.

We believe this kind of mechanism is very effective because it's based on risk mitigation and a common set of cyber security rules. And we really think it's important to set a high bar for cyber security, so that equipment providers and carriers can follow these common standards. This will make network operations more effective and secure, and helps build trusted networks.

02 **GCHQ has criticized Huawei for coding skills and also there have been vulnerabilities which were reported by carriers using Huawei equipment. Does Huawei really have such bad coding skills? What is it doing to improve it?**

Liang Hua: We have been cooperating with the NCSC for a long time. During this process, Huawei has stayed open and transparent.

In 1998, we began introducing a process called Integrated Product Development, or IPD. We use this process to guide our product development, including both hardware and software. This IPD process has made our product development more effective and enabled Huawei to grow into what it is today.

Over the years, we have regularly reviewed and continuously improved our software engineering capabilities. We have also invited third-party organizations to evaluate our software engineering capabilities, including assessing cyber security. For each of the past six years, we have invited a US company, Cigital, to review our software capabilities. According to the results of this assessment, Huawei has outperformed all other assessed companies in 9 of the 12 assessed metrics. This shows that our software capabilities remain competitive in the industry.

The NCSC has also evaluated Huawei's software

capabilities, and the latest Oversight Board (OB) report set a higher bar for Huawei's software engineering capabilities. We are aware of the issues pointed out in the OB report, and these are precisely the issues we need to address in the future, especially at a time when new services such as cloud, digitization, intelligence, and IoT are becoming more prevalent.

This is why we have decided to invest at least 2 billion US dollars over five or more years in order to improve our software engineering capabilities and develop more trustworthy and higher-quality products.

We consider this to be our second major transformation in Huawei's R&D team. We call it IPD 2.0. This systematic transformation will not just address the issues that the NCSC pointed out in the OB report; it also aims to help Huawei improve software engineering and develop trustworthy, high-quality products, as well as resilient networks. When I say trustworthy, I mean we should ensure that both our processes and results are trustworthy.

03

I have a question for you regarding some news this morning. Do you have a response to Sir Michael Fallon, the former defense secretary in the UK, who said there is a clear difference between companies operating in democracies and in autocracies, and they operate in

places like in China, that it would be a mistake to let Huawei participate in the 5G rollout?

Liang Hua: Despite the fact that Huawei is headquartered in China, we operate globally. In our global operations, we are committed to complying with all applicable laws and regulations in the countries and regions where we operate.

Huawei is always open and transparent. We help local communities become more competitive by providing advanced products that feature innovative technologies.

With regards to 5G rollout in the UK, we are aware that the UK government is now carrying out a supply chain review. During the selection of network equipment providers, I believe multiple factors will be considered including risk assessment, results of the supply chain review, and the UK's requirements for economic development.

I know the UK government has a clear vision through its Industrial Strategy. It wants a Britain that lives on the digital frontier, with full-fibre broadband, new 5G networks, and smart technologies. This vision also specifies the goal of connecting 15 million premises to full-fibre broadband by 2025, and taking a leading role in 5G.

This strategy also recognizes cyber security as a very

important factor, and the decision should be made by considering both the requirements for economic prosperity and the results of cyber security assessment. However, it is important to address cyber security risks through an evidence- and fact-based approach, rather than making threats out of fear.

Cyber security and privacy protection are overarching guidelines in the company's business strategies. We place cyber security and privacy protection above our business interests. Through such business strategies, we aim to deliver high-quality networks that can effectively support carriers' network operations, while ensuring compliance with cyber security and privacy protection requirements.

Huawei is prepared and willing to make our fair share of contributions to the UK market in all areas. In particular, we are fully committed to supporting the UK's digital economic development.

04

I was wondering if you could say specifically how much revenue the company could stand to lose if the UK decides only to allow Huawei to supply equipment for non-core parts of the 5G network.

Liang Hua: Huawei doesn't hold a large share in the core parts of existing UK networks. There are clearly

defined interfaces and standards for core networks and access networks. Carriers have the right to evaluate and choose suppliers for their core networks and access networks.

Huawei has a limited presence in the core parts of UK networks, so the revenue loss wouldn't be significant if Huawei was not really allowed to supply equipment to 5G core networks.

05 Have you met any UK government officials? Have you ever made any promises, for example, enhancing transparency or increasing R&D investments in the UK?

Liang Hua: So far, I haven't met with any UK government officials, but I will have meetings with some people from industry organizations during this visit.

We have a long-term commitment to our operations in the UK, and everything we do in the country is guided by this long-term commitment and shared success. This includes developing ecosystem partnerships, supporting the UK government's digital economy agenda, building advanced IT infrastructure, and investing in R&D.

06 In face of such scrutiny, I mean the scrutiny from the West and the criticism quite largely focused on

Huawei, what are your feelings and indeed the feelings within Huawei in reaction to this? Do you think it's justified?

Liang Hua: These reports have different angles. There are criticisms, positive remarks, and the clarification of facts. We have gained huge media exposure and attention recently. The US is launching a global campaign against us, which is drawing a lot of public attention toward us.

We hope that the media focuses more attention on our contributions to local communities. If the reports provide some suggestions or criticisms, and outline problems for us to address, we definitely welcome them.

For example, the NCSC identified defects with our software engineering, and also proposed some recommendations for improvement. We have taken these recommendations on board and come up with our improvement measures. We hope that this systematic transformation programme will help further enhance our software engineering capabilities.

If a future report contains criticisms of our company, we hope that it bases them on facts and evidence, rather than purely based on politics or other such motivations.

07 I just want to go back onto the revenues and market shares. Obviously, you said you didn't want politics to impact your business, but it is going to. So do you foresee the market share decreasing in the UK and then across the whole of Europe and the world? Obviously, the Carrier BG took a bit of hit last year.

Where are those losses coming from? I mean, have you seen a slowdown in the market compared to your forecast on 5G uptake over the last couple of years? How do you foresee market limitations on the amount of kit that telcos are allowed to buy from a single supplier hitting you guys?

Liang Hua: It's difficult for me to predict, to say for sure what the impact on our market share in the UK will be. I can only say that I hope we will see good results in the UK market.

You mentioned our growth in the global market, and how our carrier business performance was less than satisfactory in 2018. I think that is largely attributed to some cyclical trends we see in the telecom industry itself, because the industry is currently in between two different phases. We have wrapped up the rollout of 4G networks, but we have yet to kick off large-scale 5G network buildout, so the industry itself is a factor for consideration when we look at our current carrier business performance.

I'm happy to share though that our carrier business performance in the first quarter of this year showed 10% YoY growth.

Carriers in different countries have adopted different strategies for 5G rollout based on their country-specific policies. So far, we have secured over 40 5G commercial contracts, and shipped over 100,000 5G base stations.

Given the current political and economic environment, we are confident in our business growth, and everything is now business as usual.

5G has been garnering a lot of attention. Moving forward, 5G will become a key enabler of the digital economy, and we have seen increasing adoption of new technologies, such as AI. We believe that 5G and AI are going to speed up the deployment of ICT infrastructure in various countries, which will further drive the digital economy forward.

Just a quick follow-up, can you give some sort of split in the 5G contracts? What portion of those are in Europe? What portion are in Asia, Africa, etc.?

Liang Hua: Among our more than 40 5G commercial contracts, we hold 25 in Europe, 10 in the Middle East, and 6 in Asia Pacific.

08 **When nations were encouraged to participate in globalization and competition in global markets from the 1990s, it was on the understanding that the rules of competition were quite clear. For example, the WTO has very clear rules about state aid and dumping. Do Chinese companies now feel that you've been invited to a game where the rules changed halfway through?**

Liang Hua: I certainly cannot speak on behalf of all Chinese companies, but I do believe that a fair, free, and open market facilitates trade between nations in a globalized world. I also believe that ensuring businesses follow common rules and compete on a level playing field contributes to the development of world economy and world trade.

As cyber security is a technical issue at its core, we should call for the establishment of clear, common standards so that all participants can follow the same standards when building networks.

When it comes to privacy protection, there is a provision in Europe called the General Data Protection Regulation, or GDPR. This regulation sets out clear rules and requirements for the protection of user privacy, and all participants in this market must follow them.

I think this is an excellent practice. As long as Huawei complies with the GDPR in Europe, we can do business

in the region. If a company violates the GDPR, they are punished. The GDPR is fair to all market participants.

09

Could you comment on the 2017 law that apparently has been cited by British politicians that Chinese companies would have to cooperate with state agencies if surveillance was demanded? Earlier today, one of your colleagues said that the founder would shut the company down if such a request were made by the Chinese government. Do you endorse that statement that the company would shut down, and do you believe that the concerns over the Chinese laws were overstated?

Liang Hua: So far, we haven't received any requests of this kind. Even if we received such requests, we would not execute them.

With regards to the Intelligence Law that you mentioned, Chinese government officials have clearly stated on many occasions that no Chinese law requires Chinese companies to collect intelligence or implant backdoors.

For example, at the Munich Security Conference, senior Chinese official Yang Jiechi said that no Chinese law requires Chinese companies to collect intelligence or implant backdoors.

Chinese Premier Li Keqiang also emphasized this point two months ago at the National People's Congress (NPC) and the National Committee of the Chinese People's Political Consultative Conference (CPPCC). He stated, "This is against Chinese law, and is not the Chinese way of doing things. We don't do such things now, and will never do them in the future."

If you think about how Huawei has grown to its current size with operations in more than 170 countries and regions and about how we have been serving our customers for over 30 years, it is clear why we would never do anything that damages the interests of any customer or individual. You just quoted our founder, Mr. Ren, who said that he would rather shut down the company than comply with this kind of request. Personally, I endorse that statement.

Huawei has proposed to sign no-spy and no-backdoor agreements with governments of the countries where we operate, including the UK government.

Finally, you asked whether we think concerns over the Chinese Intelligence Law are overstated. I think it may be fair to say that.

10 **You are saying that you would be willing to shut down the Huawei network if the Chinese government asked**

you for information. Is that correct?

Liang Hua: Our founder has said on many occasions that he would rather shut down the company than accept any requests to collect intelligence for the government.

So what does this mean, if the Chinese government asks Huawei to collect information? What does this mean for the entire network? Because you have been sitting here telling us that Huawei is to be trusted and it should be part of the 5G network, but doesn't this raise questions of security if the company is willing to shut down over these issues? You were saying that you would shut down, but surely the two things are intertwined. If Huawei no longer exists, how can the network exist? How would the network survive?

Liang Hua: What we have said about shutting down the company reflects our commitment to never agreeing to such requests. Huawei provides network equipment to our carrier customers, and these customers operate their networks with the support of Huawei. When we are serving customers and cooperating with them, our core principles are to stay customer-centric and create value for our customers.

Any act that is not explicitly stipulated by the law as being a crime is not to be convicted or given

punishment. Even if we were to receive such a request, we would not execute it. What Mr. Ren has said reflects our commitment to never agreeing to such requests. And we would not be subject to legal consequences if we refused to execute such requests.

We are confident in our long-term development, which is why we invest heavily in R&D every year. Last year, we spent 15 billion US dollars on R&D. Over the next five years, our annual R&D spending will reach 15 to 20 billion US dollars. Such investment will ensure our long-term survival and better support our customers.

Supporting the stable operations of customer networks is a key part of our work. I used to oversee Huawei's global technical services division. One of its key responsibilities is to support the stability of customer networks during critical incidents, such as natural disasters. For example, soon after the outbreaks of earthquakes in Chile and Japan, and the tsunami in Indonesia, our employees were able to rapidly restore the affected networks to normal operations.

11

I'm asked constantly to recommend a smartphone. I had a friend recently who asked me for smartphones with a good battery. I said maybe you should consider Huawei. And he jokes, "No, I don't want to be spied

on." Are you concerned about shaking off this type of image?

Liang Hua: It's great to hear you recommend our phones to your friend. Different people have different preferences when selecting smartphones. Some people care about battery life, some are more interested in photography, and some care more about the ease of use of the system. Users are making their own choices.

Let's think about a smartphone from the perspective of the entire supply chain. A smartphone is actually made up of thousands of different components, all sourced from the global supply chain.

Smartphones are access devices that make people's lives easier, considering their position in the network. You mentioned that your friend was reluctant to use a Huawei phone for fear of being spied on. This isn't something he needs to worry about.

I don't think it's right to judge a smartphone brand based on its country of origin or any other geopolitical factors for that matter. I think we need to look at the underlying technologies of the smartphone.

Are you worried about your image though? I really get that feeling that you are worried.

Liang Hua: I think, ultimately, our brand image is about

product quality and trustworthiness. The brand image of our products will not just be decided by the concerns of certain individuals. Our business growth in areas such as smartphones, PCs, and wearables is very positive, and in the first quarter of this year, we have already shipped 59 million units of smartphones.

Therefore, I'm not particularly worried about the brand image of our products. I would say that the ultimate factors that are going to influence our brand image are whether the technology itself is advanced, and whether the products themselves are of high quality.

We understand that any consumer products, especially high-end ones, can spark some concerns when they enter the market. Ultimately, these concerns will be addressed through the test of the market.

12 **Circling back to the contracts that Huawei has signed in Europe, I was wondering if you could speak about them a little bit more specifically and say whether or not they include agreements to supply equipment to the core part of the network and whether any could be avoided in supply chain reviews in Europe as mandated by the European Commission?**

Liang Hua: The majority of the 25 contracts that we have signed in Europe are about base station products.

I don't know much about whether they include agreements to supply equipment to the core parts of the network.

The UK government has made it very clear that their supply chain review does not single out any country or company. Rather, this review targets all telecom carriers and equipment providers. We are aware of the planned UK government supply chain review. We share the UK government's commitment to a secure and resilient critical national infrastructure, and will fully contribute to this review.

The UK supply chain review is based on a set of clear standards and requirements. We are fully confident of passing this review. The supply chain review aims to improve cyber security practices, network resilience, and supply diversity. It will help the UK make more informed choices when selecting the best equipment providers to work with carriers in building ICT infrastructure.

Today, the telecom industry has a highly globalized supply chain, and Huawei is committed to contributing our part to this supply chain.

Catherine Chen's Interview with Corriere Della Sera

May 16, 2019
Shenzhen, China

01

Fabio Savelli: It's a pleasure to hold this interview, and for this country, it's very important to understand this moment for 5G, and for cyber security. For my first question: What's your opinion about the current events regarding Huawei, the relationship with the US, and the US ban on Huawei Technologies? That's the first question.

Catherine Chen: First of all, I would like to thank you, and welcome you to Huawei! I'm very happy to have the chance to talk with you. Well, actually, you've raised two questions. The first one is about 5G, and the second one is about Huawei's relationship with the US.

5G is the latest generation of mobile communications technology. I think there are several conditions that any new technology must meet before it can be deemed or qualified as a technology that can benefit people. The first condition should always be that the technology is more advanced, and affordable and accessible for everyone. The second condition is that it must be more secure.

In the 4G era, base stations were usually installed on big towers and the installation could require the joint efforts of a crew of several people. This could even require entire streets being blocked off.

Allow me to show you a video about how a 5G base station is installed. As you can see, the base station

for this new technology is much smaller and lighter. Only a single worker is needed to easily complete the installation. You don't need many extra tools to install these base stations, and several turns of screws are enough. The easy installation and deployment are driving down costs.

In addition, with the use of hundreds of megahertz of spectrum and large-scale antenna arrays, a single 5G cell has 97 times the capacity of a 4G cell. This delivers much better user experience and also helps bring down the total cost.

Aside from that, this new generation of technology is also very environmentally friendly, particularly thanks to lower power consumption.

Why do I say 5G is more secure? Because through the application of the previous generation of technology, we have identified high-risk scenarios and known areas for technological improvement to ensure that customers' personal information won't be stolen or intercepted illegally. All of these factors were taken into account during the R&D of 5G. So technically speaking, 5G has taken security to the next level, when compared with 4G.

Allow me to cite one example. We know that fending off malicious attacks matters most to security. This requires the encryption of personal data and the data

for transmission. I can assure you, the encryptions of 5G could even protect systems from attacks by quantum computers.

As for your second question about the relationship between Huawei and the US, we spent some time trying to communicate with the US government. We wanted to show them what kind of company we are, hoping our efforts could resolve the misunderstandings. We even promised that if they did have concerns, we would try to find solutions to address relevant risks. However, they refused to communicate with us. For now, we've decided to take legal action as the major means to deal with the issues. We believe the judicial system of the US will arrive at a just conclusion.

02

Fabio Savelli: Do you believe that Huawei will be excluded from 5G contracts with telecom companies in European countries like the UK, Italy, and Germany, similar to what is happening in the US?

Catherine Chen: We don't see this happening in Europe, and we believe the possibility will be slim in the future. The situations we face in Europe are totally different from those in the US.

The US has already banned Huawei from dealing with US carriers because of limited mutual understanding.

In Europe, Huawei has been working with local carriers for 10 to 20 years. They have been using Huawei products. Our solutions for 5G and other technologies have been developed in collaboration with European carriers, and they know Huawei very well. I believe they have the ability to make decisions independently despite the aggressive requests of the US government [to ban Huawei]. I think the possibility [of Huawei being excluded from 5G rollouts in Europe] is very slim.

03

Fabio Savelli: How do you respond to American accusations that Huawei is conducting espionage through your routers and base stations?

Catherine Chen: The US government should present facts and evidence to substantiate all of their accusations against Huawei. Continuing to criticize and accuse Huawei without providing any evidence is essentially lying. Aren't they afraid that their nose will keep getting longer and longer like Pinocchio?

04

Fabio Savelli: Huawei's ownership structure is not clear to me. Who are the major shareholders? What's the shareholder structure of the company? For example, essentially the founder Mr. Ren has said that he has just 1% of the company's shares.

Catherine Chen: Our founder Mr. Ren has less than 1.14% of the shares, and this ratio changes slightly every year. The remaining 99% is held by our 96,768 employees through the Union.

I understand why you feel that our shareholder structure is not clear. I'd like to tell you the background of it. The market economy doesn't have a very long history in China. Huawei has gradually established many of our institutions based on Chinese laws and government administrative regulations.

Mr. Ren founded Huawei with capital from himself and five of his friends and their friends. The other five founding members didn't join Huawei as employees, and eventually withdrew their shares from the company. Some did this by having amicable discussions with the company and withdrawing their shares by a certain percentage. Others withdrew their shares by resorting to court arbitration. All of them had completely withdrawn by 2000.

Since Huawei was founded, Mr. Ren has been diluting his shares and distributing some of them to employees. Relevant information is transparent and available online. This shareholder structure was completed in 2003, and it fully complies with Chinese laws and regulations.

To put it simply, Huawei is a company that is wholly

owned by its employees. No government agency or third party holds a single share in Huawei. Our shareholding employees are the shareholders of Huawei in a real sense. They take money out of their pockets to buy shares, and they receive dividends. They also need to accept risks associated with the depreciation of shares. They also have voting rights. According to Huawei's Charter of Corporate Governance, shareholding employees have the right to elect 115 representatives of shareholding employees by voting, and their voting rights correspond to the number of shares they own – it's a one-vote-per-share arrangement. The 115 shareholding representatives elect members of Huawei's Board of Directors on a one-vote-per-person basis. In a nutshell, our shareholding employees have the rights to vote and receive dividends, and they need to accept relevant risks.

I think our shareholding mechanism is very interesting. If you are interested in it, you are welcome to visit our Exhibition Hall of Virtual Restricted Shares. In this room, you can query shareholding data of individual shareholding employees. We believe this shareholding mechanism is very effective, as it encourages all employees to create value together with the company. In a public company, the majority of shares are owned by a few shareholders or senior executives, resulting in a group of superrich people. At Huawei, however, there is

no such group. Even our founder owns only a very small portion of company shares. At Huawei, our shareholder structure is about making everybody rich.

05 Fabio Savelli: Can the Chinese Communist Party interfere in Huawei's strategies? I heard that there is a component member of the Party in the committee. Is this true?

Catherine Chen: This is not true. Huawei makes its business decisions and strategic choices independently, without any interference from the Chinese government or the Communist Party. In addition, according to China's Company Law, all companies operating in China, including both Chinese companies like Huawei and foreign companies operating in China, must establish a party committee within their organization if they have more than three party members among their employees. However, the party committee does not interfere in our daily operations.

06 Fabio Savelli: Huawei has a clear competitive advantage in 5G. It looks very promising because you are investing in chipsets, software, hardware, and smartphones. Within the next five years, Huawei will become the leader in 5G. What's your outlook on

revenue growth in this regard?

Catherine Chen: We can see that many European countries, including Italy, have made 5G a strategic priority for critical national infrastructure development. This has presented lucrative opportunities for 5G equipment providers and carriers, as well as small and medium-sized enterprises (SMEs) seeking to develop 5G applications. This means more market share and more revenue. We are very optimistic about 5G over the next five years. I believe we will enjoy substantial growth both as a telecom equipment provider and as a smartphone maker.

07

Fabio Savelli: Italy's Prime Minister Giuseppe Conte recently met with Mr. Ren. Do you feel that in the next month Italy will be open to signing 5G contracts with Huawei? Will it accept Huawei Technologies?

Catherine Chen: I think Italy's decision on when to deploy 5G has nothing to do with the prime minister's meeting with Mr. Ren. We know that a lot of European countries, including Italy, want to take a leading position in 5G deployment. This is because 5G is indeed very important. Whether Italy chooses Huawei depends on whether our technologies and services are good enough.

In fact, we expect that Huawei's growth contributed

by 5G will be limited. This is because if we don't sell 5G products, we will sell more 4G products; and if we sell 5G products, we will see less sales in 4G products. However, there will be unlimited opportunities for those who develop applications using 5G, such as SMEs.

If I had the chance to make a suggestion to governments, I would say that Huawei and European equipment providers like Nokia and Ericsson should be all allowed to provide 5G technologies. These providers and Italian carriers should develop more application platforms. SMEs can then develop their applications for mobile phones on these platforms. These applications will create a massive amount of data traffic, enrich our lives, and present a huge opportunity for all SMEs.

08

Fabio Savelli: Last question, are you sure that there are no backdoors in Huawei equipment?

Catherine Chen: Of course we are sure of that. This is not just our own assessment. Over the past few decades, we have stood government-led tests from Canada, the UK, and Germany. For example, the testing report from the UK is available online, and its conclusion is that Huawei's equipment contains no backdoors.

We also undergo non-government-led third-party tests. The results of these tests also show that Huawei's

equipment contains no backdoors. According to the results of assessments conducted by third parties on Huawei and other industry players, Huawei's performance is above industry average, and even at very top in some areas.

Why are we so sure that we have no backdoors? Our company has 180,000 employees and it's simply impossible for us to hide a backdoor so well that no one can discover it.

The US has been criticizing Huawei for having cyber security issues. I think such claims are wrong for multiple reasons.

First, they shouldn't assume that other companies will do the same wrong things that they have been doing.

Second, cyber security is a technical issue at its core, so we should improve cyber security capabilities through technical means. The US government has been saying that all Chinese companies are not safe. This approach absolutely doesn't work. It will mislead the public because people may assume that everything is safe as long as Chinese companies are excluded from 5G network deployment. This assumption is of course not correct.

In fact, Huawei has virtually no presence in US networks, but there have been many network outages

and malicious network attacks in the US over the past few years. This suggests that excluding Huawei's networks cannot ensure security. So we need to work together to improve cyber security capabilities instead of being misled by politicians.

Catherine Chen's Interview with Sky Italia

May 16, 2019
Shenzhen, China

01

Cristian Paolini: In the past 30 years, Huawei has become one of the leading players in the technology sector. What is the secret of such rapid growth?

Catherine Chen: There are external and internal factors that contributed to our success.

Let me start with the external factors. First, China implemented the Reform and Opening-up policy in the late 1970s which opened up the private sector. This injected powerful impetus in China's market economy, which experienced explosive growth in the next several decades. Under such a context, Huawei was able to achieve fast growth. Second, Huawei chose to enter the high-potential ICT sector. This sector had gained much know-how before and enjoyed the explosive development in the past 30 years.

The internal factors for our success are similar to those of many other successful companies. For example, Huawei, along with these companies, is consistently focused on investing in technology R&D. Huawei has been investing heavily in R&D, ranking fifth or sixth among all technology companies around the world in recent years. In the future, Huawei will maintain its strong investment in R&D.

Our Employee Stock Ownership Plan (ESOP) is another internal factor that has inspired vitality in our employees and across the entire organization.

02 Cristian Paolini: You mentioned R&D investment and last year, Huawei invested about US\$14 billion in R&D. This is a remarkable investment. On which sectors do you focus your research?

Catherine Chen: First, Huawei will continually invest heavily in the traditional ICT infrastructure sector, which includes all technologies related to connectivity, such as 5G and ultra-broadband. Second, we will also retain strong investment in emerging technologies, such as artificial intelligence and cloud services. Third, smartphones and other consumer devices that are familiar to consumers are also key areas for our investment.

03 Cristian Paolini: You mentioned the smartphone market. As reported, Huawei has now surpassed Apple. Do you think that 2019 will be the year that Huawei surpasses Samsung and becomes the leader in the smartphone market?

Catherine Chen: Providing high-quality services to consumers is one of the main reasons for Huawei's strong investment in device technology. Of course, we hope this will attract more consumers to like and choose our products. The ranking you mentioned is just the natural result of consumer choice.

04 **Cristian Paolini: So what is Huawei doing with regard to 5G development in Europe?**

Catherine Chen: Huawei was one of the first companies in the industry to invest in 5G. We started investing in 5G back in 2009, and have invested heavily in this area. We have 5G R&D teams in Canada, some European countries, and China. They all collaborate on developing 5G technology.

The benefit of having all these teams work together is that they will take all of the possible application scenarios of 5G into account when they develop solutions. These scenarios include densely populated urban areas, sparsely populated rural or remote areas, and other future applications in industries such as the automotive and manufacturing industries.

Our 5G R&D team in each country researches unique application scenarios locally as well as basic technology that can be used around the world.

05 **Cristian Paolini: What is the role of Italy in the scenarios you just described?**

Catherine Chen: We work with carriers in Italy, including Telecom Italia and Vodafone, to develop customized innovative solutions for Italy during our

collaboration in network construction and operations.

In terms of technology R&D, our R&D team in Italy contributes greatly to the development of microwave technology at Huawei, and spearheads Huawei's overall R&D work in microwave technology.

06

Cristian Paolini: Returning to the topic of the international situation, will the current tensions between the US and China influence Huawei's development in some way?

Catherine Chen: There will be very little impact on Huawei's sales in the US, because the US government has been restricting Huawei from participating in the US market for the past 10-plus years. However, any trade disputes between countries will greatly affect and hurt the companies in those countries. Over the past two years, there have been many international trade disputes initiated by the US, which bring great uncertainty. I believe companies in Europe, Japan, Canada, and China all feel the same way about these trade disputes, which make them concerned in terms of both investment and business operations.

07

Cristian Paolini: Is Huawei afraid of limitations in the European markets?

Catherine Chen: I think your question is a hypothetical one. I'm quite optimistic, and I don't think we will ever be in this situation in Europe. Huawei's situation in Europe is completely different from the US. We have large amounts of procurement and many R&D partnerships in Europe. To be more specific, the technologies and products provided by Huawei do not just come from China. Many of them are developed together with European companies. Huawei's technologies and products have been used or are still being used by a large number of European customers and consumers over the past 10 to 20 years. We believe that European countries will make their own independent decisions.

Given Huawei's business operations in the European market for nearly 20 years, there might be ups and downs in the European market. But generally speaking, the market has a very favorable business environment, which is both stable and predictable. This will attract more and more companies to do business in Europe.

08 Cristian Paolini: We started with talking about the first 30 years of Huawei, but what if we want to imagine the next 30 years for Huawei? What do you imagine Huawei will be like in 30 years?

Catherine Chen: We believe the company will maintain

the same momentum for the next 30 years, just as we have always done over the past 30 years. When Huawei was just a startup, we just had several investors, but we had a grand ideal. Now, we have more than 96,000 shareholding employees who invest in the company's growth.

But Huawei's ideal has never changed. That is to make technologies and networks easily accessible and affordable for everyone around the world. Over the past 30 years, we believe we have done a good job.

But one-third of the world's population still doesn't have broadband access. Over the next 30 years, not just individuals, industries like manufacturing will also need ultra-broadband networks. Moving forward, we will continually work to achieve this common ideal. We aim to bring the benefit of technology to all people, and improve the way people work and live.

Guo Ping's Canadian Media Roundtable

May 28, 2019
Shenzhen, China

Guo Ping: Good afternoon, media representatives. I'm very happy to have this opportunity to talk to you.

Huawei has long-term connections with Canada. Over a decade ago, telecom equipment vendors were seeking mergers and acquisitions. Alcatel and Lucent merged, and so did Siemens and Nokia. At the same time, Huawei was seeking a merger with Nortel.

Huawei and Nortel negotiated for a long time. I was the principal negotiator for this deal myself. At that time, Huawei almost became a company controlled from Canada. I talked with the then-CEO of Nortel, Bill Owens, as well as his successor Mike Zafirovski later on. At first, we wanted to merge our two companies. Later, we tried to negotiate a merger of just the wireless businesses of our two companies. Unfortunately, Nortel decided to withdraw from this negotiation. Otherwise, we would have become a company that was partially controlled from Canada. So we really have a lot of connections with Canada.

Many times over the years, I have attended Canadian Night at the World Economic Forum annual meetings in Davos and had extensive discussions with Canadian officials. Canada has very rich mineral resources. But in the eyes of Canadian officials, high-quality human resources are worth even more. Encouraged by your officials, Huawei continues to invest significantly in

technology in Canada.

We are glad that Huawei is ahead of others in 5G. We have many key R&D staff working at our Ottawa Research Center. So in some sense, Huawei's 5G is actually Canada's homegrown technology, and Canadians have made significant contributions to 5G. Last year, we commended outstanding contributors to 5G, and some top contributors were Canadians.

I'm sure you've all heard "America First" from the mouth of President Trump many times. You may also know that when he says "America", he is only referring to the US, not the Americas. The US just seeks to protect its own interests.

We've also noticed the Canadian foreign minister keeps emphasizing that Canada is a country that follows the rule of law. We have confidence in that. We are also aware that Canada is an independent country that advocates autonomy, openness, liberty, and shared success. We look forward to even more prosperity for Canada, and more development opportunities for Huawei in your country.

These are my opening remarks. The floor is now open for questions. Thank you!

01

We have TV and radio shows, BNN Global TV, and of course online, we have a couple of national radio shows as well. And we are based at Vancouver. I am interested in Ms. Meng who was arrested in Vancouver. I guess the perception that the Americans are trying to portray is that Huawei and the Chinese government are basically one. Is that the case? Our prime minister said we are a country ruled by law and that we were observing the law when we made that arrest of her. How do you deal with that perception?

Guo Ping: It was quite unfortunate that our CFO Meng Wanzhou was arrested in Canada at the request of the US. We are pursuing legal actions to protect the rights of Ms. Meng and Huawei according to the laws of Canada. We believe that neither Huawei nor Ms. Meng have committed any wrongdoing. We hope that the legal system and also the administrative branch of Canada will draw on conclusions based on facts and prove that both Huawei and Ms. Meng are innocent.

Maybe you have noticed that President Trump has said on many occasions that, if he thought it's good for the US, for the US-China trade deal, he would certainly intervene in Meng's case. Do you think he is telling the whole world that this case is politically motivated?

Ms. Meng appeared in a Vancouver court recently. I want to draw your attention to several disclosures made

by her lawyers in court.

First, the arrest of Ms. Meng violated a core principle of Canada – double criminality, because Canada does not impose sanctions on financial services in relation to Iran. Therefore, the extradition request does not satisfy the double criminality requirement.

Second, it was made clear in court that the bank in question had knowledge of Huawei's business operations from the very outset. Therefore, there is no evidence to prove that Ms. Meng committed any fraud.

As your prime minister and foreign minister have mentioned, Canada is an independent sovereign state with an independent justice system. I believe your court will make decisions based on facts.

02 The US is putting more pressure on Canada. If Canada eventually bans Huawei from participating in its 5G, will Huawei withdraw from Canada?

Guo Ping: I have repeated the words of the Canadian officials several times: Canada is an independent sovereign state that is governed by law. I believe that Canada will make a decision based upon its own interests and that it will not simply follow someone else's orders. I have confidence in that.

As for Huawei, we continue to adopt an open and forgiving attitude and support mutually beneficial collaboration. We will work conscientiously to ensure business continuity and customer interests.

03

Do you have a replacement plan for Android and maybe even Windows? There seems to be a replacement plan, but is there a timeline or a name for that system? Some rumors are circulating right now.

Guo Ping: I have noticed some issues regarding our collaboration with Google on Google Mobile Services. You may have noticed that Google is at the top of the value chain, while Huawei just makes hardware. These issues have nothing to do with national security.

Huawei will continue to work closely with relevant stakeholders and try as much as we can to protect the interests of both our consumers and the company itself. So I think that if the supply chain can be disrupted arbitrarily, people will lose confidence in US companies and the interests of these companies will also be harmed. It is Huawei today, but who knows who will be targeted tomorrow? If Canada is more advanced in certain domains, will you be worried that you will be targeted? We still hope that the global supply chain can collaborate so that everyone can leverage each other's

strengths to produce the best products and solutions according to David Ricardo's theory.

04 **So obviously Huawei is a leader in innovation. How exactly does Huawei foster or cultivate innovation and can you provide specific examples?**

Guo Ping: *The Huawei Charter* stipulates that Huawei invests at least 10 percent of its annual sales revenue into R&D to ensure that we obtain sufficient resources. If our business performance is very good, this percentage may increase.

Second, Huawei greatly values talent. We hire the best people from around the world and leverage their strengths to help us resolve the challenges and issues we encounter during research and development.

Third, Huawei works with many foreign companies and learns from them. We have established a complete R&D system which enables us to continuously innovate and institutionally launch competitive products.

Over the past 10 to 20 years, we have worked with many consulting firms to build and improve our R&D organization and processes. We have spent nearly one billion US dollars in this area.

Our heavy investments have generated excellent

results. We are very proud that when it comes to innovation, from 0 to 1, Huawei is a tier-1 player. This is the case, for example, in 5G standards and 5G standard essential patents. Then, from 1 to N, we have managed to bring equipment that was previously enjoyed by only a small number of people to people around the world, including the most remote countries and regions in Sub-Saharan Africa. Huawei has made significant contributions in this regard. We have been seeing excellent results from our heavy investment over the past 30 years, either from 0 to 1 or from 1 to N.

05

Perhaps someone raised the question of a plan B. I wonder if such questions caused Huawei to reconsider the fact that there are so many key links in communications technology and digital technology and generally they are controlled by single companies, and there isn't a plan B. I think we all assume this current situation will blow over. But Google is really dominant in operating systems, Arm in processors, and so on. Huawei, whatever, we may say that it is one of multiple companies that can supply the same technologies. So if Huawei disappeared tomorrow, the world would continue. If Google disappeared, then it would be a huge problem. Do you see a way of evolving the industry beyond that kind of bottleneck?

Guo Ping: I respect the US's global leadership in basic applications, but this leadership is not perpetual. They have halted their partnerships with Huawei, which will negatively impact our customers and the markets in which we operate. The US government is abusing its national power to block cooperation between companies. This will undermine trust in long-term cooperation with US companies and have a negative impact on these companies.

I believe companies can only become stronger by being open and collaborative. Though Google is strong, we have other alternatives such as Baidu and Yandex. If our customers are forced to distrust a country, will it drive the rapid growth of other alternatives?

06

During these past few days, we have been touring various labs and facilities and seeing the types of innovation that Huawei has been working on. I'm curious, as a geek, as a nerd, what Mr. Chairman finds exciting about some of these lab projects and if there's any of these types of projects that you're not currently involved in and you would like Huawei to be involved in.

Guo Ping: Huawei remains focused on ICT, and does not seek diversification as some other companies do. We hope to use ICT as an enabler of industry digitization

and service upgrades. All of our labs that you have visited are designed to enhance our ICT capabilities. The supply chain is complicated, so we have made preparations to ensure its diversity. We don't plan to include components in which we invest heavily during product R&D in our business portfolio; instead, we will continue to focus on ICT equipment and services.

07 **It's been a very informative trip for us to visit all the labs and understand security. The cyber security lab was very informative as well, so we got a lot of facts there. But you're dealing with an opponent that's very aggressive, volatile, not based on facts, and punitive as well. And so what is your message to the Canadian government and the Canadians in general to ignore some of what the Americans are saying? What opportunities are there for Canada and Canadians with Huawei and continued Huawei investment and partnership?**

Guo Ping: First of all, I believe Canadians are aware of the fact that the US campaign against Huawei has nothing to do with cyber security. We barely have any presence in US networks. This means cyber security in that country has nothing to do with Huawei.

All we need to do is to help our customers tackle

their difficulties and do everything we can to serve the customers who have chosen Huawei. We look at cyber security from three aspects:

First is safety, which is about protecting people from danger.

Second is security, which means protection against attacks.

And third is resilience, which relates to network resilience and availability.

I would like to share my views regarding these three aspects.

We have established extensive partnerships with Canadian carriers. Since Huawei is a telecom equipment and service provider, we don't own or operate the networks of our Canadian customers. The telecom networks of Canada are managed by Canadians themselves. I believe that they can ensure safety.

Over the past three decades, Huawei has maintained the best cyber security track record and is now the strongest network equipment provider in the telecommunications industry. Huawei is also subject to the industry's toughest reviews. All these reviews have shown that Huawei's networks and technologies are secure, and, of course, we keep improving them.

There are many specialized cyber security testing agencies in the world. The Communications Security Establishment (CSE) in Canada is one of them. Huawei ranks among the top companies in numerous cyber security tests, including the CSE's tests. We understand the cyber security concerns of the Canadian government and other stakeholders, so I suggest we sign a no-spy agreement with the Canadian government. We promise, with confidence, that our networks are secure and that we don't install or allow others to install backdoors in our equipment.

Top officials from the Canadian government have repeatedly stressed that Canada is a country ruled by law. So I believe legal agreements can be signed to stipulate our responsibilities. Since the country is ruled by law, all decisions should be based on facts, instead of speculations or suspicions.

With our solid track record, the excellent results we received during tests by specialized agencies, and the legal documents I have proposed, I believe we can provide our customers with trustworthy solutions.

For the sake of Canada's cyber security, the government should establish similar requirements for all key ICT equipment providers.

As a major global provider of ICT technologies,

including 5G, we hope that our innovations can benefit the Canadian people. I suggest that Canada ensure cyber security by conducting reviews and signing legal documents.

08 **So, still about cyber security. I understand the messages that you have just expressed. To be more specific about the no-spy agreement, or other forms of legal documents, have you started talking to the Canadian government, for example, the Ministry of Foreign Affairs or the cyber security agency? Have you been engaging with them regarding these topics?**

Guo Ping: As far as I know, we are talking to the governments of some other countries about the possibility of signing such agreements, but we have not received any such news from the Canadian government.

Liu Wei: Today, we'd like you to take this message back to Canada. We will start communicating with the Canadian government. We have two key messages that we want to get across. First, we can sign a no-spy agreement. Second, Huawei is the only company in Canada that is subject to joint cyber security tests by both the CSE and carriers. We call upon other vendors to participate in these same tests and jointly contribute to cyber security standards and processes, as well as industry development in Canada.

09

It's a very interesting time to be the rotating chairman of Huawei. What happens when your rotation ends? Do you have a vacation? Do you keep helping the next chairman, the person that's going to take over your role? Working as a rotating chairman is a very interesting way of managing a business because you don't get tired or you always have new challenges. So, I was wondering, how does the rotation work, and are you excited to be a part of these specific and interesting times for Huawei?

Guo Ping: My last rotation ended on April 1. When my rotation ends, I'm still one of the seven-member decision-making team of the company. All three rotating chairs are members of this decision-making team, which exists to ensure management continuity. When I'm not serving as the acting chairman, I conduct in-depth research into some specific topics and drive those topics forward.

This is similar to the wild geese that migrate from Canada to the UK or Europe. They fly in a V-shape formation, and several geese rotate to take the lead. When one goose is not taking the lead, they are still flying together with the flock.

10

What do you think Huawei as a company will look like 10 years from now?

Guo Ping: Many technical topics have been politicized. Why? I think the reason is that technological progress has been too slow. Take our ICT industry as an example. Moore's law was identified over 40 years ago, and it has almost reached its limit. The same is true for the Shannon theorem. Currently it feels like the Newton era has come to an end, and we're waiting for the emergence of an Albert Einstein. What we need at the moment is more investment. The leading players should not attack the latecomers. They should focus on investing more to encourage the Albert Einstein of our era to emerge.

The US was once the leader in this sector, but this is no longer the case. It is getting anxious, and has started attacking the latecomers to avoid being overtaken. Making breakthroughs is very time-consuming for a leader, and now the followers are quickly catching up. The only way out is to increase investment in research, as well as in new science and technology to seek new breakthroughs. At Huawei, we are pursuing two purposes:

First, we want to survive despite the uncompromising attacks from the world's most powerful country.

Second, we are striving to make greater contributions to future technological breakthroughs.

11

So you've got two purposes: to survive and to make progress. I'm wondering about the issues that are even larger than that. And I think what we're seeing right now is a symptom of a problem that is going to have to be solved, which is that businesses and governments and connections with people are all out of alignment. So you've got security concerns that aren't being addressed. Google, Facebook, and other US companies are obviously collecting huge amounts of data, yet nothing was said about this by anyone, whether it was Huawei or anyone else; it just passed. Now, you've got this kind of politicization of the business process. So, 10 years from now, what would you like the world to look like in terms of the climate for innovation and the ability to deal with some of these larger issues? And I also wonder whether Huawei also sees a third purpose. Perhaps, this is to be responsive to the people, or to give people what they need, not simply exploiting market opportunities. Instead, I wonder if Huawei might aim to take the market and the world in a better direction. I also think that relates back to the problem with security, for example, privacy, which is not really being addressed in a systemic way.

Guo Ping: Well, that's a very broad question. Huawei is just a company, so I'm not sure whether we can answer this question. In the domain Huawei is working in, we believe that technological advances will help

build an intelligent world and an information society and significantly improve peoples' lives and change the way we work and live. We believe our technologies are beneficial to humanity.

As a company, Huawei is always ready and willing to remain open and work with our partners worldwide to develop better technologies and drive better application of these technologies.

You mentioned several companies that are not being questioned and their issues are not being politicized. I don't know the reasons behind that. As for Huawei, we do not own customer data. We just provide products and services to our customers, and we hope our issues do not become politicized, either.

Huawei has worked very hard with its partners for more than 30 years. We've ensured people can stay connected via voice, data, or image services. We are entering an era where all people and all things are connected and all things are intelligent. Therefore, we hope that with our advanced technologies, we can make our world a better place to live and contribute more to social progress. At the same time, we sincerely hope that this kind of technological progress will not become politicized.

12 **The issues you're currently facing are deeply political. Are you working with the Chinese government to overcome these issues with the US? How does that look?**

Guo Ping: I had wished the Chinese government would ink a trade deal with the US, so that Huawei could start talking with the US regarding our issues. But it seems that President Trump has already tweeted that he would use Huawei as a bargaining chip.

13 **Any company may go through difficult periods. Is this the most difficult time for Huawei? What actions will Huawei take to change the current situation if Huawei is used as a bargaining chip?**

Guo Ping: Huawei's business may be impacted a little by this, or even shrink. However, I believe that our management and technologies will continue to improve. The Chinese word for crisis consists of two characters: "Wei" and "Ji". "Wei" means danger, while "Ji" means opportunities. There is a Chinese saying that you may also find greater opportunities during a crisis. I hope that Huawei will survive and become stronger.

14 **So far, all of the answers we have heard from Huawei have been very measured and reasonable. For**

example, when asked if Apple would be banned in China, Huawei's president said, "No, that wouldn't happen." You've been so reasonable, but you have an opponent that is not and that has made irrational decisions. Is there a point Huawei will become angry, as the US has not provided any evidence to prove their accusations? Other countries, like the UK, are also asking for proof of such accusations. Is there a move Huawei can make to "show its teeth"?

Guo Ping: I remember when Pompeo, the US Secretary of State, was asked the same question by the media a couple of days ago. His answer was, "You've asked the wrong question."

As I've just said, I think many issues we face lie in technological stagnation. Moore's law and Shannon's theorem are about to reach their limits, and the Von Neumann architecture is not going to work. We need to make investments and seek breakthroughs, rather than trying to stop others from improving. I don't think that trying to stop others from improving is the right thing to do, nor is it an action that leaders or the brave should take.

Just as Mr. Ren has said, Apple is a very respectable company and we look forward to seeing more innovations from Apple so that it can lead the entire industry forward. At Huawei, we hope that we can catch up with or overtake Apple.

15

So just over the last few days, we've seen everything from Huawei wine to Huawei beef and on to self-driving technology. I'm just curious to know, what industries are you hoping to or do you see opportunities to commercialize? I'm talking in terms of innovation.

Guo Ping: First of all, the wine was not produced by Huawei, and we have never kept cattle, either. These are not major businesses of Huawei. Sometimes, after we sell telecom equipment to customers in countries that face economic difficulties, the customers may not be able to pay us. Therefore, they give their wine, marble, or even beef to us as a form of payment. China has a market with a population of 1.4 billion, so we can sell these kinds of products within a certain scope. Actually, we mainly sell these products to our over 180,000 employees and their families.

The wine and beef you had were from Argentina. Several years ago, there were strict foreign exchange controls in Argentina, and our customers in the country couldn't pay for our telecom equipment with any hard currency. There were almost no dealers of Argentinean beef or wine in China. So after we sold telecom equipment to these customers, we brought their wine to China. I don't think this is profitable for Huawei. We've helped Argentina build networks with our telecom

equipment, and build up the brand image of their beef and wine in China. I believe they welcome our approach because this helps increase their product sales in China.

I hope you can understand that Huawei faces different situations in each of the 170 countries and regions where we operate worldwide. We serve customers with our heart and soul, and that's how Huawei has become what it is today. I believe our commitment to serving customers has also benefited the countries in which we work. Of course, Huawei has grown robustly during this process.

I believe that our commitment to helping customers resolve their problems and improve their communications will benefit humanity. This spirit reflects our customer centricity, which is the most important element of our corporate culture.

16

I'm still trying to get at some of the underlying issues of what we're talking about. A lot of the concern right now is obviously not specifically about Huawei, but about the ascendancy of the Chinese economy while other economies are languishing. Can you suggest to us what would be different in the Chinese approach to business or the Huawei approach? Can you characterize how it's different? And what is the world going to look

like as Huawei's influence spreads and the Chinese influence spreads and how will it be different from what we've seen so far? How will it be better?

Guo Ping: This is too broad a question. I don't think I'm the right person to answer it. At Huawei, we focus on two things:

Externally, we stay customer-centric. As Peter Drucker, the father of modern management, pointed out, only satisfied customers will continue placing purchase orders. Huawei has always put this into practice.

Internally, we rely on our dedicated employees. It is their hard work and contributions that have been driving the company forward in both technology and management.

Sometimes I envy Canadian companies and some other Chinese companies because they have abundant resources to pool from. All we have is our employees' brains. That's why Huawei has prioritized the added value of human resources over financial or capital gains. Our valuable, hard-working employees are the single resource that we have accumulated.

17

Regarding all the trouble going on right now, are you working with your carrier partners in Canada to

communicate to their customers about their devices? I've been talking to a lot of people that have Huawei phones. My teenager kids and a lot of their friends have bought Huawei phones because of the value and the technology, but they're scared that their phones aren't going to work or that they're not going to have Google compatibility? What is the message that you will be telling these customers and are the carriers helping you with this?

Liu Wei: We have established a joint communications team with Canadian carriers, including Bell, Telus, and Rogers. Mr. Ren has said that the supply continuity of Huawei products can be guaranteed. When it comes to specific equipment and devices in Canada, we need to discuss with carriers and come up with more detailed plans. In general, we believe our supply continuity can be guaranteed.

Guo Ping: The use of our products that have already been launched will not be a problem. As for whether our new products can provide Google Mobile Services (GMS), we are still discussing this with relevant parties. We are very disappointed by the way the US government has been pressuring us and harming consumers, and we strongly oppose such action. We will talk with relevant parties about how to ensure that Huawei's new product launches go smoothly, so that we can provide even

better consumer applications and experience.

18 Any chance for Android Q, the next newest Android version, on the actual devices? Because you had the three-month extension to calibrate with Google. Is there a chance that we will get it before the end of the three-month period?

Guo Ping: I can't give you an answer to this specific question now, since this matter is still under discussion with relevant parties.

19 Can you tell us about the status of Huawei operations in Canada such as the R&D Center in Ottawa? Is that affected at this point? Do we know if it's likely to be affected?

Liu Wei: Huawei's operations in Canada are business as usual. As our Chairman Liang Hua highlighted when he visited Canada in February, Huawei is going to increase R&D investment in Canada and recruit another 200 R&D employees this year. We have already brought in about 100 new R&D engineers, meaning we are halfway to our goal. Our R&D operations are going quite well and we are confident about our future operations.

In March, Mr. Ren also told CTV that as the US is

becoming increasingly closed off in R&D and many other areas, Canada can become a paradise for R&D innovations as long as it remains open and independent.

Guo Ping: It's really nice to have this conversation with you. All Huawei employees and executives have always felt a special connection with Canada. Last year, we held a technology workshop here.

We trust Canada's respect for the rule of law and believe that Canada will remain a free market, stay open and independent, and collaborate for shared success. Huawei hopes that Canada will seize the opportunity to make greater breakthroughs than its neighbor to the South who is closing its doors. We look forward to seeing Canada become a beacon in ICT for the rest of the world.

Thank you!

Innovation: Our Shared Ambition

Ken Hu's Speech at VivaTech 2019

May 16, 2019
Paris, France

Glad to be here for VivaTech. A fantastic event about innovation. The energy here is amazing.

Most of you probably know about Huawei by our smartphones. You may have seen this advertisement in many places in Paris. This is our latest smartphone, the P30.

Many of you may know this gentleman very well, too. Antoine is not just a hero in France. He is also a brand ambassador of Huawei smartphone.

But we do more than smartphones in France

We have been here for 17 years. We set up our first office in La Défense. Now, we have nearly 1,000 people, and five R&D centers here. With these talented people, we have done a lot in France.

Meet our French aesthetics team. They designed the color, material, and finish for our P30 smartphone. It is very beautiful. And we couldn't have done it without our French team.

We provide networks to support broadband services like Orange Box, B&YOU, and SFR Red. We also help French businesses go digital. We are working with the National Opera of Paris to help them create a brand new website that helps people discover opera and ballet.

By creating this experience, people from all over the world can appreciate art through the Internet, for the first time in the 350 years of history.

Today, I'm very excited to see so many young faces here. I know many of you here are from startup companies. You remind me a lot of when I joined Huawei 30 years ago. This is where we started 30 years ago – an old apartment building in Shenzhen. Our first office was on the sixth floor.

Get close to problems

When I joined Huawei 30 years ago, it was a startup with less than 50 employees. And I was employee No. 41.

When we first started out, there was a big opportunity for Huawei. At that time, telephone penetration in China was less than 1%. The market potential was huge. But the competition was tough. Our competitors were all big brands with advanced technologies. As a startup company, the question for us was how to access the market and compete with those incumbents. Many of you here may face the same challenge today. Our strategy was to focus on one product – the switching system – and try to make a difference.

Let me share my personal experience. One of our

customers had a problem with their equipment. It was always going down, particularly at night. We ran so many tests in the lab, but we couldn't find the cause. That was really frustrating. So three of our engineers, including myself, decided to spend a couple of nights in their equipment room, to try to find the cause. We slept on the floor. At midnight, we heard squeaking underneath the floor. When we lifted the floorboards, we saw rats were chewing the cables. That's the cause.

Our solution wasn't very complicated. We made a special cable with an additional layer of wire mesh. And that fixed the problem. This special cable helped us open up the market.

You may think this special cable wasn't very complicated innovation, but that's the first lesson I learn about innovation. Innovation is not easy. But if you get close to the problems – close to the ground – you'll find it's much easier.

Key technologies bring revolutionary changes

Innovation can be led by a problem, because there's a real need. But innovation is now being driven by technologies, particularly digital technologies. 5G, IoT, cloud, and AI are key digital enablers. They are all developing fast and many are ready for massive

commercial use. Each of them can bring great benefits.

For instance, 5G can provide super-fast connections with much lower latency. IoT will help generate huge amounts of data that we have never seen before. Cloud will help process this huge volume of data more efficiently. When they combine with each other, there will be fundamental changes. All people and all things will be connected. They will be online all the time. Now most things are not connected and are offline. Cloud will help to make AI accessible everywhere, on-demand, and affordable.

These are not just changes to technology. They will change the way we do business. More importantly, they will change our mindset on how to engage customers, establish business processes, and make decisions. This is digital transformation. It will take us to a new era where we can fully leverage the power of digital technologies to make big changes to everything we are familiar with today, and to create something brand-new.

Over the past 10 years, our mobile phone has become a personal computer. How will it change next? Of course, mobile phones will become more powerful and smarter, especially with AI. With mobile phones, we can take professional photos; we can count calories by taking pictures of food; we can even make reading more fun for deaf children. Has anyone here heard of

an app called StorySign? With this app, you hold your AI-powered smartphone up to a book. This app will read the book using sign language. This is pretty cool.

We are excited about what has already been achieved, but what more can we expect in the future? What's going to happen to our mobile phones over the next 5 or 10 years? I think, our smartphones will become a portable personal computing center. This will create a user-centric ecosystem, which will provide seamless and intuitive digital experience. How do you like your digital experience today? I think it's ok but not good enough. We have to switch between multiple devices and applications on our smartphones all the time. This makes the experience fragmented. We need to make some change.

In the future, your smartphone will be at the center of a new ecosystem, which is connected to the cloud, and powered by AI both locally and on the cloud. All other electronic devices, including TVs, PCs, tablets, cars, washing machines, and robots, will be connected to this ecosystem for seamless experience. This is a truly personalized system. It can understand what you need, remember what you like, and give you what you want even before you ask for it.

They will see big changes. Cars will be shared, connected, electric, and smart. All these changes will rely

on digital technologies. This is the digital transformation of cars and the auto industry. The auto industry will have to focus more on providing better mobility services, instead of just focusing on making stylish, powerful cars.

Cars will become the "third place" we go, in addition to our home and work. Driving experience will be defined by software. Like your smartphone, software in your car can be upgraded anytime anywhere to refresh your experience.

These revolutionary changes are something we need to keep in mind. No matter you are a startup or an established business, we need to figure out how to maximize the potential of digital technologies. However, technology is changing so fast. No single company has the expertise or resources to do all.

Do what you do best, then collaborate on the rest

However, when we collaborate, we have to identify our focus – what we do. We need to be clear about what we don't do. Don't try to get everything in your hands. It will be easier to build up your competitive advantages and create more room for collaboration.

At Huawei, we apply this by focusing on our own strengths. For cloud computing, we focus on ICT

infrastructure and building intelligent platforms where our partners' content, applications, and clouds can thrive. For AI, we only focus on computing power and development platforms. Our goal is to make AI a general-purpose technology that is accessible, affordable, and easier to use for all people and organizations.

In order to promote collaboration across industries, we have also built a platform called OpenLab. Our OpenLab Paris opened last April in 2018. It provides a platform for experts from different industries to identify their future needs in digital transformation and to develop industry-specific solutions. In just one year, 50 partners worked on 15 industry solutions for retailing, manufacturing, and smart cities.

This makes us quite confident to expand this platform. Today, I'm excited to announce that, over the next five years, we will invest 35 million euros in our OpenLab here in France. We want to make it a stronger platform for cross-industry collaboration.

Leaving no one behind

I've talked a lot about how we innovate. But I also want to give some thoughts on why we innovate. While we are making greater progress in technology, many people are still left behind.

Mobile broadband penetration in Europe is almost 100%. But, half of the world's population still has no Internet access. Different digital applications have become a major part of our lives. But 43% of the EU's population still lack basic digital skills, like searching for information online.

The gap is getting bigger. We need to take action now. The French government is already working on this. The Tech for Good initiative is a great example. It's a platform for tech leaders to explore how we can use technology for social good.

I was honored to join the discussion yesterday, very constructive and fruitful. We would like to contribute our efforts, too. This year, we launched a global initiative called Tech4ALL.

We aim to help 500 million more people to benefit from digital technology over the next 5 years. This program is a global initiative, which many of our partners and customers are joining.

In Africa, we are working with Orange to connect 120 million people in 18 countries by providing wireless networks and services. Here, I'd like to show a short video taken by one of our engineers in Africa.

This is a small village in Nigeria, called Tobolo. It is over 500 kilometers away from the capital city, Abuja.

You might think this is a local celebration. Maybe a traditional holiday. But it's not. This is actually the grand opening of their first mobile base station in this village.

Here in Paris, we have thousands of base stations, so we can enjoy great digital services. It's normal for us. But for those villagers, this single base station is a big deal. For the first time, it connects them to the outside world. That means more job opportunities and easier access to healthcare, and changes their lives forever. This is meaningful.

Innovating in France with France

Here in France, you've got world-leading basic research, a government that strongly supports innovation, so many talented people, and an innovation-friendly environment. I think France is in a great position to be the innovation hub of Europe.

We are so proud to be part of this ambition. Let's work together to make it happen.

Thank you.

Systematic Cyber Security Governance

Ken Hu's Speech at the Potsdam Security
Conference

May 23, 2019
Potsdam, Germany

I'm sure you've seen a lot about Huawei in the news these days. It's pretty hard not to. Allow me to give you an update on what's been going on, and then let's talk security.

First, a quick intro on what we do here in Germany.

Huawei is a global provider of digital technology. Most people are familiar with our smartphones, especially our photography. Incidentally, we developed the camera technology in our smartphones together with a time-honored German company: Leica. We are very proud of what we've achieved together.

But we do much more than smartphones.

We have been in Germany for 19 years. We opened our first office in Bonn, in fact. Now, almost two decades later, we have more than 2,600 talented people serving 50 million German consumers.

We provide networks and services to all three major telecom carriers in Germany, and also to smaller regional carriers.

We are helping the German business community go digital too. German ingenuity leads the world in many vertical sectors. To help our customers maintain their lead in the burgeoning digital economy, we are working with them to digitize their products, services, and

operations across a variety of sectors like automotive, manufacturing, logistics, and transportation.

Germany is also one of our most important research hubs. We have more than 500 researchers across the country, with multiple R&D institutes and labs, where we work on next-generation technologies like 5G, connected cars, and solutions for growing verticals like smart manufacturing.

But that's not the story you see in the news.

In recent days, restrictions, based on ungrounded allegations, have been imposed on Huawei in order to disrupt our business operations. We believe this behaviour is totally unjustified.

In Europe, approximately three-quarters of smartphone users rely on an Android-based phone. Huawei accounts roughly for 20% of this market. Such reckless decisions can cause a great deal of harm to consumers and businesses in Europe.

This sets a dangerous precedent. It goes against the values of the international business community, cuts off the global supply chain, and disrupts fair competition in the market. This could happen to any other industry and company in the future if we don't jointly confront these issues.

I am honored to speak at this beautiful campus of the University of Potsdam. When I arrived earlier, I was told that we are at a historic site where the Berlin Wall once stood. This reminded me of the fact that we don't want to see another wall and we don't want to go through another painful experience. Equally, we don't want to build a new wall in terms of trade; we don't want to build a new wall in terms of technology either. We need an integrated global ecosystem which can help us to promote faster technological innovation and stronger economic growth. Ultimately, it is what we have to rely on in order to maintain prosperity for human society.

Luckily, many state leaders around the world have remained calm and objective.

Leaders from countries like Germany, UK, France, the Netherlands, and Belgium have all expressed that they will not follow US moves to block any companies based on country of origin.

We are very much encouraged by these developments, as well as the common belief here in Europe that, as a community, our shared security principles must be based on fact, common standards, and transparent processes.

This is the most rational approach to a complicated challenge.

A rational, proactive approach

Digital technology has developed fast, and it has brought along with it a host of new security challenges. All industries are going digital, everything is going cloud, and we are working very hard to connect all people and all things.

All of this means greater cyber security risks.

As more things are connected, attack surface also increases. As cloud platforms become more global, traditional security boundaries have blurred across geographical and legal jurisdictions. AI and big data are helping us create incredible value from data. But the risk of data leaks has also increased.

These are risks we all share.

As we work to address them, we would like to encourage all stakeholders to evaluate potential risks in a more rational, objective, and evidence-based way.

This is the cornerstone of a secure digital environment for everyone. If we are driven by emotions or bias, the results will be random, and we will fail to deliver on our security objectives.

Systematic governance

Cyber security involves many elements, stakeholders, laws, and governance mechanisms. The World Economic Forum's Centre for Cybersecurity has identified eight key issues that we have to address as a global community:

- technology and the law
- security of things
- cyber privacy
- new norms of collaboration
- systemic risk and resilience
- cyber war
- critical infrastructure protection
- and cybercrime

Cyber security is a complex challenge, and we can't solve it by focusing on one vulnerability at a time. And no single person, company, or country can do it alone. We need to work together.

What we need is a systematic, all-industry, full-society approach.

Unified cyber security standards

To start, governments and industry organizations need to work together on unified cyber security standards.

The German government has been very clear about its commitment to improving security standards for the entire telecoms industry. On March 7, Germany's Federal Network Agency published the key elements of new security requirements for telecoms networks and services.

Right now they are collecting comments from industry equipment providers like Huawei, from operators, and also from service providers. They will use these comments as input for the government's new requirements.

It's a remarkably open process. We are happy to see that the German government's key security elements are technology neutral, and apply equally to all companies and all networks.

This is the right approach, and we fully support it.

Germany has a long history of science and engineering, advanced processes, and a solid industrial base. These advantages will help Germany lead the standardization process in Europe – and around the world.

More broadly, 3GPP and GSMA are also making great progress with their Network Equipment Security Assurance Scheme (NESAS). This scheme is useful for evaluating the security of wireless communications equipment.

We encourage more countries, standards organizations, and industry bodies to get on board. Unifying standards wherever possible will help us to move forward as a community, both faster and more effectively.

Independent verification

Once we have clear, unified cyber security standards, we need to embrace independent verification.

As global supply chains become more and more complicated, we need to assess all suppliers and all components in the same way. We can't just evaluate one part of a connected system, because then the parts that haven't been tested for security will be targeted.

For cyber security solutions to work, both trust and distrust should be based on facts, not feelings. Facts must be verifiable, and verification must be based on clear, unified standards.

The digital community needs an end-to-end, comprehensive approach, supported by independent verification mechanisms for all industries and companies. This will ensure fair and objective results, and give all organizations the freedom to choose products that have been verified as secure.

Commitment and responsibility

At Huawei, we take cyber security seriously. It's top of our agenda, above all commercial interests. In particular, we are working across three areas to help establish a more secure digital world for everyone.

First, we are actively working with the digital community to develop unified security standards. We are a major contributor to the security and privacy standards of 3GPP systems. In 2018, we submitted 500 5G security proposals to 3GPP, and 227 were approved.

Second, we are a strong proponent of independent security verification. We have an internal cyber security lab at Huawei that is completely independent from all business departments. It performs independent verification of all Huawei products before they go to the market, and can veto products that don't meet security quality requirements.

On November 16, 2018, we opened our Security Innovation Lab in Bonn. This lab provides a platform for verifying our products and solutions, and it also supports in-depth technical exchange between Huawei and BSI on cyber security. Working together, we are exploring security standards for new technologies and developing more effective approaches to product security verification.

Finally, in addition to verification of existing products,

we are actively investing in security innovation. We invest roughly 5% of our total R&D budget in cyber security. Last year alone, our R&D investment was around \$15 billion US dollars. \$750 million of this was dedicated to cyber security.

We aren't just looking back to see what we can improve; we are actively looking forward. We are working with the industry to predict new threats and prepare our technology for challenges that the community will face in the next 10 years or more.

In our research center in Munich, we have hired many outstanding security experts from all over Germany. They focus on research and innovation in emerging security technologies, including trusted computing, data security, privacy protection, and the security of connected cars. We are also actively working with German academia and industry to drive security forward.

A common global objective

Technology fundamentally improves our lives and we should embrace it, not fear it. However, we do need to soberly address the fact that new technology also brings new challenges.

We believe that the challenge of cyber security is

best addressed as a common global objective. One around which we can unite governments, industry, and academia.

As we pursue this objective, we should avoid emotional and biased approaches, and move forward based on facts, evidence, standards, and independent verification.

Platforms like this conference are the perfect place to come together and look forward. As long as we keep working together, I trust we can build a better, more secure future for ourselves, and for many generations to come.

Song Liuping's Speech at the Press Conference on the Progress of the NDAA Lawsuit

May 29, 2019
Shenzhen, China

Ladies and gentlemen,

Good morning, and welcome.

As you know, politicians in the US are using the strength of an entire nation to come after a private company.

They are using every tool they have, including legislative, administrative, and diplomatic channels. They want to put us out of business.

This is not normal. Almost never seen in history.

The fact is, the US government has provided no evidence to show that Huawei is a security threat. There is no gun, no smoke. Only speculation.

And yet Congress signed Section 889 of the 2019 National Defense Authorization Act (NDAA) into law – assuming guilt, not innocence.

This legislation provides Huawei with no opportunity to defend ourselves or provide evidence. It gives us no opportunity to present a rebuttal.

This is "trial by legislature," and it is prohibited by the US Constitution.

On March 6, Huawei filed a lawsuit in the US, asking the court to declare certain parts of Section 889 as unconstitutional.

Just now, we filed a motion for a summary judgment. By doing this, we hope that the court can:

- issue a judgment in the fastest and most efficient way
- declare restrictions on Huawei as unconstitutional
- and stop enforcement of related sections

Some people question why Huawei is fighting this law. They say it's a PR stunt.

Let me be clear: This lawsuit is about what's right. The NDAA is bad for Huawei. But it also takes away freedom of choice for American carriers and consumers.

In the United States, many people in rural areas have been forgotten. They still don't have access to affordable broadband networks.

For many years, we have been working closely with rural carriers to ensure that all Americans have equal access.

Despite these efforts, two weeks ago, the US Commerce Department added Huawei to their Entity List.

This decision threatens to harm our customers in over 170 countries, including more than three billion consumers who use Huawei products and services around the world.

Connectivity is a basic human right, and the US government is putting their rights at risk, especially people in underdeveloped countries, where there is a large digital divide.

In addition, by preventing American companies from doing business with Huawei, the government will directly harm more than 1,200 US companies. This will affect tens of thousands of American jobs.

It's unfortunate that the US government is using so much time, resources, and political capital to attack a private company.

We believe this sets a dangerous precedent.

Today it's telecoms and Huawei.

Tomorrow it could be your industry, your company, your consumers.

The judicial system is the last line of defense for justice. Huawei has confidence in the independence and integrity of the US judicial system. We hope that mistakes in the NDAA can be corrected by the court.

As always, ensuring cyber security is Huawei's top priority. We are doing everything we can to continue providing secure and advanced products with the support of our global suppliers and customers.

However, we believe that US politicians are using cyber security as an excuse to gain public support for actions that are designed to achieve other goals.

These actions will do nothing to make networks more secure. They provide a false sense of security, and distract attention from the real challenges we face.

Cyber security is a shared challenge.

If the US government's real goal is security, we expect them to take the right approach and adopt honest and effective measures to enhance security for everyone.

Thank you.

America Needs Huawei

Catherine Chen's Byline in The New York Times

May 17, 2019

Published in The New York Times

An executive order signed by President Trump on Wednesday may lay the groundwork for a ban on the sale of Huawei's equipment in the United States by declaring a "national emergency." Additionally, an order issued by Commerce Secretary Wilbur Ross that goes into effect today will prevent Huawei — the world's leading telecom equipment provider — from buying components and technology from American businesses without United States government approval.

The Commerce Department's decision to require American companies to get special licenses to sell components to Huawei could make it hard — if not impossible — for the company to obtain key components for its network switching equipment and smartphones. But a ban will not make American networks more secure. Instead, it will hurt ordinary Americans and businesses by denying them access to leading technology, reducing competition and increasing prices.

The ban will financially harm the thousands of employees from the US companies that do business with Huawei, which buys more than US\$11 billion in goods and services from US companies each year. A total ban on Huawei equipment could eliminate tens of thousands of American jobs.

Because Huawei equipment is installed in dozens of 4G networks in underserved remote and rural parts of the country, a ban would prevent small, independently owned American telecom carriers such as Eastern Oregon Telecom and Union Wireless in Wyoming from developing new services and delivering faster broadband connections to millions of people. Instead, those carriers would be forced to spend their limited funds replacing Huawei equipment with more expensive gear supplied by its competitors (there are two — Ericsson and Nokia — and neither is an American company).

Huawei is the acknowledged industry leader in 5G technology. Blocking it could harm the American economy by preventing the United States from keeping pace with the rest of the world in rolling out 5G networks. The United States could end up falling behind the many European and Asian countries that plan to introduce 5G networks — ensuring that those countries take the lead in delivering new products and services to their residents, just as American companies did when the country moved quickly to roll out 4G, the previous generation of wireless tech.

Most important, a ban would fail to achieve its goal of making the country's digital networks more secure.

American officials worry that using Chinese equipment would allow Beijing to shut off phones, power, banking and other critical services. The security of our telecommunications networks is a responsibility shared by carriers, equipment vendors and service providers to collectively perform risk mitigation with assurance and transparency. Telecom carriers control the network and the data moving across it, and circumventing their controls would be extremely hard, given the available risk-mitigation processes. Huawei has repeatedly said it would refuse any order to attack or spy on its customers.

Moreover, singling out Huawei because it is headquartered in China makes little sense. Telecommunications companies such as Nokia and Ericsson draw from a global supply chain, as Huawei does. They use equipment developed or manufactured in China, which accounts for much of the telecommunications and internet gear currently installed in American networks. Blacklisting one company — or all of the companies from one country — does nothing to mitigate this global supply chain risk and will substantially reduce competition that will inevitably increase costs.

The executive order and the Commerce Department's regulation aim to prevent malicious actors from inserting

malware into telecommunications networks that could surreptitiously monitor network traffic or launch a cyberattack. This aim reflects the reality that the world's communications networks are vulnerable to attack by sophisticated nation-states, such as by implanting programmable code and exploitable vulnerabilities in hardware and software by virtual means. But such code can compromise the product of any equipment vendor — even those from countries that might seem friendly to America — which requires assurance and transparency in risk mitigation.

The United States government has entered into agreements for government-monitored risk mitigation with Nokia and Ericsson, which are based in Europe, allowing them to do business in this country despite their extensive operations in China. Huawei would welcome the opportunity to discuss similar agreements.

If the White House and Commerce Department really want to protect American networks, they will focus not on barring individual companies but on establishing a comprehensive risk management approach that relies on recognized best practices. In fact, that is precisely the strategy advocated last year by the Department of Homeland Security.

A move to block any company — let alone Huawei, the industry leader — will weaken competition, delay 5G adoption, reduce innovation and prevent American consumers and businesses from having access to some of the world's most advanced communications technology. The Trump administration should abandon its apparent course and instead develop a transparent framework to test and secure all parts of America's communications networks.

A Coffee with Ren

June 17, 2019
Shenzhen, China

Tian: Absorb the energy of the universe over a cup of coffee. I'm Tian Wei. They say a good conversation could be just like drinking a cup of black coffee and as stimulating as it is hard. I'm not sure whether today's conversation is going to be a really difficult one, but it should certainly be stimulating intellectually and thought-provoking. If you take a look at the panelists on the stage, they're trailblazers in their respective fields and certainly very outspoken about the challenges that we are facing today. I hope it's a conversation among minds without borders.

First up, A Coffee with Ren, so let's start with Ren. Ren Zhengfei, founder and CEO of Huawei. Of course, a legendary entrepreneur from China who has made China one of the world leaders of 5G. Huawei now, as far as I understand, is the world's largest manufacturer of telecommunications equipment and the second largest maker of smartphones. So, Mr. Ren, welcome.

On his right, Nicholas Negroponte. The reason I introduce Mr. Negroponte second is because he has just accepted Mr. Ren as his student. Big news. A tech visionary and co-founder together with Jerome B. Wiesner of the MIT media lab. And he has been providing funding for start-up companies around the world, including WIRED magazine and Sohu. He has also decided to devote the remainder of his time, which

is a lot, to opening science and global connectivity. Good to see you, Nicholas.

Next, we have George Gilder, certainly a fun individual, as well as a tech guru and a futurist, according to many. George is President Ronald Reagan's most quoted leading author and has been a venture capitalist in the US and Israel on many important projects. He enjoys his time as a runner and also as a skier. George, good to see you.

Last but certainly not least, we have a wonderful lady sitting on the stage as well. A long-time commitment to Huawei, 25 years working for this company, and a colleague of Mr. Ren, Ms. Catherine Chen, Senior Vice President and Director of the Board of Huawei, welcome.

01

Tian: Okay, A Coffee with Ren. I really need to start with Mr. Ren. Mr. Ren, is it because you cannot go to the US so you have all your friends coming to China for coffee?

Ren: Professor Negroponte was a teacher of Steve Jobs, and his son was once Jobs' roommate. That means that by becoming his student today, I am becoming one of Jobs' peers. I feel very honored. As for Mr. Gilder, he wrote the preface for *Built on Value*, a book by Professor Huang Weiwei. The preface is excellent, and I greatly

admire him. I respect both of them very much. It's also fantastic that we have this opportunity to meet you, a very famous TV host, here today.

02 Tian: I want to turn the table to both of you here. Aren't you afraid of being politically incorrect, coming to China and sitting here in the sitting room of Huawei while knowing what's going on between the US and China?

George Gilder: No. No, I think that I am contributing to saving the United States from the terrible mistake that it's currently making, epitomized by the outrageous bans and tariffs, as well as restrictions it is placing on Huawei. But also, I can contribute to a re-construction of Internet architecture to address the terrible security collapse across the Internet that is making everybody paranoid and preventing everybody from trusting anybody else. This is really a technical problem that Huawei can address and not a political problem.

Tian: Are we facing a technical problem or a political problem?

Nicholas Negroponte: I have more of a feeling that we're facing a cultural problem. I'm here for a different reason, and I invited myself to come here and even told Mr. Ren what day I could come. And it was surprising

that George, whom I have known for 40 years, was here on the same day, so I'm very pleased.

We don't agree on political issues. Anyway, we agree on the fact that the United States is making a terrible mistake, first of all, picking on a company. I was on the Motorola Board of Directors for 15 years. One of the first joint ventures you did was probably with Motorola, I suspect. My interest is open information, open science. I come from a world where what we value isn't so much about trade, commerce, and stock values. We value knowledge, and we want to build on the people before, and the only way this works is if people are open at the beginning. Then we can all build on each other, and that's, to me, the priority.

There are other issues, and I'm not denying them, but that's the one I'm focusing on: How does the world collaborate? It's not a competitive world in the early stages of science; it benefits from collaboration.

Tian: Mr. Ren, some people say this is a technical issue, and some believe it is a cultural issue. What do you think? What kind of issues are we facing here?

Ren: I think the most important goal for our society is to create wealth, so that more people can be lifted out of poverty. Social progress requires collaboration for shared success. It's simply impossible for individual

countries to develop on their own in the information world. In the industrial era, transportation problems led to geopolitics and geo-economics, so a country could manufacture sewing machines and tractors entirely on its own. But in the information era, it's impossible for a country to single-handedly make anything. That's why open collaboration worldwide is a must. Only through open collaboration can we meet people's demands, and bring the benefits of new technologies to more people at lower costs.

I believe collaboration is the only way to make social progress. Economic globalization was first proposed in the West. We believe it is a great concept. There definitely have been and will be ups and downs during the process of economic globalization, and we need to take the right approaches to these ups and downs. That means we need to use laws and rules to reconcile and resolve issues, instead of imposing extreme restrictions.

The progress of human civilization is built upon the discoveries and innovations of scientists, the leadership and facilitation of politicians, the products and markets of entrepreneurs, and the joint efforts of all people. That's how we create new wealth. During the Dark Ages, famine was prevalent in Europe. About 40 to 50 years ago, China was very poor, and people suffered from hunger. But now we have an abundance of food. Why

is that? It's not because the natural environment has changed much since then. It is the result of advances in science and technology.

03 Tian: There are companies who are not providing Huawei with components and parts anymore, despite the fact that you had contracts with them. How will you treat the US companies who wish to keep supplying Huawei?

Ren: All of the US companies that we work with are great companies that hold themselves to high standards in terms of business integrity and ethics. Huawei's development over the past 30 years can be attributed in large part to the support and help we have received from leading companies around the world. The current setbacks we are facing are not caused by those US companies, but by politicians who see things differently from the way we see them.

We predicted long ago that we would encounter market competition issues and conflicts when our growth is fast. But we never imagined that the US government would be so committed to attacking Huawei within such a broad scope. The US government is banning US companies from supplying components to us. They are also restricting our participation in

international organizations and our cooperation with universities. That said, these restrictions will not stop Huawei from forging ahead.

We didn't expect that the US government would launch such precise "strikes" against us, with each "strike" hitting our vital parts. Now we have several thousand "holes", and fixing them will take time. We didn't expect such extreme measures, but we did make some preparations. We are like a bullet-riddled Il-2 aircraft during World War II. We prepared to protect our core parts only, like our fuel tank. We didn't prepare to protect non-core parts. In the coming years, our production capacity may decrease, and our sales revenue will be about 30 billion US dollars lower than forecasted. In 2019 and 2020, our annual sales revenue will be about 100 billion US dollars. But maybe in 2021, we will regain our growth momentum and provide even better services to society. In the next two years, we are going to switch from many old product versions to new ones. In such a massive switchover, it will take time to test whether things work properly, so a moderate decline is understandable. But when this step is finished, we'll become stronger.

When we were not as strong in the past, we were determined to work more closely with US companies. As we become stronger, we will work even more closely

with them, and we won't be afraid of encountering more challenges like the ones we are facing now. We are not afraid of using US components or US elements, and we are not afraid of working with US partners.

Companies that are not as strong as Huawei might be very cautious when it comes to using US components or US elements. This will hurt the US economy in one way or another. But Huawei won't be hurt much. We are already strong, and we can withstand whatever is thrown at us.

Tian: Did Mr. Ren tell every Huawei employee about his plan regarding 2021, Madam Chen?

Catherine Chen: He talks about that sometimes, and the numbers may not necessarily be the same every time he speaks about it.

04

Tian: It seems that Mr. Ren gave us a lot of information earlier about the bottom line he is thinking about. What do you think George?

George Gilder: I think it's absolutely important that all these new ventures be founded on a level of a ground state of security on which these innovations can depend and which makes them trustworthy, recognizably trustworthy around the world. Because a

worldwide network or a worldwide Internet of Things or a worldwide 3D virtual reality Internet, smart cities, or all of these various goals will depend on a secure ground state of timestamped factuality.

Tian: We understand that it's security, security, security. But how? That is the issue.

George Gilder: Blockchain, have you heard of it? It's an innovation and is what the new generation of technologists around the world are working on and developing, and I think it should be incorporated in the Huawei plan for the future.

Tian: What about standards? Since we talked about security and since we talked about some specific issues. Mr. Negroponte, what about the issues? From your perspective, starting from earlier days and thinking of what's going to happen today, what about standards? Do we have global standards? And how fast can we build the global standards? Do we want to build a global standard?

Nicholas Negroponte: First of all, I've been doing this for so long that when I was first on the Internet, I knew everybody else on it. That's how long ago it was. And nobody imagined how it would grow. And if they're telling you now, they're being revisionists. It was not in any way imagined to be this dominant. And I

experienced over my life, first as a teenager, Sputnik. It's very interesting because Sputnik caused the United States to do things that it wasn't already doing. So this is your Sputnik moment.

What the United States has done created Huawei's Sputnik. You're going to wake up and do things and there is no going back. I saw it again in the 1980s, with Japan, terrified by Japan. There was a whole period when Japan was this enemy and we were not supposed to collaborate and yet that's sort of attenuated. Standards are important, but not as important as they used to be, partly because you have enough intelligence in the system that you don't have to necessarily have a precise standard that everybody is following, as long as the system can recognize what it is, and says, oh, that's that signal, and adapts itself.

So there is a change, but it's important to collaborate on the basis of knowledge. Because if we start going in other directions separately, it's going to be an enormous shame.

05 Tian: Talking about the basis of knowledge, I really need to ask Mr. Ren. Because right now, Huawei's collaboration with quite a number of American universities and labs has been halted, including some

of those where you originally came from. And that is not going to contribute to the open science we are talking about. But to Mr. Ren, it's also going to have a big impact on where Huawei could be in terms of your capacity for science and technology. How would Huawei address the situation?

Ren: Inventions can be divided into theoretical inventions, engineering inventions, and inventions driven by market demand. China is very strong in engineering inventions, but weak when it comes to theoretical research. We have to diligently learn from the West in this regard. The West took several hundred years to invent theories like calculus. They have contributed greatly to advancing basic theories.

Huawei invests heavily in R&D. We have more than 80,000 engineers. Despite that, we have not made any great inventions. Mobile communications were not invented by Huawei, nor were fiber communications, IP transmission, mobile Internet, airplanes, cars, or horse-drawn carriages. When it comes to inventions, we have made little contributions to humanity. We have focused on improving engineering capabilities.

We are now supporting more than 300 universities and 900 research institutes around the world. In doing so, we hope that we can contribute to theoretical innovation. We will not cut our investment in this area

just because of the attacks on us. We will work harder. Even if the US government does not allow some universities to work with us, there are many others who are willing to do so. It is understandable that a few universities are having concerns about working with us. It is just short-term because they don't know much about us.

We welcome more US politicians to come and visit Huawei themselves. Some of them may think we still live in grass huts and wear long queues – a hairstyle from dynastic China. If they come and look at Huawei's pace of innovation, they will believe that it is worthwhile to make friends with us and that we can be trusted.

Just now, Professor Gilder mentioned building trustworthy networks. Huawei is determined to do that. And it is also a decision included in our business plan. In the next five years, we will invest 100 billion US dollars in reshaping network architecture, so that networks can be simpler, faster, more secure, and more trustworthy. At the very least, we should be able to meet the standards of Europe's GDPR when it comes to privacy protection. Of course, our revenue will need to double. If we face financial difficulties, we may cut our R&D investment, but the amount will still be close to that figure. We need to restructure networks and make more contributions to humanity.

We also need to look at Huawei's contributions to society. Huawei employees are everywhere – in the poorest areas of Africa, in places stricken with malaria, Ebola, or AIDS, and in the wilderness. We don't make much money there. We are there because of the commitment we have for humanity.

Since we have not contributed much to theories, we want to contribute more to serving humanity.

06 Tian: That's a great thing. And having a good market is a good thing, too, I guess. To you, Mr. Gilder, talking about security earlier, Mr. Ren has mentioned that. So there are lots of questions about whether Huawei has backdoors. Mr. Ren, please answer this question as well. Which security is it? Who will guarantee the security? Who are the ones to judge whether one system or another system has security or not?

George Gilder: The question is an objective question – whether a specific telecom system can be tested, whether it is open, whether it can afford to be using the new cryptographic techniques, cryptographic signing of software that can render it inherently trustworthy, because it cannot be changed gratuitously. There are lots of technical remedies for the kind of distrust that arises around this catastrophically insecure Internet

architecture that we find ourselves using today. Just as we have catastrophically broken monetary system, which causes trade wars, we also have a catastrophically broken Internet security system. And I think among all companies in the world, Huawei is probably best situated to solve both these problems and to pursue both these opportunities.

Tian: Is Mr. Gilder having too much hope for Huawei and is he being too optimistic or pessimistic?

Nicholas Negroponte: Well, I hope he's correct. And there's some evidence that he may be, because our President has already said publicly that he would reconsider Huawei if we can make a trade deal. So, clearly, it's not about national security. We don't trade national security. It's about something else. And this trade war has got to end, and that, I believe, will end sooner rather than later. Crossing my fingers.

07

Tian: Mr. Ren, has Huawei installed backdoors into its equipment? Are there any security issues? Please tell our good friends, and the audience joining us online what Huawei's position is regarding this issue.

Ren: First, we need to separate the issues of cyber security and information security. Cyber security relates to the networks connecting our society. We can't ever

allow these networks to break down or malfunction, and this is a security issue. These networks need to connect 6.5 billion people, tens of millions of banks, and hundreds of millions of SMEs and large companies. For a bank transaction to take place on a network that connects 6.5 billion people, the transaction must be able to accurately link the right individuals and transfer the correct amount. This is a cyber security responsibility. Huawei is responsible for providing connections to 3 billion people and providing connections for banks, businesses, and governments. Over the past 30 years, Huawei's networks, spread across 170 countries, have never broken down, proving that our networks are secure.

In terms of information security, we provide pipes and taps, which we refer to as networks and devices, respectively. The pipes don't determine what passes through them, which could be water or oil. Instead, carriers and content providers determine this.

In regard to whether Huawei installs backdoors, we don't have any backdoors at all. We are willing to sign no-backdoor and no-spy agreements with any country. Why haven't we signed any, you might ask? Because some countries have required that all network equipment suppliers sign such an agreement. This raises the bar in these countries and makes things more difficult. Why not just sign an agreement with us first?

Huawei can set an example, and then these countries can use this example to negotiate with other suppliers.

Tian: Which countries are you referring to?

Ren: I've discussed this topic with many state leaders. Once we get an agreement signed, we can set an example, and everyone will see that Huawei is bold enough to enter into such agreements. We can guarantee that we won't install backdoors, and we can then take on further responsibilities.

Whether something is secure or not is relative. The thickness of the atmosphere in the physical world is about 1,000 kilometers, but the information cloud will be much thicker than that. In a cloud that thick, errors are inevitable. For example, if a lightning strikes the wrong place, what can we do? We should investigate accountability, correct the mistake, and impose punishments. Attacking a company from all sides without fair reasons is unacceptable. Countries following the rule of law must act based on laws. How can they make judgments without even holding trials?

As the cloud society continues to develop and the number of portals increases, we will become more prone to making mistakes. If a society cannot tolerate even a single error, it is too conservative. Such a society will lose its drive for progress and creation.

Tian: Ms. Chen, I just asked Mr. Ren which countries he was talking about, but he didn't give a precise answer. I know he has been saying internally that he is a fan of the US. Does he still say that considering the current situation? Things have changed a lot.

Ren: The US is a developed country, but long ago, the US was an undiscovered continent. After the Puritans arrived, they started introducing British laws and regulations. The US gradually became more open and developed into the strongest nation in the world. We have a lot to learn from the US. A few setbacks won't make us suddenly hate the US. The US has a long history, and these recent events only make up a very small part of its history. If we started hating the US forever because of this, we would be pushing ourselves backwards. We must learn from the US. This is the only way that we can remain a leader in the industry.

08 Tian: Mr. Negroponte, what Mr. Ren just said is very interesting. He seems to want to look at history over a long period, rather than focusing on one specific point of time. So what exactly can we learn from history? I mean, you've already also talked about history, whether this is regarding Japan or Sputnik. What can we really learn? They say it's the rule of the jungle anyway.

Nicholas Negroponte: Well, we can learn by looking at various technologies that were invented in the United States and were then taken elsewhere. The US didn't have the industry, commercial skills, courage, or ability to develop them because it was too long-term. I'll give you two examples. One example is flat panel displays. A piece of glass in my laboratory in the early 1970s is the beginning of flat panel displays. The United States couldn't bring it forward. It took too much investment, so it went to Japan and then later to other places. The same thing happened even before that with video tapes. There was a big commotion when video tapes were invented, but we didn't develop the technology. The same thing also happened with telecommunications. Government funding in my lab stopped 20 years ago and interest in the telecommunications development went elsewhere.

It's not the United States. Let's say it's Europe, it's Ericsson, and it's Nokia. It's not really the United States anymore. History has shown that the short-term, usually quarter to quarter, view of American industry precludes some of these big long-term developments. And Huawei looks beyond that and has been able to develop things in 5G and other areas. That couldn't happen with the way we're set up. It didn't lend itself to small entrepreneurship and it doesn't lend itself to big American corporations the way they're currently shaped.

09

Tian: Mr. Gilder, many say, wow, we're already at the very beginning of a technological Cold War. We're going to have to decouple between China and the United States and between China and some of the other countries, technology-wise. Are you as easygoing about the reality as Mr. Ren, or as historical as Mr. Negroponte?

George Gilder: I think Mr. Ren is right to be confident. I mean, he's in a strong position. He has more than 87,000 patents. He has the 80,000 R&D employees. He's focused on the technologies of the future. It's the United States that really will suffer from any effort to decouple itself.

Tian: Are you bashing America right now?

George Gilder: I'm not. I'm an American and I believe we have wonderful entrepreneurial energy, wonderful creativity, and wonderful technology. But it's always thrived on collaboration with other countries. When we were an underdeveloped economy, Ford, Edison, Carnegie – all our great entrepreneurs that established the oil, automobile, and electrical industries – stole from Europe. Everybody said they stole from Europe, that they sent spies into European companies and brought back crucial insights that made Ford automobile possible. What we see here from historic terms is merely the incumbent established technology power of the United States being challenged by an ascendant challenger,

China, and we are trying to beat them back. And that's a terrible, suicidal mistake for the United States to make.

So, I'm being pro-American when I say America has got to deal with Huawei and with the existence of challenges around the world. We are not in the lead in semiconductors anymore. This idea that we have some impregnable lead in semiconductors that we can use to negotiate and force China into compliance with some requirements that we imagined, is wrong. We don't lead in semiconductors. Taiwan leads us in semiconductors, and Apple's new CPU had to be made in Taiwan. 7nm geometries were not feasible at Intel anymore.

I mean, it's just false that the United States is in an impregnable position that it doesn't have to collaborate with China and other countries around the world. This is an illusion from years gone by and we've got to get over it if we're going to accept the challenges of the future and accomplish the goals we have set.

Ren: First, generally speaking, the US still has more advanced science and technology than China. After all, China is still catching up. China has made much progress over the past 40 years since the reform and opening-up, but the US has been developing for one or two hundred years. So the US has a more solid foundation for innovation. Suppose the world is a river, the US is a bit like water at the upper reaches, which will naturally

flow downstream. If the water upstream does not flow down, the lower end of the river will dry up. However, the upper reaches will also dry up without lower reaches. This is similar to our value chain. Downstream market demand is critical for those in the upstream. Therefore, technological decoupling goes against the trends of historical development.

Second, the law of the jungle does not fit into human society. Humans need to collaborate for shared success and various forces need to be balanced. That's why we have adopted a market economy rather than a planned economy. Although the counterbalance between various factors in a market economy will cause some waste, it underpins orderly development of the market. In addition, human society is also governed by laws, regulations, religions, and moral codes. All those factors prevent the world from simply following the law of the jungle. Many countries have also issued anti-monopoly laws to prevent one lion from becoming too strong in order to maintain balanced development.

While Huawei happens to have some leading advantages in 5G, we will not be complacent. We still want to openly collaborate with the rest of the world. So I think technological decoupling between China and the US is in no one's interests. Both sides will suffer.

Tian: So there is a big jungle which has many players

like rabbits and lions. Ms. Chen, it seems like Huawei has figured out a way to survive and thrive after this crisis.

Catherine Chen: I don't like people describing the world using the law of the jungle, either. Everyone knows that tigers and lions are the strongest animals and no one can defeat them. But how have humans achieved what we have today? It is through unity and collaboration. I think that's the law that always holds up well, rather than the law of the jungle. Many people wonder whether Huawei is facing unprecedented pressure and difficulties. Honestly, I don't think this is the biggest problem or challenge we've ever faced during my 25 years with the company. I think the most difficult time was when Mr. Ren founded the company. We didn't have money, technology, or people. I believe Mr. Guo Ping understands this even better as he joined Huawei earlier than me. We had nothing back then, but we managed to develop into what we are today. So I don't think the current challenges and pressures are that a big deal. Once a problem, issue, or challenge appears, Huawei always meets it head-on and works hard to resolve it. That's what we've been doing for the past three decades, and we will continue to do so in the future.

10

Tian: If it's not that challenging, as all of you illustrated, I feel happy as a journalist. But now, there's another thing. We cannot just concentrate our conversation on Huawei and the current specific challenges. But rather, we're going from here, every one of us. Mr. Ren has been very passionate about 5G. That's certainly going to help build the infrastructure in the world to empower communication and many other things. Mr. Gilder has been arguing over the years that artificial intelligence is not going to replace human beings, but human capacity and also the human brain are enormous. Meanwhile, Mr. Negroponte, you have been arguing in many of your speeches and books that biotech is the new digital, as you wrote in the book *Being Digital* back in 1995. You even argued that we can probably eventually eat a pill and learn Chinese, not only through the eyes but from within the body. So, what kind of future do you see?

George Gilder: You didn't really say that.

Nicholas Negroponte: Yes, I said it, but it doesn't mean it's true.

Tian: Let me ask one by one if we can and crossfire is also welcome here on the stage. About what we were talking about, where would you concentrate on a bigger trend? Let's start with someone many call a futurist. Mr. Gilder?

George Gilder: I believe the basic challenge of the world economy today is to address the scandal of money. We, today, see US\$5.1 trillion every 24 hours in currency trading. But this currency trading accomplishes nothing. I believe that the real reason for the trade war is not trade or industrial machinations. It's the collapse of money. This currency trading doesn't even prevent constant hedging of every transaction across the border. It doesn't prevent trade conflicts. It doesn't really accomplish its goal. So I think the great contribution of blockchain is that it allows a new global currency that plays the role that gold played for hundreds of years of the fastest growth of the world economy. And that's really what blockchain provides: not only a new Internet architecture, but also a new global architecture for the world economy.

Tian: You don't think that's virtual wealth only? Like the stock brokers?

George Gilder: It's [money is] not wealth itself. It's the measuring stick of wealth that guides entrepreneurial visions and creativity. You need to have a measuring stick, just as you need to measure the second, the meter, the kilogram, the amp, the mole, the degree Kelvin, all the various measuring sticks that make it possible to make a chip in Taiwan, and incorporate it into a smartphone in Shenzhen, and send it to Cupertino

for marketing and to Israel for amplification. All that is made possible by common measuring sticks. The nanometer is the same in Shenzhen as it is in Timbuktu.

But money, which is a critical measuring stick, is different all around the world. It's being manipulated by national central banks. So we have chaos of money. And that's why the world economy is slowing down now, why trade is no longer growing, and why countries are constantly fragmenting and fighting over valuations. I think this is a big opportunity. I think Huawei can play a key role in surmounting this challenge.

Tian: Mr. Negroponte, of course you disagree with your friend?

Nicholas Negroponte: No, I don't disagree. I don't know enough about that. It's fascinating to listen to. I believe the question was what some of the big future trends are. I think they all surround one aspect of the scientific and technological world that has changed in the past 30 years. And that is, we can make things and design things and build things that are so small and get smaller and smaller. But there's been a crossover point with nature. When I grew up, the natural world and the artificial world were very different. In fact, I was trained as an architect. Good architecture is architecture that fits well with the natural world. But now, the natural world and the artificial world are the same. And they're

the same in the ways that are very surprising. When I founded the media lab, I never imagined that we would have a team like we have today that designs mice. They design new mice! And are the mice real? Or are they artificial? They're manufactured, and they're walking, living mice.

And so there are certain things that you think about. For example, ten years from now, maybe Huawei will ship base stations as seeds that you plant and water. And they'll grow and guess what? They will grow into base stations that are powered by the sun and the leaves. And then all of a sudden you have base stations in the middle of nowhere! 10 years from now, that's perfectly plausible. So, I think the reason why I say biotech is the new digital is more because of synthetic biology and the fact that they're indistinguishable.

Tian: The digital world is combining with the world of biotech.

Nicholas Negroponte: They're very much the same.

11

Tian: Growing from a seed is something we can discuss. Mr. Ren, what about your future? What do you think?

Ren: Professor Negroponte was talking about what

fundamental changes the convergence between DNA and electronics will bring to humanity. I am not in a position to comment because I haven't done any research on that. But I think in the next 20 to 30 years, the biggest driving force for human society will be AI. AI is augmenting human capabilities, but not replacing them. Society is getting more and more complicated, trains are traveling faster and faster, and networks are also becoming more complicated. This is not something that can be handled with individual intelligence.

In the future, some tasks that are certain will be directly done by AI, and the problems will be solved on the edge. Tasks that deal with uncertainties will be first transmitted to the central networks, and then undergo fuzzy processing using AI. AI might get it wrong, or get it right. It's a process of deeper learning to promote human progress.

We should be tolerant towards innovation. If there is something wrong with networks, we can now maintain them remotely. Do we still need people to climb up towers to do maintenance? This will generate high costs. So we need to be tolerant of future-oriented innovation. This is the only way for us to build a great society. AI should not be seen as something negative. AI is an extension of human capability.

As Professor Negroponte just mentioned, the concept

of AI has existed for decades, but it failed to become a reality. Today, we have what it takes to make AI a reality. AI will help create more wealth for humanity, rather than replace humans. How could AI appreciate music? How could AI understand jokes? These will be addressed in the near future. Now AI is mainly used to improve productivity.

Tian: So, the teacher and the student. Mr. Gilder, it seems they are disagreeing to a certain extent with what you just said.

George Gilder: Well, I've been studying connectomes for a while, and for years, I specifically studied the connectome of the Internet. That is, how voluminous all connections are, all across the entire global Internet, and how they are connected to all its memories. And I was often focusing on the point where the connectome of the global Internet would pass a zettabyte. That is, when would all the memories and all the connections take a zettabyte, 10 to the 21 st power, to map.

Recently, I've been studying the connectomes of the human brain. The connectome of one human brain takes an entire zettabyte. In other words, one human brain has as much connectivity as the entire global Internet. Yet the entire global Internet consumes gigawatts, terawatts of energy, while one human brain runs on 12 to 14 watts of energy. So, I believe what

will really determine human progress and prosperity is unleashing the individual human zettabytes running on 12 watts. That's 6 billion you're interconnecting through the Huawei fiber optics and wireless, not creating some super mice out of a pill. Life is not the same at electronics. It manifests electronics but it's a different phenomenon which is not well understood and is not illuminated by facile statements that we're going to be able to read Shakespeare by taking a pill.

Tian: Mr. Negroponte, I think it's a perfect time for you to speak out.

Nicholas Negroponte: Look, whatever is true, in computation and connectivity, I can make more of it. I can make more and more out of it. And some of that can happen naturally. So, a lot of people have worked on really two kinds of, or really two distinct AIs. There's the AI, if you will, that helps to do as well or even better than the human brain. That's the one called the classic AI, the one that the people of the 1960s and 1970s, very deep thinkers, were thinking about. It's not an AI composed of 7.5 billion people, I don't know what you're doing with other 1.5 billion when you're talking about connecting everybody, but when you have 7.5 billion brains connected, you have something times 7.5 billion. That's a different area and a fascinating one. And whatever happens computationally, I just know I can

make more of it. I can't make more of the human brain and that's not going to change that much. So, things will change, George.

When I say you learn French by taking a pill or Chinese, that is part of a very different agenda of how you interact with the human brain. And the breakthrough was the idea of going from the inside instead of the outside. Instead of trying to radiate, what if you went through the bloodstream and what if you access the neurons from that direction? That's pretty interesting. I don't know where French lives. Does it live in a part of your brain? Probably not. But the process to speak French certainly does. Can you put that there? Can you take it away? It doesn't matter whether that is correct or not right now. It's certainly a very exciting way of thinking about it and people will do things and change things as a consequence of taking that kind of step.

12 Tian: To take pills or not is not the question. The question is what we're going to see in the future. Let's talk about the future a little bit more. For example, lifelong learning, Mr. Ren, that's extremely important for everyone no matter what future we're talking about. So for all of you, how does that happen? What is the best tool for this? What is your method for achieving lifelong learning? I'm sure you have had to

learn very fast, particularly recently.

Ren: No matter how fast you are, you cannot be as fast as machines. No matter how long you commit yourself to learning, your life is always limited. AI will be extremely capable of inheriting human civilization in the future. Scientists' ideas and the way they think can be passed on to future generations. For example, Einstein's thinking can still be useful after hundreds or thousands of years. In addition, with super-computing and massive storage, computers can comprehensively extract a number of excellent ways of thinking through machine learning. Calculations can then continuously be performed and be improved through algorithm models. Since AI cannot die in a traditional sense, it can accumulate intelligence over thousands of years, continuously building its strength. That's why I think AI will create enormous opportunities for humanity. What will the opportunities look like? I don't know. But I'm sure it will create great wealth and benefit society.

Today, it's hard to imagine what future society will look like. But I think lifelong learning is an incentive for individuals. Learning at a societal level, however, is a never-ending iteration. During the iteration process, revisions and new models will constantly be made through machine learning and algorithms. Someday, simple methods will be used to understand sophisticated

problems. That is to say, although many people are currently needed to deal with sophisticated problems, in the future such problems may be resolved with just a few people. So the issue of lifelong learning should not be discussed at an individual level, but should be explored at a social level. Lifelong learning should be conducted across borders and disciplines.

People from our generation have this notion of geopolitics. That's because when we were young, we never traveled outside of our county, let alone our country. Only when we grew up did we leave our county. So we have this notion of being tied to one location. But because of the Internet, today, the younger generations are not tied to individual locations, and this way of thinking is dying out among them. They have looked at the world differently since they were very young.

I think future society will be even better. Some people are terrified by the possibility of AI replacing humanity, but this is just something imagined by sci-fi writers. After all, we have laws, religions, ethics, and other measures to counterbalance this. So this kind of phenomena will not happen or be very rare. We think wealth will only increase, rather than decrease.

Some say that Chinese people are getting richer and consuming more fish, which will cause a shortage of natural resources. But if you look at Google maps, you'll

see that the coastal areas of China are full of net cages. That means most of the fish we consume is artificially bred. We aren't actually consuming that many natural resources, and this is a new wealth created by the release of productivity. Surely, I advocate a society of economy instead of luxury. As you know, Norway is a highly developed country. But what impresses me the most is that Norwegians live in small houses and drive small cars. Employees at our field office in Norway cannot afford to buy their own cars. So, when I go to Norway, I take a train to visit our field office. This shows that a wealthy country can also be economical. There is an abundance of wealth, but people can still live in a frugal way. In that way, we can avoid consuming too many resources. On the contrary, we will be more capable of creating resources. So I don't think a war is possible.

Tian: You not just mentioned lifelong learning and you also mentioned how society can continue to improve. Now I have a question for Ms. Chen.

Catherine Chen: Well, I think all three of you are expressing a very long-term view, looking out over the next 30 years and beyond. I will only talk about what I envision for the next three to five years. Technology will lead us to a better life. What I most expect is that Huawei, Nokia, Ericsson, Vodafone, and China Mobile will work together, and deploy 5G as soon as possible.

The other day, my son went to the US to watch some NBA matches. He supports the Warriors and I support the Canada Raptors. So, when a 5G network is deployed, we can watch the basketball together, even if he is in the US and I'm in China.

Tian: It's an interesting world, isn't it? It's a bigger world than many people imagined. Good job.

George Gilder: It's no bigger than Ren's universe in a cup of coffee. I think we get a sense of his visionary horizons when he discourses AI. I don't think any other corporate leader in the world could give such a sophisticated and wide ranging analysis of this absolutely central theme of technological development. And that's why the United States has to come to terms with Huawei. It's a resource for the world. It's not a trivial problem of backdoors and security patches.

Tian: You really sound like quite a fan of Huawei.

George Gilder: Yes.

Tian: Mr. Negroponte?

Nicholas Negroponte: Well your description is certainly poetic among other things, which is very important. I would like to go back to your initial question about lifelong learning, and I would like to just remind people that learning is what you do for yourself and education

is what people do for you. Let me just separate the two. And if you look at the best education in the world, it falls in two very distinct groups. There is the group, which is characterized by Finland, Sweden, and Norway, where students do very well, but there are no tests, shorter hours per day, shorter days per year, and no competition at all. So, the kids do very well. And then, there is the other method. As you connect kids and bring this connectivity to very remote places, thanks to Huawei, it's amazing what kids can do.

I'll bore you with one experiment we did. We went to two villages in Ethiopia that had no electricity. No adult had ever seen a word, a written word. Then we put in the village a number of tablets equal to the number of kids, with no human beings and no instructions. Then we left. But one exception is an adult went the day before and showed another adult how to put the solar panels outdoors instead of indoors. That was it. We could monitor this remotely. Within two hours, the kids found the on-off switch, which is pretty hard because they had never seen on-off switches in their lives. Within a week, they were singing ABC songs. Within two weeks, they were using 50 apps per day for seven hours per day. That's how long the battery lasted. Six months later, they hacked Android. And today they speak, read, and write fluent English. No pill and no teacher. And it's very important that you can do a great deal of something. I

want to advocate that's the way to do with anybody. But it's amazing what kids can do, and we underestimate them all the time.

13 Tian: Finally, you agree with Professor Negroponte on something, Mr. Gilder. OK. But there's one thing I also want to ask you about. You've talked about the potential beauty of a world in which everyone can work together and overcome this current bump, but a lot of people that I have been talking to have real concerns about whether their children's generation is going to enjoy the kind of life you guys have been enjoying over the decades, which is that you see your life going up, getting better; life is getting better all the time. But maybe the next generation, some are concerned, is not going to be as beautiful as that. Mr. Negroponte, you've been working with kids a lot. \$100 laptops for them to go into the digital world. What do you think? It's actually a question of optimism or a little bit of pessimism.

Nicholas Negroponte: Right. In full disclosure, I was born very lucky. My parents were rich, and their parents were rich. Everybody went to college; they went all over the world. I had been to 10 countries by the time I was six years old. I didn't think of that as a privilege. None of my brothers went into business. They all went into

the civil service or academia, and a couple of them are artists. Our measure was not the same measure you're talking about. Very often, we take these measures simply as the measure of economic growth. But after that economic growth, you have a purpose, and you die unhappy if you didn't have a good purpose. You look back on your life and say, "What was that all about?" But some people don't have that question, because they have a purpose and they're bound to have it. But if you're struggling the whole time, it's harder. So, I think that when I hear that young people won't have the same opportunities, I say to myself, well, you know, I don't think that's necessarily true because they do have something we didn't have. It didn't matter if you were rich or poor; there was a belief that you had to work for a certain period of time; and probably hate your work, as a lawyer, as a banker, at a hedge fund. I mean, hedge funds – what an empty life that is! Then at the end, you start doing something with the rest of your life, and something happens. I think young people have learned about how to be more integrated. I see many, many young people who have mixed money and meaning. I think that's the key.

Tian: Mr. Ren, do you think that our future generations will feel that they are always growing and their lives are becoming better, just like what you have experienced in your life?

Ren: What is happiness? We must be clear about this. I think future generations will always be better than the previous ones. We shouldn't be always pessimistic about the kids of today. Maybe they haven't lived through the difficulties we lived through, but they are quick learners and they are quick to absorb new knowledge. Just as professor Negro Ponte said, if poor kids can also receive proper education, then mankind will be more able to generate more wealth and lift itself out of poverty, and the world will be a better place to live. So, I feel very positive about the future, and I believe the future generations will definitely be better than the previous ones. The current generations are definitely better than the generations 5,000 years ago, right? All of today's concerns will be resolved in 2,000 years.

George Gilder: It's a foolish indulgence of rich people to believe the future will be worse than the past. If you look at the history of China over the last 50 years, of course, every generation has had vastly more opportunities than the previous generation. All around the world, equality has increased because of poor people becoming rich everywhere. It's just in America with our climate cranks and weather bores, teeming with catastrophe theories, that we imagine the future will be worse. But if you live in the world and have some sense of history, you see opportunities opening as wide as Huawei's visions.

Tian: Now, let me open the floor. It seems I've been taking advantage of this conversation on the stage so much. But I know there are a lot of people who are smarter than me sitting in the audience and they have more fascinating questions than the ones I just asked. But no pressure, by the way. Let me turn to our audience, which I understand is made up of the media, people coming from think tanks, friends of Huawei and business partners of Huawei, and those interested in the latest developments of technology. If any of you have questions, raise your hand, and the staff will bring you the microphone. I will give equal opportunities, okay?

14

I have two questions, one is for Mr. Ren and one is for Professor Negroponte.

My first question is for Mr. Ren: I've been making videos that talk about Huawei a little bit and try to get the discussion to be more fair, especially with the American public. Will Huawei focus more on the relationship with the American people, or more on the relationship with the American government, or both or neither? And which is the most important?

The next question is for Mr. Negroponte: We know that America has an open capitalist system and we

know China has a capitalist system governed by the government. But now, we are starting to see that America may be turning away technologies that are the best. So, what happens in a situation when the entity starts to shun or turn down the best technologies?

Ren: Well, we focus on communication with both the American people and the American government. No matter whether it is an individual or an organization that makes a wrong decision, it is only for a short period of time in the grand scheme of things. Generally speaking, most of the decisions the US made have been correct. During World War II, the US sacrificed a lot, and in the recent decades, they have contributed significantly to social development and globalization. And the American people work hard, they study hard, and they have contributed a lot of advanced theories and accumulated impressive wealth. This has all been of great help to us. For the time being, I cannot go to the US, but that doesn't mean our future generations also cannot go to the US. Maybe China and the US will share 8G? Till then, it may not be 5G or 6G. It may be 8G, 9G, or 100G. I think eventually we will be able to serve the American people.

Nicholas Negroponte: This G stuff is a little overrated. I think the answer to your question is perhaps best

because whatever is closing off now, we just have to stop that. 27% of MIT students come from Asia, and I don't know the exact number, but I'm willing to guess over 80% of them come from China. If you count the Chinese Americans who are born in the United States, both parents are Chinese, this number goes up to perhaps 25% or 30%.

So, we have enormous numbers. If you look at the media lab, 60% are foreign students. When I mention that, people often say, "Wait a minute, you're training our competition." No, we're elevating the whole world. It's so old fashioned to think if you have something, I don't. You're going to take my thing, and so you have it and I don't. Unfortunately, President Trump thinks that way. He doesn't think in a way that accepts that we can both have it and this can elevate us both. And training foreign students is so incredibly important.

I made a mistake 20 years ago. I thought the Internet would make people more integrated. I thought we would get rid of the importance of countries and would get rid of nationalism. And I look around now and it's gotten worse, not better. So I was wrong.

The only thing I can suggest now is intermarriage. Persuade your kids to marry somebody who is not Chinese and that will help going forward.

Tian: That's a social issue. We're going to discuss that a little bit later.

15

I have a question for Mr. Ren. You mentioned a decrease of 30 billion US dollars in comparison to Huawei's plan. What's your specific plan for the future? We have seen that Huawei's submarine cable business went up for sale. Will Huawei put more businesses up for sale in the future? In the next one or two years, what measures will you take to alleviate the pressure you're under?

Ren: There will not be more spin-offs or businesses for sale. The submarine cable business was actually quite successful. We didn't sell it because we were affected by the recent situation. In fact, we have been planning to sell it for a long time, because it is somewhat irrelevant to our strategic business. There will be no need for other spin-offs.

However, we might shrink our business and then relocate the employees who might be made redundant to our strategic business. This will help our strategic business to grow even better and faster. Huawei will not have massive layoffs, but we have been restructuring our business.

I'll give you an example. More than two years ago,

we restructured our carrier software business, which had up to 20,000 employees. We spent nearly 10 billion US dollars in this business without producing anything compelling. Therefore, we decided to shut the business down. I went to HR and quietly asked them to increase these employees' salaries before relocating them. However, it turned out that they happily went to the frontline even before they got the raise. How have our consumer and cloud businesses grown so fast? I think a lot of credit should go to these people. They brought with them experience and achieved extraordinary things.

It's now been two years since the restructuring, and I recently checked up on the progress of these employees. It wasn't until then that I was told they had moved to strategic business departments before they received their raises. They chose to do something big in their new positions. I think their spirit deserves commendation. The department proposed that they roll out a red carpet for 10,000 employees. They told me the red carpet couldn't accommodate 10,000 people and adjusted the number to 3,000 instead, and I agreed. They made themselves medals and I delivered a speech. These medals were not fancy, but Eric Xu said they were valued a lot by the employees because my speech had given these medals meaning.

We cut such a large department two years ago, but

that hasn't caused any fuss from inside or outside the company. Actually, we started restructuring long ago for many businesses.

16 I am a professor at Harbin Institute of Technology and I used to work at MIT. I have great concerns regarding the research efforts that Huawei proposes for the future, especially now in terms of the disputed moment that Professor Negroponte mentioned. How is Huawei going to address the issue of basic research, which you also mentioned is an important ingredient for the future creation of knowledge? Also, how will you deal with the issues with creativity that exist in China in order to support this basic research effort?

Ren: I think we'll always be willing to work with scientists and universities. We follow the US *Bayh-Dole Act* when working with universities, meaning that when we fund the research of professors or universities, we don't go after their achievements. Academic achievements belong to universities and their professors. We don't usually add our names to their papers. It's okay if certain universities don't work with us right now. There are still many other universities out there. 5G is very much overhyped around the world at the moment. Some people even think that 5G is like an atomic bomb. In fact, the key 5G technology was inspired by a mathematics paper

published by a Turkish professor in 2007.

There are numerous universities around the world, so it is not a big issue if some choose not to work with us. I believe there will always be talented people that we can work with. We will not give up on what we're committed to because of short-term setbacks.

17 I would like to talk about China and innovation. How dependent has China's research system been on global innovation networks over the last decade? Will China still be able to produce cutting-edge innovation, if transfer-border collaboration is substantially reduced?

Ren: Mass innovation seems to be booming in China, but I think most of the innovation activities focus on application, and are based on the outcomes of innovation on the global platform. Without the global platform, I believe China's innovation would experience a huge setback. China must invest more in research into basic theories and work harder to solve issues with basic education, and that will take time.

George Gilder: I just think that China is doing all sorts of innovation and basic research. You know, in collaboration with the professor in Austria Anton Zeilinger, professor Jian-wei Pan, a leading Chinese innovator in cryptographic research, implemented the

first use of quantum entanglement in transmitting certain messages absolutely securely across planetary distances over satellite technology. I mean, there's just all these areas where Chinese are performing both basic research and applied research in many different ways.

So, I think all these beliefs about failure of innovation in China are out of date. There are people talking about what it was like 20 years ago, and I just don't think that's the situation today in China.

Tian: Today we heard the great news coming from Professor Tu Youyou's team. There are new developments in her area because she's a Nobel Prize winner.

18

I have a question to Mr. Ren regarding IPR. We know many US media outlets are saying that Huawei stole a lot of trade secrets and intellectual properties from Western companies in its early years. What's your response to this? Right now, Huawei currently owns more than 80,000 patents. Are you going to use that as a weapon?

Ren: Huawei has been operating in accordance with all relevant ethical standards from its very beginning, even when we were still a small company. It would have been impossible for Huawei to become what it is today if we

had not had strong business ethics. Even though several IPR lawsuits are currently going on between Huawei and US companies, we have faith in the fairness of the US legal system. Accusations regarding Huawei's theft of intellectual property are groundless.

We own a very large patent pool, but we will never use it as a weapon against anyone. However, intellectual property is created through hard work, so it is perfectly reasonable for Huawei and all other industry players to sign cross-licensing agreements and pay patent holders for the use of patents. Nevertheless, we would never use our patents as a weapon to hinder the development of society.

19

Tian: I'd like to collect all these questions and then let our panelists answer them together.

Q: I have a question for Mr. Ren. There's a report today that Huawei is expecting a 40 to 60% drop in the international cell phone sales. I just want to confirm whether that's true. And can you also clarify the status of the US suppliers? Are most US suppliers not supplying you at this point? Or are they continuing to because of the 90-day reprieve? What's the status?

Q: Hello, I have a question for Mr. Ren. We know that Huawei is not just a Chinese company, but also

a global company. You have established business and offices in over 170 countries around the world and the professor from MIT mentioned that many students that you recruit come from Asian countries. What's your plan to attract global talent?

Q: Previously you mentioned that open collaboration is very important. However, facing the global situation where industry cooperation is interrupted, is it possible for technology companies like Huawei to work with other international giants, as well as science and technology forums and alliances, to explore another development path to drive scientific advances?

Ren: For the first question, did Huawei's smartphone sales in the international market drop by 40%? Yes, it dropped by up to 40%, but it is quickly recovering. That rate has now dropped to 20%, so the situation is improving.

For the second question, Huawei advocates open collaboration, and that will never change. But the government-led cooperation you asked about is pretty much dependent on governmental dialogues.

Do we have another development path? Well that has never crossed my mind. We believe in only one path, and we will move forward along this path one step at a time. We won't give up even if we suffer setbacks, and

will continue to forge ahead until we reach the top.

Another question is about how we can attract global talent. We have more than 40,000 local talent from over 170 countries. I don't know the specific numbers in specific countries, but we do have a rich pool of global talent.

George Gilder: I think there's been a lot of talk about the Internet of Things, but what's really critical now is to create an Internet of Facts, an Internet of Trust, and an Internet of Transactions. *My Life After Google* is about how trust can be re-created by using new technical solutions such as blockchain, cryptography, and other advances. Luckily, a whole new generation of technologists are now pioneering these fields. So, many of these political problems tend to dissolve when new technical solutions are presented. And I think Huawei can contribute vitally to the Internet of Trust, which, at the same time, will make it possible for Huawei to sell its products in the United States again.

20 Tian: You've been talking about open science and global connectivity. Everybody, use one sentence only to describe the biggest takeaway from the coffee with Ren today.

Catherine Chen: We mentioned that Huawei has no

backdoors and our products are open, transparent, and trustworthy. But, but, but, this but is more important: But we'll always have our front doors open. We welcome all, including the media, to come and visit us.

George Gilder: I think Huawei is at the epicenter of future technology prospects for the world. How the United States and other countries react to this campaign against Huawei is a kind of Huawei test for people around the world. If they don't pass it, it will signify that the world is taking a very destructive turn. That's demonizing particular companies in the name of vague ideological objections. So, it's the Huawei test and I hope the world meets it.

Nicholas Negroponte: I guess I would end by saying, in going through that test, I would not focus on security and backdoors and whether you're going to interact with the Chinese government, etc. Leave that out. I think you should focus on the 100,000 papers you published, the amount of research, and just make it known. Because I was at a dinner party and I said "Huawei is a great company" and people say "It is? It does?" The world has to know how much you're doing in science and technology.

Ren: The world relies on open collaboration for shared success.

Tian: That's simple but not simple. Thank you so much. And with that, we're wrapping up our first coffee with Ren. We hope there will be many more coffees to come in the future, during which we can talk and interact and certainly be intellectually stimulating one another.

Thank you and goodbye.

Ren Zhengfei's Interview with Le Point

June 18, 2019
Shenzhen, China

01

Etienne Gernelle: Let's start from your childhood, especially your experience in Guizhou. Today, Huawei is a beautiful, modern company. But I want to learn more about your past.

Ren: I grew up in Zhenning County, Guizhou Province, where I lived throughout my elementary school and until the second year of my middle school. This small town's population is mainly made up of minorities. Today, it has become a tourist destination and the customs of the local people are one of the reasons the town attracts so many tourists. But, back in the old days, we had experienced very impoverished conditions there.

Etienne Gernelle: So you suffered when you were a child?

Ren: Of course, we lived in poverty. But we were very happy then, because we didn't know that French bread was delicious. I never left this small town until I grew up. The area in which my entire life took place wasn't more than 15 kilometers in diameter. We had no comparisons with the outside world, and we didn't have any idea of what happiness should be, so we were quite happy then.

After the second year of my middle school, my father was transferred to Duyun, a central city in another area that mainly had a minority population. I lived there from the third year of middle school to the third year of

high school. In my eyes, Duyun was a very modern city, as it had a two-story building back then. Some older girls from my neighborhood took us to a local small department store, which was when we first saw a two-story building. We felt that it was amazing. Those girls knew more than us and taunted us for our lack of vision. How could we take Duyun as a big city? It was just a little bigger than a small town. After my graduation, I went to college and left Guizhou. I've never lived or worked there since.

Guillaume Grallet: Were there times when you didn't have enough to eat?

Ren: You should ask: Were there times when I had enough to eat? At that time, it was very normal for people not to have enough to eat. We were often starving, and it was rare for us to have a full stomach.

02 Etienne Gernelle: Did you have any idea that you would be in the middle of a geopolitical war after so many years?

Ren: Definitely not. Over all these years, we climbed upstairs step by step, without knowing what the second floor was going to look like. For this reason, I hope the Chinese education can start reforming, so that children in rural areas can envision what the second floor looks

like and then climb toward this floor, step by step. We didn't have well-known mentors to guide us. We didn't have valuable resources to help us. We just kept climbing upstairs until we reached the second floor and were able to see the grand view ourselves. Nowadays, the Internet has helped greatly broaden the horizons of children in rural areas. Looking back on my younger days, children had limited horizons.

03 **Guillaume Grallet: Many are interested in your military experience. What was your job in the military?**

Ren: I served as an engineer in the military. The first project I joined was in Liaoyang, Northeast China, working to build a synthetic fiber factory that introduced technology from two French companies – Technip and Speichim. It was a quite large and modernized synthetic fiber factory in China then, with a high level of automation. See, this is my photo with a French engineer.

04 **Guillaume Grallet: Your daughter is still in Canada. How is this case impacting you personally and how is it impacting Huawei?**

Ren: Meng Wanzhou has not committed any crime.

Canada's detainment of her is inappropriate. But we believe that Canada is a country ruled by law. If we present evidence and clarify the case, she will be released. We will wait patiently and go through the legal proceedings.

05

Etienne Gernelle: The whole issue was caused by the fears of certain European countries and the US over the expansion of China. Do you think China is seeking expansion?

Ren: I don't think China has ever sought expansion. China had remained closed-off for several thousand years. It is now reforming and opening up with the main goal of bringing in what's best from other countries. China is going global mainly in terms of commerce and trade, rather than in terms of political influence, and isn't seeking to spread its ideology around the world.

Etienne Gernelle: The ships of the Chinese explorer Zheng He were three times larger than those used by Christopher Columbus. Due to domestic political intervention, Zheng had to turn back halfway during his voyage. As China opens its door and goes out today, will it turn back halfway just like Zheng He?

Ren: The story of Zheng He is quite interesting, but the purposes of Zheng He and Christopher Columbus were

not the same. At that time, China assumed itself to be the world's most powerful nation. Zheng visited many countries along the way, bringing them many gifts. Commerce wasn't his goal. Unlike Zheng, Columbus traveled across the Atlantic Ocean in search of treasure like gold and spices. Zheng didn't have a clear goal as a driving force, so he stopped halfway. Nowadays, China has clear goals for its reform and opening-up, which are to achieve economic prosperity and integrate more into the rest of the world. So China's reform and opening-up will not stop halfway.

Columbus's goal was clear: to search for treasure. This was his ongoing driving force, and he ultimately did find treasure. About 3.5 million ships sank during their trips between Europe and Asia. That was kind of economic globalization, which started several hundred years ago. Europeans hoping to find treasure and expand commerce have spread their languages – English, French, Portuguese, and Spanish – to almost all corners of the earth. These people have also spread their culture, philosophies, and industrialization throughout the world. Also, many missionaries have traveled all over the world to preach their religions, so there are Christians and Catholics everywhere. They have done this in hopes that the locals would identify with their ideology.

I'm deeply moved by the dedicated spirit of those

European businesspersons. I also have great respect for European missionaries because they built churches in Africa's primitive forests and the Sahara Desert. Numerous missionaries crossed the oceans on small, shabby ships. When the ships finally arrived on the African coast, only several out of 100 missionaries survived. The death toll was even higher during their journey through forests. When they finally arrived at a local village, they stayed there, built a small church, and began preaching. They would never go back to their home countries because the journey back through the forest and across the ocean could mean death. If it weren't for the efforts of the missionaries spreading their culture in Africa over the past centuries, languages like English, French, and Portuguese wouldn't have been widely used to benefit this continent. Even now, developing a market in Africa is quite challenging. Yet when European businesspersons explored global markets and European missionaries carried out their missions back then, they faced even more difficulties than their successors do today.

I once visited a very remote village in China. It's called Pu'er Village, and it belongs to the Lahu ethnic minority group. About 100 to 200 years ago, missionaries brought a guitar to this village. This reshaped the local culture and turned the locals into music fans. I shot this video of the village last April. The missionaries have advanced the

local culture and lifted this underdeveloped village to a new level. I can send this video to you if you want.

Etienne Gernelle: This is great. Missionaries brought a guitar to this place, while Chinese people are bringing 5G to the world.

Ren: It is what will happen next. Then, musicians all over the world can play the same song at the same time through ultra-low latency 5G networks.

06 **Guillaume Grallet: Huawei is an amazing company, which has grown so rapidly in such a short time. It has a decentralized authority system but is still based on collective decision-making. If I may ask, what gets you out of bed in the morning?**

Ren: I want breakfast so I can't sleep any more. We adopt a system of delegating authority level by level but with centralized oversight. It gives people who can hear the "gunfire" the authority to call for resources. We also account for the costs of these resources.

07 **Etienne Gernelle: The West is now scared of China. You said China has never sought expansion, and this has been proved true in history. Do you understand the anxiety when the West is discussing China?**

Ren: The US is exaggerating the geopolitical influence of China. Such exaggeration, coupled with the fact that many Westerners have never come to China, has resulted in misunderstandings. China isn't capable of deploying warships anywhere around the world like the US does. Personally, I think China is building a defense system. China is scared of the US, not Europe.

Etienne Gernelle: Why do you think China is scared of the US?

Ren: The US wants to rule the world, whereas European countries maintain political diversity and aren't aggressive. European countries are keen on making more money while Chinese people want to buy more luxury goods from Europe. We Chinese welcome European companies to make money in our country; otherwise we have to fly to Paris to go shopping. China has been lowering tariffs on luxury goods, which is a sign of welcome for European goods. China and Europe complement each other economically. China needs Europe and vice versa.

Thanks to China's "Belt and Road" initiative, European products can come to China, and China can export products to Europe. If we run out of fuel halfway, we can refuel in the Middle East or Central Asia, which are our energy hubs. As a result, an economic block will form to connect Europe, the Middle East, Central Asia, and the Far East. If China builds a free trade zone with Japan

and South Korea, then the economic block will be much larger than the US in terms of GDP. When this happens, the US will find it hard to rule the world, and that's why they don't want to see countries in this block working together.

08

Guillaume Grallet: You mentioned at the meeting yesterday that Huawei is ready to sign "no-backdoor, no-spy" agreements with other countries. Is Huawei ready to sign such an agreement with France?

Ren: Sure, anytime.

Guillaume Grallet: Have you ever met President Trump before?

Ren: Why should I meet him? I would like to meet President Macron.

Etienne Gernelle: The Chinese government has issued the *National Intelligence Law*, which requires companies to cooperate in national intelligence work. Considering this law, how can you sign such an agreement with France?

Ren: We can try [if you don't believe it's possible]. We can sign such an agreement with French companies, and we can also ask the Chinese government to sign such an agreement with the French government.

09 **Guillaume Grallet: Can you describe your own or Huawei's relations with the Chinese government? Some think that Huawei has developed so rapidly because of support from the Chinese government.**

Ren: We are subject to Chinese laws in China and pay taxes to the Chinese government in compliance with the law. As a company, we make independent business decisions. We haven't received even a penny of capital from the Chinese government. Our annual reports were audited by KPMG. Here is our *2018 Annual Report*.

10 **Etienne Gernelle: Apart from capital, if the central government requested you to submit the information you have obtained from your routers or network equipment, how could you decline such a request?**

Ren: First, we are always responsible for our customers. Second, the Chinese government has never asked us to do that.

We only sell customers bare equipment, like water pipes and taps. Device products are like taps and connectivity equipment is like water pipes. The stuff flowing through them, whether water or oil, is decided by information systems. The systems are controlled by carriers themselves, not us. So we have no access to data, and we promise we have never installed backdoors.

I hope you can interview US companies and ask them to sign the same "no-spy" agreements with the French government as Huawei.

Etienne Gernelle: You don't think Google or Facebook can make that promise?

Ren: I don't know.

Etienne Gernelle: How about Cisco?

Ren: I have no idea either.

11 **Guillaume Grallet: Have you ever wanted to access customer or user information for business purposes?**

Ren: Why would I do that?

Guillaume Grallet: Because information is as important as oil in the 21st century.

Ren: Oil is of no use to us. What we need is petroleum, but we can buy that from gas stations. Similarly, customer information is of no use to us. What we find valuable is the information that is made public on the Internet and across society.

12 **Guillaume Grallet: What is the key to Huawei's success and what is the biggest difficulty you have faced?**

Ren: The key to Huawei's success is our dedication to creating value for customers. That's why our customers trust us. Even in such bad circumstances as we are seeing today, our customers are still buying 5G equipment from us. This is an example of customer trust in Huawei. The US is the most powerful country in the world. Yet, despite its harsh attacks on Huawei, customers are still buying products from us. This is the result of our years of commitment to customers and creating value for them.

What I worry about most is that we are too successful and our employees may become too complacent to take hardship positions or go to hardship regions. Now, President Trump has energized us and helped remove this complacency from our employees.

13

Guillaume Grallet: Can you tell us about your Hongmeng OS?

Ren: We have thousands of printed circuit boards (PCBs) and each one must be supported by an operating system (OS). Huawei's Hongmeng OS ensures a fixed latency. The end-to-end latency is 5 milliseconds or less, with the possibility of being reduced to sub-milliseconds. With such a low latency, the Hongmeng OS is useful for IoT-enabled automated production. Take autonomous

driving cars as an example. The gears within a car rotate with a latency of a few milliseconds. If the latency is not fixed, the gears can miss each other and will be unable to work together properly. The purpose of our OS is to enable a world where everything is connected and intelligent.

Etienne Gernelle: Does this mean that the Hongmeng OS will be faster than Android or iOS once it is released?

Ren: We haven't done a comparison yet. It's likely.

Etienne Gernelle: Is this a business argument?

Ren: It's a technical argument rather than a business one. Compared with Apple's iOS and Google's Android, our weakness is that we have no ecosystem around our OS. It's just a technical system that operates telecommunications networks.

Etienne Gernelle: There are two parts to the US-Huawei issue. The first is about business. The US government wants to stop Huawei from exporting its technology and equipment to their country. The second part is about suppliers. It's about European and American suppliers selling semiconductors to Huawei. If both parts of this issue went wrong, which one would have a greater impact?

Ren: First, the Hongmeng OS is not designed for phones

as everyone thinks. We didn't develop the OS to replace Google's OS. If Google does not open its high-end OS to Huawei, will we start building an ecosystem around Hongmeng? We don't have a clear plan yet.

Etienne Gernelle: Do you mean Plan B?

Ren: No. The operating system was essential for networks to run properly. It was originally designed for telecommunications networks.

Second, if the US or some other countries choose not to buy our products, we won't feel much of an impact. Over the past 30 years, many customers have chosen not to buy our products. After the huge amount of publicity Mr. Trump has given us, there are actually more customers buying our products. That's because this publicity has had a huge influence. Our own publicity might not work so well, because some customers might not believe what we say. However, when Trump says we are good, our customers believe this must be true.

If some countries choose not to sell components to us, both sides stand to lose. Our sales might shrink, but so will theirs. Since Huawei is not a public company, we won't be greatly affected if our business results suffer a little. But if their companies release disappointing financial statements in July, their stock prices will fall. So both sides will be affected.

14 Etienne Gernelle: Will Huawei consider forging alliances with some European semiconductor companies, because you mentioned the "Belt and Road" initiative? Is it a feasible plan?

Ren: Definitely. As you can see, we are purchasing more components from STMicroelectronics.

Etienne Gernelle: If the friction with the US continues, will you forge alliances with some European companies?

Ren: Yes. We will buy more products from European companies.

15 Guillaume Grallet: My uncle wants to buy a Huawei phone. What suggestion do you think I should give him? Should I tell him to buy one right now or wait and see how the US sanctions play out?

Ren: There's no need to wait. In terms of photography, Huawei's phones are the best in the world and we have many other exclusive functions to offer.

16 Guillaume Grallet: As you mentioned Huawei wants to build an ecosystem. How long will it take to build such an ecosystem?

Ren: It will take many years.

Guillaume Grallet: China has many powerful software companies, Huawei can also forge alliances with them. To be frank, do you worry that Huawei's position will be weakened?

Ren: I think our company may fall a little bit from the top in the short term. But when our center of gravity becomes lower, we will be able to stand more firmly. When we climb the mountain again, we might reach an even higher point with more strengths than before.

17 **Guillaume Grallet:** If Orange and Bouygues sign 5G contracts with Huawei, will you have any problem with equipment supply?

Ren: Of course there won't be any problems with supply. Besides, our 5G equipment is the best in the world. No other companies will be able to catch up within two to three years. Supply won't be a problem. Our production lines are working flat out these days.

18 **Etienne Gernelle:** Some people might think that European carriers are not rushing to roll out 5G. It seems that the only profitable 5G application is autonomous driving cars. Other applications seem to

be less profitable. Is this true?

Ren: I don't think so. Why did Europe develop earlier than China? It is because Europe developed its rail and maritime transportation systems centuries ago, while China was still mainly relying on horse-drawn carriages for transportation. This was slower than trains and could carry far less than ships. So European countries were among the first to develop their industry. When information transmission speeds increase, we will see incredible economic growth. 5G is at least 10 times faster than 4G, and faster speeds will drive rapid economic and cultural development.

Etienne Gernelle: This seems like more of an argument that concerns governments. Carriers invest their own money, but they will not be able to see returns right away.

Ren: That's not true. If carriers charge the same rates as they do with 4G when they switch to 5G, their profitability will increase significantly.

Etienne Gernelle: Why is that?

Ren: The cost per bit of 5G is one-tenth that of 4G, as is energy consumption per bit. While consuming the same amount of energy, 5G is 10,000 times faster than 2G. Advanced products should not be costly and should provide greater value. When 5G becomes widely used,

you will probably find that the US is falling behind in this area.

19

Guillaume Grallet: During my visit to Huawei's campus at Dongguan's Songshan Lake, I found you really appreciate European architecture. Do you think Europe should speak as one voice in regards to telecommunications?

Ren: Let me start by saying that the buildings on our Songshan Lake campus were designed by a renowned Japanese architect. He got his bachelor's, master's, and PhD in the US, yet his English is not that good. But he's a genius. He's great at drawing and designed our entire campus at Songshan Lake. That's how the campus came to look the way it does today; it wasn't something we planned ourselves.

20

Etienne Gernelle: Former US Secretary of State Henry Kissinger asked a famous question, "Who do I call if I want to speak to Europe?" Who do you think can speak on behalf of Europe: Emmanuel Macron, Angela Merkel, or someone else?

Ren: I don't think there's anyone who should speak on behalf of Europe. Every country has its own interests and

thinks from its own perspective. The EU just needs to strike a balance between all of its member states.

It makes perfect sense to locate the headquarters of the EU in Belgium. If the EU had been headquartered in Paris, then France would have come to represent Europe. If it had been headquartered in Berlin, then Germany would.

All European countries are seeking their own economic development rather than trying to dominate the world. Therefore, I believe Europe is a very valuable partner.

21 **Guillaume Grallet: You just said Europe has very advanced rail and maritime transportation systems, but many people say Europe has lagged behind in these areas.**

Ren: What I was saying was why Europe was able to gain global prominence more than 300 years ago. I wasn't saying that Europe has an advanced rail system today. Back then, Europe gained global prominence because of its advanced rail and maritime transportation systems, while China was backward because we still used horse-drawn carriages for transportation.

Guillaume Grallet: An AI researcher said Europe has

been erased from the technological landscape. What's your view on this?

Ren: I don't agree with this. Europe was the birthplace of the Industrial Revolution and has the "pearls" necessary to make a difference. It just needs a string to put those pearls together and make them into necklaces. Africa doesn't yet have these same pearls needed to make such necklaces; their pearls are in mineral resources. What I mean is that Europe has a very strong foundation in technology. Mathematics is the foundation of artificial intelligence, and the world's top two countries for mathematics are France and Russia.

Guillaume Grallet: France has a wealth of researchers, but no French companies have become giants over the past 40 years, like Huawei, Google, and Alibaba have. What's your view on this?

Ren: The pearls are still there, but they can't become necklaces by themselves. This is where entrepreneurs and the government come in to play. We use software from Dassault Systèmes in our production systems. Europe is still great. You can visit our production lines. After returning to France, you can interview Dassault Systèmes and ask them about their successful collaboration with Huawei.

But I do believe there is one thing that needs

improvement in the business environment in France: Workers are being given too much protection. As a result, many entrepreneurs don't dare to hire anyone. That's why it's difficult to build large companies that can go global.

22 Etienne Gernelle: Is the conflict between Huawei and President Trump about technology or about business?

Ren: I don't know what's on President Trump's mind. I assume the conflict is mostly political. The US doesn't possess many communications technologies like 5G and optical switching. So there is no competition between Huawei and the US in terms of technology. In addition, no US companies sell telecom equipment similar to that provided by Huawei, which means there is no competition in products. We really have no idea why the US government is targeting Huawei. Nevertheless, what the US has done could help Ericsson and Nokia, so that means they are essentially helping Europe.

We are happy about that. Huawei's ideal is to serve humanity, but we don't necessarily have to do it ourselves. This ideal can also be realized if humanity is served by Ericsson and Nokia.

23 **Guillaume Gallet: None of Huawei's major competitors, like Ericsson, Nokia, and Samsung, are US companies. What mistakes have Lucent and Nortel made over the past 15 years?**

Ren: I don't know what mistakes they made, but I do know we have made a lot of mistakes ourselves. I am actually criticized every day. Our Blue Team has even published an article online listing the 10 mistakes that I have made. We are constantly working to correct our mistakes.

We are glad that Ericsson and Nokia are able to serve humanity along with Huawei in the 5G era. That means countries that exclude Huawei will still be able to use 5G. Like the appreciation I have shown to Apple, I also appreciate Ericsson and Nokia. Technically speaking, Ericsson and Nokia are our teachers. Switches were developed by Ericsson more than 100 years ago. Nokia was originally engaged in rubber and wood products, and produced the world's best mobile phones in the 20th century. They are both our teachers, and we respect them.

24 **Etienne Gernelle: There are several black swans in the lake outside. Is this because you predicted that Trump would cause trouble to you?**

Ren: I really don't like those black swans, and they are not kept by me. They always eat the flowers and grass on the lakeside, and destroy our garden, but I want those plants to flourish. I want the swans to eat the fish in the lake, but they always eat grass.

Etienne Gernelle: There is a book about black swans that was published before the financial crisis in 2007.

Ren: Yes, that's why some people put the black swans in the lake. The swans even lay eggs and have cygnets, and we cannot get rid of them. If I find out who put those swans in the lake, I'll ask them to feed the swans with vegetables after lunch every day, so that the swans will stop eating our flowers and grass.

25

Etienne Gernelle: An economist once wrote a book, saying that China had been the world's largest economy until the early 19th century. Do you think the current rapid growth of the Chinese economy is only a return to its normal state?

Ren: Over the past three to four decades, China has made huge progress. However, we still need to improve the quality of our development in order to make more contributions to humanity. In this regard, we still have a lot to do, and European countries, Japan, and the US are still ahead of us. It's true that China has a huge GDP in

total, but much of this is generated from low and mid-end goods and China's per-capita GDP is still low.

I know that you've visited Guizhou. You must have seen that people in many remote places there are still very poor. The central government has been emphasizing that we must lift more people out of poverty. Governments at all levels have been striving to facilitate development and alleviate poverty. Helping people rise out of poverty is the only way to make them feel reassured and live and work at ease. When people can get richer, they will focus on work and development, and will not bother engaging in the color revolution that the US dreams of.

You may not have been to Tibet. I think Tibet has better traffic conditions than Shenzhen. It has great infrastructure, and its economy and people's lives have significantly improved. Under such circumstances, I do not believe there will be chaos. The Chinese government has put a lot of efforts into solving poverty problems in this country. That is the right approach. On the contrary, the US hasn't properly dealt with this issue. They used to relate poverty to race, thinking "White people were rich and black people were poor." But today, this is no longer the case. Many of the poor population in the US are now white. With the current trade war, the tariffs have actually increased the costs of daily consumer goods in

the US, putting heavier burdens on the American people.

We all know that China's exports are already at the lowest possible prices. If these prices were further reduced, many companies would go bankrupt. Therefore, the prices didn't change after the US imposed tariffs. As a result, it is the American people that pay for the tariffs. If the US government cannot reduce poverty among the American people, there will be chaos. In contrast, it is absolutely correct that the Chinese government is determined to eliminate poverty.

26

Guillaume Grallet: I've noticed that Huawei has adopted a unique governance system with the separation of powers. Which do you think can get people out of poverty: the socialist system or the capitalist system?

Ren: I think Deng Xiaoping designed the foundation of China's system when he adopted the reform and opening-up policy, and that is "socialism with a market economy". Socialism emphasizes the concept of fairness, which was mistakenly understood as equalitarianism in China in the past. In fact, fairness in a socialist society means more pay for more work. In other words, people who contribute more should receive more. For example, suppose you and I are carrying bags at the dock, and

you can carry three bags every time as you are tall and strong, while I can only carry one because I'm old. In this scenario, your income should be three times as much as mine. But however strong you are, you can never carry five bags at once. Physical differences between people are not without limits. However, in a capitalist system, there are no limits for income gaps. You may have 10 billion US dollars while I only have 100,000. If our profit margins are both 10%, you will earn a profit of 1 billion US dollars, while I can only earn 10,000. So huge wealth gaps are created due to capital leverages, rather than differences in labor.

Deng Xiaoping thought that the basic principle of China's socialist society should be more rewards for more work, but we need to take the path of a market economy to achieve that. A market economy will surely have capital leverages, so China must ensure checks and balances between capital and labor. Who should be responsible for this? The government. They should make reforms to maintain the balance. When China started its reforms, its economic foundation was extremely poor. What was the first thing to be changed? It was the value distribution system. You could try to imagine how many conflicts and struggles would explode into life when you attempted to change the value distribution system for such a large population. Therefore, China needed a strong government to take control, preventing

the country from falling into chaos. So Deng Xiaoping proposed the Four Cardinal Principles, insisting on reform, opening-up, and development while preventing chaos. Only a strong government could do that and control the direction and pace of reforms. When governments at lower levels were too slow or came to impasses in reforms, Deng Xiaoping said they could "be braver and walk faster". When reforms were too fast and conflicts arose, he just guided them to go more slowly while following the Four Principles. That is how China has transformed over the last 30 years.

Where does the national capital come from? It's from the people. How can the government give the money back to the people? This can be done by building infrastructure like high-speed railways and highways. Can the government earn money by building high-speed railways in Tibet? You can think about that. Capitalists wouldn't invest in such projects. China is building highways, high-speed railways, and other infrastructure on a large scale and at a high speed. This is being driven by the government and it's the people who benefit. These efforts have helped to balance the conflicts between different strata. Therefore, China did not experience the color revolution that the US dreamed of.

27 Etienne Gernelle: I think politics plays an important role in Huawei's business. When I came here via Hong Kong, I saw the demonstrations. The world is gradually splitting. Trump doesn't believe in China or China's system. At the same time, the Chinese people don't believe in Western media. Will this lead to a divided world?

Ren: I don't engage in politics, so I don't know. You can ask me technical questions instead.

28 Guillaume Grallet: Just now you mentioned education. What do you think children should learn? General knowledge or mathematics and IT?

Ren: There are now several systems of education. In Northern Europe, there are almost no tests, so children can grow up with joy. Children in these countries can determine their development direction when they find out what they like. Although the Nordic countries are relatively small, many big companies, including Ericsson, Nokia, ABB, and Equinor ASA are based there. This is proof that their education system is successful. China is such a large country that it is really difficult to determine who is talented. Therefore, China has set different levels of tests. These tests can turn the children into "little nerds" and they lose their creativity. But a small number

of those who make it through are geniuses.

Etienne Gernelle: What do you recommend parents teach their children? Something like programming or mathematics?

Ren: I think the most important thing is to give full play to a child's talents. We don't know in which areas children will be able to develop the best. So children should discover their own talents and set out on the right path early. In this way, children can grow effectively. Unfortunately, some parents don't know their children at all. To give you an example, this lady's husband majored in electronics, but it wasn't until he turned 50 that he realized he was a talented artist. You may go upstairs later and take a look at a painting he donated to the company. It is a copy of Napoleon's coronation at the Louvre. It was painted shortly after he started to learn painting. If he could have leveraged this talent from an early age, he might have grown into a famous painter. Therefore, children must find their best direction of growth, and move in that direction to avoid wasting their energy.

Etienne Gernelle: It might have been quite late when you discovered your talents. You majored in architecture right? But you became successful anyway.

Ren: At that time, I lived in a remote, mountainous

region. I had no idea what the wider world looked like, and no one gave me any advice on it. So I didn't have the chance to discover my talents when I was young. Now that the Internet is so developed, children have much broader horizons, and they should quickly discover their talents. Therefore, the information society has been a great catalyst for the progress of humanity.

Guillaume Grallet: Are there any writers or philosophers whose books really inspired you?

Ren: There are so many. Socrates, Plato, Confucius, Mencius, and many French philosophers.

Guillaume Grallet: Are there any inventors, scientists, or creators that you particularly admire?

Ren: I admire all of them. Their inventions, big or small, have all represented great contributions to humanity. We cannot use a scale to measure people's contribution to society. Just like rescue and disaster relief, some people donate a lot of money, while others may donate just one dollar. It doesn't mean that those who have donated more are the greatest. Otherwise, the world would have never given Mother Teresa such amazing recognition. Therefore, when we evaluate a scientist, we should not use a scale to weigh their value. As long as a person has made a contribution to this society, then they are great. It is true that society will not always give you a medal.

You could simply make one for yourself by engraving something on a radish, and then hold it to your chest. As long as you are happy, then that's enough. You have not only made a contribution to humanity, but also baptized your soul.

29 Etienne Gernelle: There are now numerous emerging technologies, such as 5G, AI, and quantum computing. Which technology interests you the most?

Ren: First, it depends on how these technologies can create value for the future of humanity. Second, Huawei has limited capabilities and cannot be interested in everything.

30 Etienne Gernelle: Huawei is playing a very important role in 5G, and there is no US rival to compete with Huawei in this regard. Do you think this moment is similar to when the US found Russia was ahead of them?

Ren: Actually, we were aware of this issue years ago. A balanced world needs three pillars. If there were only China and Europe, the world would be unbalanced. In earlier years, we considered selling our business to Motorola. But when their new chairman took office,

he dismissed this acquisition. Later on, we had plans to acquire Motorola, but this acquisition was rejected by the US government. Our aim was to create balance with three pillars. Now, there are only two pillars, which is unstable. This conflict will appear sooner or later.

Etienne Gernelle: What are the two pillars you just mentioned?

Ren: China and Europe

Etienne Gernelle: What do you mean by pillars?

Ren: Here, pillars means industries. This world needs to be shared. If the US does not take any share in this industry, it leads to imbalance, and the world becomes unstable.

Etienne Gernelle: Why does the US want to prevent the spread of Huawei's technology? Do they want to buy some time to develop their own new technology?

Ren: The wheel of time always runs forward. No one can stop it.

31

Etienne Gernelle: It has been a tradition in Silicon Valley that a new king takes the stage after each transformation. IBM, Microsoft, Google, and Facebook have all been the king. When a new king comes to

power, the old king steps down. Do you think Huawei has become the new king of the world for the first time?

Ren: I'm not a lion. I'm just a rabbit trying to find a corner to hide in. I can't find a corner right now, and I don't know what to do.

Etienne Gernelle: You don't look like a rabbit.

Ren: But I am much less like a lion.

32 **Guillaume Grallet:** Huawei was among the first companies to enter the African market. What do you think about future developments in this continent?

Ren: Africa and Latin America are the two most recently developed regions. Most natural resources in Europe and Asia have already been developed, but natural resources in Africa are yet to be developed. I think we will see a new wave of development in Africa.

33 **Guillaume Grallet:** Do you have any particular interest for France? Are there any French architects that you particularly like?

Ren: The building that houses our Beijing Executive Briefing Center was designed by Jean-Marie Charpentier,

a French architect. This is the last building he designed.

Guillaume Grallet: You're a frequent visitor to France. Do you like French wine?

Ren: I'm not much for wine, but I do like mathematics in France. Ecole Normale Superieure is a top university for mathematics. In the future, we will continue to increase our investment in France.

Guillaume Grallet: In what fields will you invest?

Ren: Our investments will mainly focus on R&D.

Guillaume Grallet: Huawei now has five research centers in France, right?

Ren: We will have more and larger research centers there in the future.

Guillaume Grallet: Your France Rep Office now has about 1,000 employees. What will be your total workforce in France?

Ren: I'm not sure about the figure, but I am sure about one thing: The number of scientists we have will increase significantly. As we gradually move toward AI-enabled production, we will not see a significant increase in our workforce, but we will greatly increase our exploration into future new technologies.

34

Guillaume Grallet: Some entrepreneurs in Silicon Valley say that their ambition is to change the world, but you always say that your ambition is to make your company survive. Do you think they overstate their ambition or you are being too humble?

Ren: If we were just 25 years old and we sat down for a cup of coffee, I would be as ambitious as them. Just imagine a guy was sketching a model on a napkin, and several others were talking about the structure. They were talking about starting their own business. This company later became known as Intel. Silicon Valley encourages restlessness, which fits well with young people. If they don't have passion or ambition, they wouldn't be able to succeed. I think I did the same when I was young. Now, I'm an old man. I have encountered many setbacks, and I now talk more sensibly.

Etienne Gernelle: Did you think about all this when you were back in Guizhou?

Ren: No. How could I have thought about this back then? When I was in Guizhou, all I thought about was getting out of my parents' control and studying in another province. When I heard that I could go to another province to study, I was so excited because I had never been out of our county before. I don't think it's a bad thing for young people to be restless. They could source energy from each other. There could be one

to ignite the fire, and the one who ignites the fire can hire the others. I think the restless spirit in Silicon Valley should be advocated.

35 **Guillaume Grallet: You just said that in the era of AI, there may be less employment. Do you think everyone will still be able to get jobs in 10 to 20 years?**

Ren: Let's take a look at an example. When we designed base stations in Africa in the past, an engineer could design at most 4 base stations a day. However, with the help of AI, an engineer is now able to design 1,200 base stations a day. I once asked an engineer why the number was specifically 1,200. He said, "The contract contains only 1,200 base stations in total." This increase in productivity will help improve the quality of our lives.

With the help of AI, less people will be needed to create wealth. At the same time, more wealth will be created to support more people. If someone considers working to be necessary, they would study hard and then get a job. This will also promote the development of society. Income differences between people who work and who don't work will also be significant. If you visit our production lines, you will find that there are barely any workers.

Guillaume Grallet: I think everybody would still like

to work. But how could everyone get a job? Lifelong learning or minimum salary?

Ren: The fears we have about AI may be similar to the fears people had about textile machines in the past. When textile machines were first introduced, some people even tried to destroy them. We are facing a similar situation now. How can we adapt ourselves to new technologies in the future? I don't know. It's still an unsolved issue.

Guillaume Grallet: Could a good solution be to impose some restrictions on AI applications?

Ren: I don't know. Currently, AI is mainly used to improve productivity, and it is not used in any fields that involve emotion.

Guillaume Grallet: So you think some jobs can never be replaced by robots?

Ren: Yes, of course. There are many jobs that can't be replaced by AI. For example, AI can't taste coffee. If you were sick and felt bad, and a robot came in and gave you an injection without any emotion, wouldn't you feel cold? In such situations, humanity is needed, and the patient's experience matters.

36

Guillaume Grallet: What do you think Huawei will become in 30 years?

Ren: I don't know whether Huawei will still exist in 30 years, so I can't predict what will happen. If possible, I hope you can visit us and have another interview in three years.

Guillaume Grallet: If President Trump wanted to visit Huawei, would you welcome him?

Ren: Of course I would. We could discuss how the world should open and collaborate for shared success. Maybe this would change his mindset.

(Video interview)

37

Guillaume Grallet: President Trump said Huawei was an enemy of the US. How would you respond to that?

Ren: First, Huawei has been promoting happiness and prosperity for humanity. How could Huawei be an enemy? Over the past 30 years, we've been staying in the front line to serve humanity. Huawei can always be found anywhere at any time, be it in war-torn or disease-ridden regions, or during natural disasters like the nuclear leakage in Japan. How could Huawei be an enemy? President Trump's thoughts about Huawei could be wrong.

38

Guillaume Grallet: What is Huawei's goal? Satisfying employees, governments, or the world?

Ren: We want to satisfy society and people, because our ultimate goal is to serve our customers. Who are our customers? 6.5 billion people, and possibly more in the future for more IoT connections. Therefore, we are committed to creating value for customers and ensuring we satisfy people's needs.

39

Guillaume Grallet: Does Huawei have any plans in France?

Ren: France is a country with a great investment environment. France is one of the most advanced countries in terms of math-related science and technology. This is largely attributed to Napoleon's national policies of focusing on mathematics several hundred years ago. The foundation of AI is mathematics. We will put more effort into the development of AI, and we will continue to increase our investments in France.

We've just experienced the impact of AI. Currently, Huawei's phone cameras are the best in the world. This should be attributed to the designs of French mathematicians. They helped us use math-related technologies to combine images. AI will develop in a wider range of areas and we need to attract an increasing

number of excellent mathematicians to join us.

40

Guillaume Grallet: What's your favorite proverb?

Ren: Collaboration for shared success.

Ren Zhengfei's Interview with CNBC

June 19, 2019
Shenzhen, China

01

Deirdre Bosa: Mr. Ren. Yesterday, President Trump tweeted that he had a conversation with your president, Xi Jinping. The US sees Huawei as being at the center of the trade war. How do you see it?

Ren: First, Huawei has virtually no presence in the US, so the trade relations between China and the US have nothing to do with us. Second, if we compare China and the US to two basketballs, Huawei is just like a small sesame seed stuck between them. There's no way we can buffer the relationship between these two countries. I believe the US is a country ruled by law. Ultimately, we will settle our issues with the US through the courts. We have confidence that the court will reach fair decisions.

02

Deirdre Bosa: As you said, you do not have much of a presence in the US. You don't want to be at the center of the trade war, but you have been caught in the middle. Do you have any hopes that when President Trump potentially meets with President Xi Jinping at the G20, Huawei will be a topic of conversation?

Ren: I don't think we are so important that these two great men would want to talk about us. This seems impractical to me.

Deirdre Bosa: That has been the case, though. President Trump spends a lot of time talking about

Huawei, as do other US officials.

Ren: It's because they are in good health and have energy to burn. They must have a lot to attend to. I feel grateful for their attention; they flatter us. We don't deserve such attention.

Deirdre Bosa: You may not think you deserve high attention, but the fact is that, in the US, a lot of politicians, President Trump included, spend a lot of time talking about Huawei, your company.

Ren: Maybe it's because we can't be beaten, no matter how hard they try. It is possible that we will survive for a long time. If they continue to care about us over the next few years, will they get tired out? We have been communicating with the US through different channels. The US is a country ruled by law. Legal proceedings are also a valid means of communication. Through this means, the US needs to present its evidence in court. We do as well, so that the court can decide whether we are right or wrong and to what extent we may be wrong. This is what really matters. I don't think we deserve to be treated as a bargaining chip in their negotiations, and I don't want to be a bargaining chip either.

03 Deirdre Bosa: You may not be willing, but it doesn't change the fact that President Trump has said you are

a bargaining chip and the so-called attack has already affected your business. You said earlier this week that, it would hit your revenue by 30 billion US dollars.

Ren: The 30-billion-dollar decrease in our predicted sales is just a small thing for us. Our sales will still exceed 100 billion US dollars this year. This has little impact on our business operations. We will mainly cut down on some non-core products, so the US sanctions won't have significant impact on us.

Deirdre Bosa: I think many people would call 30 billion US dollars material impact. It's nearly a third of your revenue last year. This affects your employees who are shareholders, does it not?

Ren: No. According to this year's plan, our revenue was expected to reach 135 billion US dollars. Even if our revenue does drop by 30 billion US dollars, we will still have 100 billion US dollars left. Our sales revenue is still growing. By May, we had grown a bit over 20%. We are just predicting a decrease in revenue over the next few months. We haven't actually seen any hard signs of such a decrease yet. As of yesterday, our financial report showed that our revenue was still growing. We are still not sure how things will turn out by the end of year. I think a revenue drop of 30 billion US dollars doesn't mean much to us. We can afford it. We are not a public company, so we don't care that much about revenue.

We care more about the actual quality of our own operations.

04

Deirdre Bosa: Okay, let's talk about the quality of the performance in your fastest growing business unit, your consumer business, your smartphone business. You said earlier this week that smartphone shipments had declined by 40%. How can your business continue to grow if your fastest growing unit is taking a hit from what's happening between China and the US, with the US putting an equipment ban on Huawei?

Ren: Our consumer business in China is not declining, though we previously saw a record decline of 40% in overseas markets. But it is now bouncing back, and its decline outside China is less than 20%. It is recovering rapidly. Throughout this year, our overall consumer business won't experience a huge decline like what we previously saw overseas.

For Huawei as a whole, our estimated revenue for 2019 may decrease from 135 billion US dollars to 100 billion US dollars, a figure equal to that seen in 2018. But our profits are higher than before, and they are growing faster than we could have imagined. This means we must increase our strategic investment. A recent financial briefing was finished within minutes.

Now that our financial performance is better than I had expected, what's the point of listening to these briefings?

05

Deirdre Bosa: You said profit isn't the most important thing to you. But what about your employees who are shareholders and are paid dividends based on profits that Huawei makes? How are they feeling? Are you talking to them?

Ren: Our employees are becoming more energetic and working harder than ever before. We will make every effort to win this "battle" of sanctions, and we know we have what it takes to win. So we are full of confidence. If you get a chance, you can talk to our employees about this.

Deirdre Bosa: Are you saying that your employees don't mind if profit decreases and their pay decreases?

Ren: Their salaries won't decrease. Huawei is completely able to pay all our employees, and we are refining our compensation structure. We have even fast-tracked the promotions of many employees who are performing well in these critical times, and given them pay rises. When it comes to long-term earnings, we need to look at our financial reports at the end of the year. They may be slightly lower than what we planned at the beginning of the year, but I think they will be better than

I expected, because our profits are still very high. This gives me assurance. Therefore, I have asked our finance team not to report to me, so that I can spend more time on our technology.

06

Deirdre Bosa: How would you characterize your relationship with Google? What happens if you lose access to Google's Android operating system?

Ren: I believe Google is a great company. We have great respect for them. Huawei and Google have always shared common interests. If our products don't use their Android operating system, Google could lose 700 million to 800 million existing users. Their losses may be significant if the 200 million to 300 million new users that we are predicted to acquire each year cannot access the Android system. Our sales revenue will also drop by a certain degree in the short term, and we will have to bear these losses. This concerns our common interests. We will not replace the Android system without good reason. But if we have to take that step one day, we can still use our own operating system. Then our growth will recover.

Deirdre Bosa: Will your customers accept that? Already, in the Philippines, Huawei has said they would offer a full refund if their devices cannot run Google and Facebook apps. What if more customers

demand this?

Ren: There have been impacts in global markets, but these are not as significant as many imagined. Many of our new phone functions, such as photography, are independent of Google's operating system. The most important thing that Google offers us is its ecosystem, which is excellent.

Deirdre Bosa: How can you be certain if customers are already saying they don't want to use Huawei phones if they will not have the Android operating system? How can you be so certain of this?

Ren: The US is now the strongest country in the world. Though the US is launching a global campaign against Huawei, the number of our customers is still on the rise. This means our customers have stronger confidence in Huawei than the US government does. This campaign has not had much impact on us, which can be clearly seen in the statistical reports coming from various business lines. We are not feeling much pressure.

Deirdre Bosa: I'm sorry, Mr. Ren, my question was, how can you be certain that consumers will want to choose the Huawei operating system over the Android operating system? What makes you confident that this will not hurt your business more than it already has?

Ren: Things are already at their worst, so they cannot

get any worse over time. We have over 80,000 R&D staff and invest 15 to 20 billion US dollars in R&D every year. Can't we solve our problems in regards to survival and development? This is where our confidence comes from.

Deirdre Bosa: Mr. Ren, I'm sorry, but I'm going to ask you one more time. What makes you confident, though, that customers will be willing to use your operating system? Is it ready to roll out and what happens if, in mid-August, Google is no longer able to supply Huawei with the Android operating system?

Ren: I do not think anything will happen. The only thing that may happen is that while a certain number of customers may not choose Huawei, others will.

07 Deirdre Bosa: Okay, one strategy that you are pursuing in the US is stepping up licensing patents. Even that, though, is threatened now. Senator Marco Rubio is filing legislation that will prevent that. What do you think? What is going on in terms of your patenting business and your ability to make that for some of the shortfall distinguished now through that means?

Ren: The US is a country ruled by law and has the most patents in the world. Will its image be affected if the Senator's recommendation is approved by US Congress? That depends on how the world's 7.7 billion people view

this matter. I have no say on that.

08

Deirdre Bosa: I know that you have a lot of admiration for the US. You have talked about it in the past, yet you are also a student of history. You know that empires and countries, they can decline over time. What makes you have so much trust in the US right now and so much conviction that they will treat you fairly?

Ren: The US was an uncivilized country over two centuries ago. So how has it grown into the most powerful country within 200 years? The answer is openness. Talented people from around the world are willing to go to the US, where the legal, innovation, and property protection systems are mature. This has made the US what it is today. We have to learn from the US, so that we can grow stronger.

The US has a long history, and one little incident does not represent its entire history. Our respect for the US won't change just because of the setback we have met. Just like we won't hate our parents because they spanked us when we were young. This is because we have lived with our parents for decades, and they spanked us only for a couple of seconds. We won't break our ties with them over those few seconds. Similarly, the incumbent US government's attack against us will play a

minor role in its long history. And we have no idea how the next US president will treat Huawei.

09 Deirdre Bosa: You said in the past, though, that number one breeds complacency. The US has been the number one economy in the world. Does it risk becoming complacent? Is it complacent?

Ren: Perhaps. If it were not complacent, why is it falling behind others?

10 Deirdre Bosa: The metaphor that you just used, that Huawei is similar to a child being spanked by their parents in terms of their relationship with the United States. Is there a worry that the child could be hit too hard? Are you worried about Huawei's survival?

Ren: No. Adding Huawei to the US's Entity List will affect only our non-core products. What the US has done may lead us to cut some non-core businesses, but our globally leading products will not be impacted.

11 Deirdre Bosa: You said that Huawei will see a new life in 2021, when the pain from the US attacks will be over. How do you get there? Does that assume that the US export ban will be lifted?

Ren: We compare ourselves to a bullet-riddled Il-2 plane. As serious as the damage may be, the plane's engine and fuel tank are still functioning. We can mend the holes as we fly. When they are all fixed, the plane will be working as well as a normal one. We don't expect the US to lift their ban on us. Instead, we are repairing our plane so that it can continue to fly.

Deirdre Bosa: How are you preparing? Are you now developing your own chips as the ultimate goal to not rely on the US suppliers? How are you preparing to repair that airplane that you talked about?

Ren: We are always making preparations. If we don't want to die, we need to fix our problems and weaknesses. We must first find the biggest hole in the plane and fix it. After that, we will mend the smaller holes. After they are all fixed, we will be able to fly high in the sky.

12

Deirdre Bosa: Two years from now, are you still buying the same amount of components from the US?

Ren: We may be buying even more. US suppliers have contributed to Huawei's growth over the past years. If they're allowed to sell to us, we would have no conscience not to buy from them. We definitely want to buy from them. If the US doesn't allow them to sell

to us, it won't be our fault. It is our hope that we can continue to buy from them. Now we are continuing to place orders to them. It is just that they need to get approval from Washington. If they can get approval, we will still buy from them; otherwise, we will have to find other ways.

Deirdre Bosa: Are you able to find those other ways? Have you already put preparations in place? What are those?

Ren: Yes. We have to repair each of the hundreds of holes so that the plane can return safely. See, this is the bullet-riddled plane I mentioned. Huawei is like this plane, as we are also seriously damaged. It is impossible for me to explain every detail of how we are doing it. If you are interested, you can interview some of our ground-level employees, and they will tell you how we do it. I myself am not a repairer. I welcome you to visit us in two years to see whether we are having a better time than we are today.

Deirdre Bosa: I would love to see that, but I'm very curious, and I still haven't received an answer or any strategy that really explains how you will get there. Will you depend on other overseas suppliers or start making the components yourself, which I know you already are, but to a greater degree?

Ren: These two approaches are both possible. But we will mainly rely on ourselves and focus on improving our own capabilities.

13

Deirdre Bosa: Are you hopeful that the trade talks between China and the US will be resolved?

Ren: We have nothing to do with the trade between China and the US, because we barely have any sales in the US. Trade between the two countries is a huge subject, and we don't know what they are negotiating. We only care about our own business. We hope that they don't mention us. We are not worth mentioning in their dialogues.

Deirdre Bosa: Have you spoken to President Trump or any US officials?

Ren: We've been communicating with the US government through the District Court for the Eastern District of New York and the Texas court. We think we'd better solve problems through the courts.

Deirdre Bosa: Let's imagine that it really was President Trump. Would you be willing to take a phone call from him?

Ren: Of course I would be willing to take the call. We could discuss potential collaboration for shared success. The information society will be huge, and we should

work together to build that society. Everyone should contribute their own efforts. Huawei has only made some accomplishments within a very narrow scope. The US is still the most powerful country in many of the remaining areas. We should work together to build the information society. That's what I would like to say.

Deirdre Bosa: What would you tell him about national security concerns regarding Huawei?

Ren: I would tell him that the atmosphere is only about 1,000 kilometers thick, but the cloud of the information society will be several thousand kilometers thick. That will mean a huge market and numerous opportunities. It won't be a zero-sum game, and everyone will need to work together to build such a huge information society. Huawei is just a step ahead of others in the field of connectivity. The US has a wide range of strong capabilities, and can secure a large share in this huge cloud.

14

Deirdre Bosa: Have you spoken to the Chinese president or any other senior Chinese officials about Huawei's role in the trade war and these sorts of attacks that the business is facing?

Ren: How could I set up a meeting with them to discuss such specific issues? Huawei's issues are small issues to

China as a whole. They are as small as a sesame seed to the US. I don't think they are worth discussing. We can solve these issues on our own. We believe in US law, and we can solve the issues between the US and ourselves through the law.

Deirdre Bosa: You have 180,000 employees. You are one of the biggest companies not only in China but also in the world. Why would it be strange to talk to Chinese government officials when you are such an important company to China and the world?

Ren: We are capable of solving our own issues, and we are fully confident of this. Why should we ask others for help? The US released its sanctions list against Huawei a while ago now. However, nothing has changed in our company. If you tour around our company, you can see how our employees are doing, and that everything has been business as usual. You should visit our production lines, which are operating as usual. Therefore, we don't need help from anyone.

Deirdre Bosa: I didn't ask if you would ask for help. I asked if you would speak to Chinese officials. What happens to Huawei will affect the Chinese economy, will it not? Maybe not now, but it will if your business continues to decline. Your revenue is more than that of Alibaba and Tencent combined.

Ren: We are not under any pressure. We believe the attacks by the US government are a test for Huawei. If we can survive this, we will become stronger. In China, we say "rise from the ashes like a phoenix" and "from the ashes the phoenix is reborn". If we manage to survive the fire, we will become stronger. During this process, we will be able to identify outstanding employees and promote them faster. Those employees who lag behind can choose to leave Huawei. In this way, our team will become stronger in three to five years. By then, we may have already put the difficulties we are facing behind us, laying a solid foundation for rapid development in the future.

Deirdre Bosa: You are saying that you do not talk to Chinese officials about Huawei's business?

Ren: That's correct. When a couple has two children and prefers one to the other, the child who is loved more often turns out to be mediocre, and the other, who gets less attention, usually ends up becoming outstanding. Why is that? The spoiled child is usually unmotivated to become better.

Huawei is like the other child. Throughout our 30-year history, we have relied on ourselves to grow. We have become very tough and are able to stand any pressure or attacks. In the current situation, we must continue relying on ourselves, get up off the ground,

and forge ahead. I believe we will survive this. That's why we have compared Huawei to an aircraft riddled with bullet holes. We want our employees to fix those holes. We have no idea which exact hole each employee can fix, because all of our 180,000 employees are busy fixing holes.

Deirdre Bosa: If Huawei is a child though, and the Chinese government is the parent, the child would be talking to the parent, would it not? I find it hard to believe that you don't discuss business with (Chinese government) officials. In the US, companies regularly talk to lawmakers.

Ren: US companies must abide by the law. It's perfectly normal for them to talk to the government. Regarding our relationships with the US, we can overcome the difficulties we are facing, and we don't need help from anyone to do this.

15

Deirdre Bosa: The export ban against Huawei is already having an effect on American companies that sell to you. We are seeing it in their forecasts for revenue and profits in the year ahead. Are they talking to US officials on Huawei's behalf? Are they trying to lift the export ban or at least get some exemptions?

Ren: I don't know whether US companies will be able

to lift the ban or not. The US attacks on Huawei are hurting both Huawei and US companies. Our revenue will drop, and so will theirs. In fact, many of these US companies are public companies, and drops in revenue will have a bigger impact on them. Huawei is not a public company, and we don't have to take responsibility for drops in revenue. That's also one benefit of not going public.

Deirdre Bosa: Do you or your executives talk to executives at American companies, your suppliers?

Ren: I think all our senior executives have reached a consensus on this. The attacks against us by the US government did not divide our senior management team. We are actively communicating with US suppliers, and continuing to request deliveries and place orders. We will not stop placing orders with US suppliers due to US restrictions. If the ban is lifted one day, how will they be able to ship products to us if we haven't placed orders with them? So we are still sending delivery requests. It's another issue that our US suppliers currently cannot deliver to us. We are trying to find a solution for that.

We still respect US companies, and we feel sorry for them. They have helped us in the past. Now they are also suffering, because of their partnerships with us. But what can I do? It was the US president who made this decision. There is nothing I can do to change the

situation.

Deirdre Bosa: Are they advocating on Huawei's behalf?

Ren: I don't know about that.

16 Deirdre Bosa: Who has more to lose in the trade war: China or the US?

Ren: The trade war has nothing to do with me. How could I know whether the US or China has more to lose? We have virtually no sales in the US, so the tariffs imposed by the US government have nothing to do with Huawei. We are not engaged in these affairs at all, and I don't care about the trade war between China and the US.

Deirdre Bosa: Mr. Ren, you are the CEO of a global company. You have business all over the world. Are you saying that you don't care about the outcome of the trade war?

Ren: No, I don't care.

17 Deirdre Bosa: Do you care about your ability to do business in the United States? Do you think that it's appropriate for US companies like Google, Facebook, and Twitter to be banned in China while you advocate access to the US market?

Ren: No, I don't care. I would guess we will not be able

to do business in the US for a long period of time, so I don't care whether the US will let us into their market or not. Even if they open their market to us, we may not be able to do business there, because it takes a long time to build a system.

Whether it's the US banning Huawei or China banning other companies, these are actions taken by sovereign states. This has nothing to do with our company.

Deirdre Bosa: You are not advocating for access to the US market?

Ren: No. It would only be a waste of resources.

Deirdre Bosa: Would it be a waste of your resources? Because you are putting a lot of resources into it. Again, you are sitting here with me. You have hired lobbyists. You employed executives to speak to American media on a regular basis. Why bother if you don't want access?

Ren: We have been investing resources to engage with the media not because we want to enter the US market, but because we want to dispel the many misunderstandings the US has about us. The US government is not just going against us within the US, it has been lobbying against us around the world. Pompeo has been flying worldwide for all kinds of meetings.

And Huawei is one of the top-three items on Trump's meeting agendas during his visits to other countries. So we also need some publicity in the US to exert some influence.

18

Deirdre Bosa: Do you care about your access to other markets like Europe and Australia that are now considering their relationships with you?

Ren: We have been engaging with European customers for 20 years and our customers there have great trust in us. Europe has not rejected us up until now, so we will continue to provide better services to European people. This is a commitment we are not going to change.

Deirdre Bosa: How important is it for you to keep that access, and doesn't that depend on what the US does, as they put pressure on their allies to stop doing business with Huawei?

Ren: It hasn't affected us much, because our customers still trust us. If they still trust us under such high pressure, their trust in us will only increase when such pressure is relieved. What if we can't meet their demand then? I'm actually more concerned about this right now.

Deirdre Bosa: Mr. Ren, you are already losing customers across the world. Australia has banned Huawei equipment.

Ren: Australia has the right to make its own decisions, why would I worry about this so much?

Deirdre Bosa: Europe is a big market and one of your most important markets. They are considering the same measures?

Ren: Not that I'm aware of. Europe still welcomes us.

19 Deirdre Bosa: Mr. Ren, for many years you didn't speak to the media. In the last six months, you have spoken to many media outlets. Why are you here sitting down with me, a journalist from an American organization, if you don't care about the trade war, and you don't care about doing business in the US?

Ren: First, since last December, over 90% of the global media coverage on Huawei has been relatively negative, because the media didn't know the real situation. Our public relations department believes that we need to show the real Huawei to the world. Since I rarely spoke to the media, our PR people thought that the media might be a bit curious about me. So I started meeting and talking more with the media. Positive coverage now accounts for around 27%, and is slowly increasing to 30%. This is helping people worldwide learn more about Huawei. I've spoken a lot over the past six months, and will probably speak more in the next six months. I hope

these efforts can help the world understand us better.

Besides, I have enjoyed today's interview, because your questions are sharp. You don't dance around things, and I'm very sincere. I haven't avoided any of your questions. This way, we want to show the real Huawei to the American people. After all, they still don't know much about us. Many Americans have never been to China, and many of them have probably only seen films showing China as it was 100 years ago. They may think Chinese people are still very conservative, wearing their hair in long queues, like they did during the dynastic period. Many American people don't know that China has made huge progress in the Internet age. The more I talk, the better people will know about the real Huawei.

Deirdre Bosa: You said you haven't avoided any of my questions. With all due respect, I disagree. You have avoided some of my questions, such as what is your strategy for the export ban that is already hurting your business?

Ren: I think I have answered your questions. We don't rely on chips from the US. We have developed our own chips and our own operating system, and we will continue to mature as time goes on.

Deirdre Bosa: You didn't tell me what makes you optimistic that your customers around the world

will accept your operating system, not the Android operating system.

Ren: In reality, we haven't seen a drop in our total orders worldwide. Most of our orders are for networking equipment, and that's our major product. We have barely seen a drop there. There has been a lot news about countries saying they are launching their 5G networks. Many of them are using Huawei's equipment.

I think only our consumer business has felt some of the impact. But our consumer business is a peripheral business; it's not our major business. Because of this, I don't think it's a big deal that this business has been affected a little bit.

Deirdre Bosa: The consumer business is not the most major business of Huawei? I've seen your financial results. It's the fastest growing and the biggest part of Huawei. And you said earlier this week that smartphone shipments have declined 40% in the last month.

Ren: Then why is the US attacking our 5G, rather than our consumer business? Because we are a leader in 5G, and 5G is networking equipment, not devices. I think what really matters is our position in the international market for networking equipment. Our consumer business outside China has been affected a little bit,

but our consumer business in China is actually growing. Overall, there is not a big drop, and I don't think it's a big deal.

20 Deirdre Bosa: Mr. Ren, I know that transparency is very important to you. That's why you are sitting down with me and other members of the media. Why does Huawei continue to be a private company? Have you considered becoming a public company?

Ren: Would Huawei survive if it were a public company today? Our share price would have fluctuated or even plummeted, causing the company to collapse. As we are a private company, we will not see a big impact even if our revenue drops by tens of billions of US dollars. We will still be able to pursue our ideals.

In this way, I think being a private company works better for us than being a public company. Public companies mainly focus on short-term interests and their current financial results, and they dare not make long-term investments. But we are different. We can invest in things that are 10 or even 20 years away. This will enable us to stay far ahead of others, rather than just take the narrow lead that we have today in 5G. These are the benefits we enjoy as a private company.

Deirdre Bosa: Mr. Ren, companies much bigger than

yours have not only survived hard times but survived as public companies. And Huawei has a transparency issue in the US. So, I'm not sure I understand your argument as to why you wouldn't become a public company. And talking about R&D, there are also companies bigger than yours that are public and they spend just as much, if not more, on R&D.

Ren: Then they should have done better than us, right? But why does the US attack our 5G?

Deirdre Bosa: Let me give an example. Facebook in the United States is under attack, but their share price has continued to grow as they adjust their business. So why would being a public company prevent Huawei's survival?

Ren: First, I want to say we fight for our ideals. If we were a public company, many employees would sell their shares and leave the company under today's circumstances. But now, our employees are more united and work even harder. This is how we are overcoming these difficulties. I think this is the benefit for not going public.

Second, public companies are very rich. We are the poorest tech company. Despite that, we are the world's fifth largest investor in scientific research. We will further increase our investment in this regard, despite

some financial difficulties that we are facing today. Our business might shrink a little bit, but we will not reduce our investment in scientific research during hard times. We will continue to invest 15 to 20 billion US dollars into scientific research each year.

21

Deirdre Bosa: A lot of Huawei's current problems stem from issues with trust and transparency, and skepticism that Huawei operates separately from the Chinese government. Have you considered creating an autonomous subsidiary outside of China that would be beyond the reach of Chinese law?

Ren: No.

Deirdre Bosa: If not, how can you change the perception that Huawei is an extension of the Chinese state?

Ren: Who can unify the thinking of 7.7 billion people around the world? People think differently. As long as our customers understand us, then that's enough. We don't need to take additional measures to make everyone understand us. It doesn't matter if some people don't. History will prove what kind of company we are. It has already done so over the past 30 years. If we can survive in the next 30 years, history will further support us. Why do we have to prove ourselves by going public?

Deirdre Bosa: I'm not asking about being listed. I'm talking about creating an autonomous subsidiary outside of China if that would help your business if it continued to suffer around the world, and if that prevented the 30-billion-dollar hit to revenue. Would you consider creating an autonomous subsidiary outside of China if it would help your business and ensure Huawei's survival?

Ren: 30 billion US dollars is not a big deal. We don't have to change our overall operating mechanism. We will prove to people around the world that Huawei is a good company. We want customers to find this out through their own experiences. We don't need politicians who know little about technology to understand us.

Deirdre Bosa: So, under no circumstances would you consider creating an autonomous subsidiary outside of China, under no circumstance whatsoever?

Ren: We have subsidiaries in more than 100 countries. They are independent. They were not set up to prove ourselves to politicians, but to ensure compliance. We are committed to abiding by the laws of the countries where we operate, as well as UN resolutions and international laws.

Meng Wangzhou, being held in her own home in Canada, awaiting her extradition trial. While this is certainly an undesirable position, she does have access to her home, to visitors, and to her lawyers. The Canadians detained in China are not getting the same treatment and from Canada's point of view, they are being treated unfairly. Do you think that's appropriate?

Ren: First of all, my daughter is not guilty. She didn't commit a crime. The Skycom business in Iran was clearly understood by the bank throughout the entire process. We exchanged emails, and each email included the bank's logo. They knew about the company and the transaction settlement. My daughter just said something over a cup of coffee with them in a café. This has somehow now become significant evidence of a crime. My daughter's issue can be clarified and resolved, as long as the court discloses the evidence. The District Court for the Eastern District of New York can ask the prosecutors any questions they need to, and our lawyers can also ask them questions, then both sides can present their evidence. The truth will then be revealed. As I said, the bank knew about the transactions from beginning to end. How can something my daughter said over a cup of coffee become evidence of a crime? But we believe that the US and Canadian judicial systems are open and transparent, and we believe that this issue will be solved eventually. So we are waiting patiently for a resolution,

and I don't feel too aggrieved.

Deirdre Bosa: You believe the system is open and transparent in Canada. But do you think it's appropriate that she is in her own home with access to visitors and lawyers, while those Canadians detained in China are not receiving the same treatment? Do you think that's appropriate?

Ren: That's an issue between countries. I'm focusing all my attention on repairing our aircraft, and checking which parts are riddled with bullets and might need patches. Currently, I don't even have time to worry about my daughter, so how could I possibly care about other things? The issue you brought up will be settled through negotiations between governments.

23

Deirdre Bosa: Mr. Ren, thank you very much for being candid and taking this interview.

Ren Zhengfei's Interview with the Financial Times

June 24, 2019
Shenzhen, China

01

James Kynge: We have all seen a very famous photo recently, an Il-2 aircraft from World War II. I heard that you like this photo very much. Could you share with us why you like it? Do you think the aircraft is akin to your situation? Is Huawei facing many challenges today, just like this aircraft?

Ren: I stumbled upon this photo when I surfed on wukong.com one night. The website said that this aircraft managed to make its way home. I felt that it was quite like us – we are riddled with bullets from the US. We had prepared a bit for this, but we didn't expect the US government would be so committed to attacking Huawei from so many fronts. The US government has launched precise and systematic "strikes" against us. We didn't anticipate they would be so strong and all their industries would be so united. They even leveraged the media, academic institutions, and standards organizations to push us into a corner. Their "strikes" have hit more than a little software or a few chips, and have left us with several thousand "holes".

That aircraft is quite a bit like us. It has unshakable resolve to fly home. So I downloaded it from the website. I was trying to find a clearer photo of it, but I failed.

02

James Kynge: I heard you said last week that you protect your core parts only, like your engine and fuel

**tank, and aren't prepared to protect non-core parts.
Which businesses do you want to give up on?**

Ren: First of all, Huawei does not have enough energy to defend from all sides at once. This is impossible. To lead the world, we need to develop some cutting-edge parts, and build systems based on these core competencies. We compare these core parts to the engine and fuel tank of the bullet-riddled aircraft. We have worked hard for over 10 years, so we can make it. We won't collapse. We wouldn't be able to make it home if the fuel tank were hit, because the engine couldn't run without fuel. We couldn't fly back if the engine were struck either, even with a full fuel tank. But if the wings were struck with several "holes", we could make our way back, though we may need to slow down.

We believe the US is cracking down on our network connectivity business and 5G is just a small part of that business. This business is fully prepared, so impact on this business will be minimal. We didn't expect that our consumer business is suffering more. Though there is more of impact on it than we see in connectivity, we are gradually regaining customer trust. Some of our non-core product lines have been shut down in recent years and their employees have been transferred to our core businesses.

03 James Kyng: The US has added Huawei to its Entity List recently. How will Huawei address this difficulty and challenge?

Ren: I don't think we will collapse because of this. I am sure of this. We are repairing the aircraft while continuing to fly on. Of course, some of the "holes" that we are fixing are quite large, while some others are small. Ultimately, we will get all of them fixed over time. After that, we will be able to survive and thrive.

James Kyng: Which big holes should be fixed?

Ren: Holes are everywhere.

James Kyng: Is it chips?

Ren: We don't have too many problems with chips, as we can create most of what we need. But we haven't got prepared as much for some other components as we didn't think they had much technical content. But a machine won't work if a component is missing.

We don't have big problems with our hardware. But there is some impact on our software systems. I think the world has an extremely rich reserve of software talent. The software business is booming in every country, including China. We at Huawei also have strong software capabilities, mainly in embedded operating systems for hardware. We are the strongest in the

world in this regard. But we may not be that strong in software-defined networks, which require a macro architecture for networking. Even if they continue to cut off our supply of these things, we will be able to get the "holes" fixed and catch up.

04 James Kynge: Do you think you can buy US chips from Chinese companies that have imported them from the US?

Ren: This goes against the spirit of the Entity List, which, in essence, bars any sale of US components to Huawei.

James Kynge: How could they possibly find out?

Ren: For the past one or two decades, the US has often run unannounced inspections on our equipment. They could enter a few lines of code, and the results would show whether the equipment contained US components and whether it was installed where Huawei promised it would be. If some equipment ever went missing and wasn't installed where we promised it would be, they would beat us to death. There is no way we could buy US components from other channels. If they sold to us, other companies would be under US investigation, too.

James Kynge: As a result of the US Entity List, when will you experience the biggest adjustment? Is it in three months, six months, or something else?

Ren: We've been making adjustments for years. Our overall business hasn't been affected much because we have already developed capabilities in chips, which are the most advanced and important part of our business. For smaller components, we can research and develop them rapidly. We can also use Chinese components as alternatives.

If the US opens up to us, we can use their hardware and software to make extremely cutting-edge systems. But if we aren't allowed to use US components, we are very confident in our ability to use components made in China and other countries to make industry-leading integrated systems, because we have world-class capabilities in this regard.

James Kyngge: Do you mean that Huawei will not stop the production of any products despite the US Entity List?

Ren: We will stop making some non-core products. But we won't do that in our core businesses because our world-class, major products don't rely on US suppliers.

Yuan Yang: Which products will be ceased?

Ren: In 5G, optical transmission, core networks, and access networks, we are immune to US impact. Our optical systems are well ahead of others in the global market, and we don't need any help from the US in this

respect. In 5G, we are at least two to three years ahead of others in the global market, and we also don't need any US components in this respect.

In terms of core networks, there might be some impact on our servers, but other parts of the business will not be affected. Our TaiShan servers boast quite powerful performance, and they will soon be mass-produced to support our core network business. According to the Entity List, we cannot use the US's x86 servers, so we are facing temporary challenges in the public cloud market.

05

James Kyngé: It's said that you have developed a new operating system called Hongmeng. Do you think Huawei is able to roll out an operating system that can replace Google's Android system?

Ren: First, the Hongmeng OS was not made for mobile phones, but for IoT applications such as autonomous driving and industrial automation. The OS ensures precise low latency, down to 5 milliseconds or even sub-milliseconds.

Second, we hope to continue using the globally accessible, open operating system and ecosystem for our mobile phones. But if the US restricts our access, we will develop our own operating system. What's most critical

to an OS is its ecosystem. It takes two to three years to build a robust ecosystem.

We are confident that we can rely on the Chinese market to build a global ecosystem. First, China has a huge market of apps. Compared to all other types of Internet software, our OS delivers extremely low latency. If some people can effectively develop low-latency applications with our OS, they will choose Huawei for some of their business. Second, many Chinese content service providers who are eager to go overseas have failed. Embedded in our OS, they will be able to expand overseas.

James Kyngge: What production apps are included?

Ren: Just now I was talking about our system for phones. We have another system for production. Our production system is, if I may say, leading the world.

While our phones may have weaknesses in the ecosystem and apps, they are strong in many other areas. For example, our smartphones are the world's leader in photography, all-scenario services, and AI, thanks to our mathematical capabilities. Huawei has several hundred mathematicians and several hundred physicists. They shouldn't be likened to Leonhard Euler, though we indeed have an Euler Lab. We do not call them "Eulers" or "Turings"; we call them mathematicians.

There isn't just one mathematician. There are thousands of mathematicians in the world. Huawei needs a huge number of mathematicians, physicists, chemists, and neurologists. Their achievements will come out on top, and there will be demand for them.

After Huawei was added to the Entity List, our consumer business saw a huge decline outside China. But it has gradually recovered and is now close to its original numbers. Sales in China have soared. Some Chinese people are even buying Huawei phones because they feel bad for us. I once said, "Buying Huawei phones is not a patriotic act." People can buy our product if they like it, but if they don't like it, then they'd better not buy.

Young ladies in China are fond of taking photos of themselves. Huawei has the world's best photography technology because we have put a huge team of mathematicians into this area. Good photography does not rely on camera lenses. A human eye is composed of several hundred million "camera lenses" and thus sees images pretty crisply. Cameras are nowhere near the human eye. Our mathematicians use mathematical methods to convert incoming light rays through tens of thousands, or even hundreds of thousands, of camera lenses into electrical signals that make up an image. This mathematically calculated image looks pretty real.

Huawei is a world leader in these domains. As of

May 30, we had sold more than 100 million phones. That means we reached our goal of 100 million units 50 days earlier than we did last year. Of course, good performance in the first half of the year doesn't guarantee good results in the second half, because our growth was fast before the US added Huawei to its Entity List. When the blow came in May, we continued growing over the next two months due to the momentum we'd built up previously. We will scale down some of our businesses for the rest of the year and there will be a moderate decline in our phone sales.

James Kynge: Do you mean that because of the Entity List, China, especially Huawei's business, has to be localized? Will your imports decrease in the next two to three years?

Ren: Our imports will remain diversified, and we will still buy from the US if they allow us to do so. US component suppliers are also seeking approval from Washington to sell components to us. Once this approval is granted, we will continue buying components from them in large quantities. But we are also looking for alternatives at the same time. We are developing our own components and we have strong expertise in doing so, which will enable us to survive.

06

James Kyngé: What are Huawei's advantages over Nokia and Ericsson in the 5G market, especially in the international 5G market? Are Huawei's advantages in price or technology? If your prices are cheaper than theirs, could you tell us how much cheaper?

Ren: Our 5G equipment is much more expensive than that of Ericsson and Nokia. For the same type of equipment, ours can deliver far more value to our customers and is thus more expensive. If our products were too cheap, we may have pushed some other vendors out of the market. So we insist on selling products at higher prices, like Apple, so that we can make more money. If we distribute this money to our employees and shareholders, they may become complacent. So we choose to spend a large portion of this money on research and development, and donate a portion of this to universities to support the research of professors. In this regard, we adopt principles similar to how investment works according to the US *Bayh-Dole Act*, where universities own research results that they have achieved using federal funding.

Likewise, we fund university research and don't seek to own the research results of universities. This helps us stay far ahead of others in terms of theory. Even during our hardest times, our R&D spending will not fall below 15 to 20 billion US dollars.

We have the aspiration and motivation to move forward, and we will surely achieve our expected results.

07

James Kyngge: I heard that you have won 46 5G contracts from countries other than China and shipped 150,000 base stations. Is that true?

Ren: Actually we have won 50 5G contracts and shipped 150,000 base stations.

James Kyngge: How many 5G contracts do you expect to win from markets outside China for this whole year?

Ren: Most customers outside China will choose Huawei's 5G, because we provide the most advanced 5G equipment with the highest practical value. We've worked with our customers for over 20 years, and they won't abandon Huawei just because of a few things others say about us.

James Kyngge: How many out of the 140-plus countries in the world will use Huawei's 5G system?

Ren: About 135 or 136 countries. The US and Australia certainly won't choose us. Most European customers will, however.

James Kyngge: How about the UK?

Ren: The UK will, too.

08

James Kynge: I heard that the UK is now reviewing the source code of Huawei's systems.

Ren: The UK is reviewing our source code out of their concern for us, because no system is perfect. The UK has simply pointed out our problems and vulnerabilities concerning security during their reviews. We are both working to ensure security. The UK is not rejecting us; it's telling us that our systems have vulnerabilities. They just don't use fancy words to solve problems. Huawei has been subject to the most stringent reviews in the UK, and is thus deemed the most trustworthy by them.

James Kynge: Will this cost Huawei a lot? What is the estimated cost?

Ren: It will, of course, cost a lot of money, but I don't know the exact figure. There must be a consistent standard for cyber security to avoid discrepancies between countries and companies. Europe has proposed to develop a consistent cyber security standard, and has released its privacy protection standards – the GDPR, which we strictly abide by.

This will require us to re-architect and re-develop networks, and make changes to network architecture and code. It will take about five years to re-architect all products, which means a lot of effort across the company. However, the new network and product

architecture will be the most simplified, the most secure, and the cheapest for future networks, and comply with the GDPR at least.

Before Huawei was added to the Entity List, we had planned to increase our revenue to 250–300 billion US dollars in 2023. However, due to the impact of the Entity List, our projected revenue for the next two years may decrease. But this revenue may then leapfrog in the following three years, or even hit the target we previously set.

09**James Kynge: Do you think Huawei will get the largest share of the Chinese 5G market?**

Ren: We will certainly have a larger share in the Chinese market, because all of the Chinese carriers know us well. During recent bidding for the core network launched by China Mobile, about 44% of the market share went to Ericsson and Nokia, while we got a little over 50%. The West is most concerned about the core network when it comes to cyber security. China is open in this area, so it allows Western companies to have such a large market share in the core network. This also shows that China trusts them.

The UK has made the right decision to allow Huawei equipment to be used in its networks, except for the

core networks. 5G base stations are truly transparent. Information packages are not opened while being transmitted, and they are not opened on the access network. They aren't opened and processed until they arrive at the core network. Therefore, it is understandable that the UK proposes not to use Huawei equipment for its core network because they think this ensures better security. However, not using Huawei's core network equipment could also mean being left behind, because Huawei's core network equipment is the best in the world. There will be more foreign customers willing to buy our core network equipment in order to stay competitive.

China has not allowed a monopoly in the core network market. It has allowed 44% of the market share to go to Nokia and Ericsson. We won't attempt to snatch up too much of the 5G market share. Otherwise, we will be squeezing other companies into a very limited space.

James Kynge: People think that China will be a huge 5G market. Can you predict how large it will be in around two or five years?

Ren: It's hard for me to make a prediction about the Chinese market alone. I have never thought about sizing up the Chinese market alone. I think the whole world will need at least 12 million 5G base stations, which means the market potential is huge. I'm very optimistic about the future 5G market.

James Kynge: Does Huawei receive any preferential treatment in the domestic 5G market?

Ren: No.

James Kynge: Huawei is a leading company not only in China, but also worldwide, so does it deserve to be treated preferentially in China?

Ren: China is a market economy. How can there be any preferential treatment in a market economy? The Middle East is rich, so it makes sense to sell at higher prices there. In Europe, prices are quite high as well, which also makes sense. Our phones sell at higher prices in countries outside of China.

Yang Yuan: The 50% of market share you mentioned was for the core network. What if we also consider base stations and other equipment?

Ren: China has just started the 5G bidding process, and I'm not sure about our market share in base stations. It is likely that this is also higher than that of other companies.

10

James Kynge: Let's talk a bit about President Trump. If he gave you a call, would you pick up the phone?

Ren: He is very busy. Would he be able to make the

time to call me? I don't think this is realistic.

James Kynge: If he was willing to do so, would you answer the phone?

Ren: I don't understand English anyway.

James Kynge: Interpretation could solve that.

Ren: Interpreters don't know much about politics, while I specialize in electronics. We might speak different languages. So there may be some difficulties communicating with each other.

James Kynge: If Trump called and you answered, what would you say to him? How do you think the dispute between the US and China, particularly the dispute regarding Huawei, could be resolved?

Ren: First, he is somebody, and I am nobody really. How could I possibly meet him? Second, I am busy patching holes and may not have time to meet him. Third, the trade issue is a national issue that is related to the livelihoods of hundreds of millions of people. Why should we get involved and ask people to sacrifice their interests to save Huawei? If China negotiated in Huawei's favor, it would have to make concessions in other areas to benefit the US. I don't think our country should do this. It's fine if we are attacked. We get less money and work harder, which will toughen us up.



James Kynge: We all know that the US government has caused a lot of trouble for Huawei. Do you think the Chinese government will continue to restrict US companies that do business in China?

Ren: In fact, the US is helping us in a great way by giving us these difficulties. Under the external pressure, we have become more united than ever. The greater the pressure we face, the more resilient we will become. That's how steel is made, through thousands of strikes. We are currently a little bit "fat" as a company because we have been expanding without being tested by many hardships over the past 30 years. These attacks against us will force our organization to become more solid, and our people to become tougher and stronger-willed. This is good for our future development. We are not afraid of such attacks.

However, I don't think China will retaliate against US companies because only by staying open will China have a future. The current situation is that the US is not selling its advanced products to China, not that China is not buying American products.

If China refused to buy from advanced US companies, wouldn't China cause itself to be left behind? Strategically speaking, China will only become more open, not more closed. This is how I understand it from the speeches delivered by China's leaders on television.

China will only become increasingly open, especially in the manufacturing sector. In the past, joint ventures were mandatory in the manufacturing sector. Now we can see more and more solely-foreign-owned companies in this sector. They use their own technology, make their own products, and sell these products on their own. During this process, China is acting as a platform.

The 200-year history of the US shows why being open is the right way forward. More than 200 years ago, the US was an untamed land of wilderness. Over the past 200 years, it kept opening up, attracting talent in great numbers, and extensively optimizing its systems. These factors are what made the US the most powerful country in the world. China needs to learn from the openness of the US.

12

James Kynge: Let's discuss the trade war between the US and China. Are you willing to see Huawei included in the trade agreement? Is that possible?

Ren: There is no benefit to us if we are included in the trade negotiations. We barely have any sales in the US. If these two countries were two large balls, Huawei is just a sesame seed smashed between them. Oil can be squeezed from a sesame seed, but where would the oil flow to? We don't benefit from the US, so why should

we participate in the discussions between the two countries? We are still focusing on patching our "holes". We don't have enough time or energy to study global trade relations.

James Kynge: Is it possible that the US will remove Huawei from the Entity List and allow US companies to continue to export to Huawei?

Ren: Of course I hope the US will do this. There is no reason to add Huawei to the Entity List. If we are guilty of something, we should be put on trial. However, they have never provided any evidence, and passed judgment without any debates or trials. What the US government did is unfair. In this case, how could the world believe that the US is a country ruled by law? I think they should remove Huawei from the Entity List. But even if they don't, we are not afraid of what we may face. This will only make us stronger.

13 James Kynge: It is said that HSBC is cooperating with the US government, which may be causing many difficulties for Huawei. What do you think about Huawei's partnership with HSBC in the future?

Ren: First, HSBC ended its partnership with Huawei quite a long time ago.

Second, there isn't any proof that Meng Wanzhou committed any crime. The bank knew about Skycom's business in Iran from the beginning and also understood Skycom's relationship with Huawei. This can be proven by emails between the bank and Huawei, which have the bank's logo on them. From a legal perspective, they can't claim they were deceived or knew nothing, because we have evidence.

Meng Wanzhou just casually said something over a cup of coffee, which can't be evidence of a crime. Throughout years of business dealings with Iran, Meng Wanzhou was simply part of one discussion in a café. This cannot be the basis for accusations of a crime. The US court should investigate the prosecutors. They have accused Meng Wanzhou of crimes, but what are these charges based on?

Under the current circumstance, we need to clarify the facts related to this case and present all the evidence. In addition, Meng Wanzhou hasn't committed any crimes in Canada, so Canada has violated its own law enforcement procedures. Canada is a country ruled by law. They should stop infringing on an individual's constitutional rights by taking the US's side. The country's image could be severely damaged if people stop believing that Canada is a country ruled by law.

We trust the Western rule of law, which is based on

facts and evidence. Only with facts and evidence can we judge whether someone is guilty. This issue won't impact our partnerships with other banks. When this issue is clarified, we still need to seek further collaborations in the future. Finance is already a globalized system.

Sue-Lin Wong: Has HSBC provided any explanation regarding the end of their partnership with you?

Ren: HSBC ended its partnership with us and stopped all transactions. It's HSBC that called a stop to this, not us. They didn't explain and simply stopped providing services to us. We will partner with other banks.

Sue-Lin Wong: Do you think you have been treated fairly? If these issues are properly addressed, will you continue to partner with HSBC?

Ren: The world is never fair. It's all about whether you are strong enough or not. We have the strength to resolve these issues, so we don't care about how we are treated. Now is not the appropriate time to discuss partnerships. The most important thing to do right now is to complete these legal proceedings.

James Kyngge: Ms. Meng's case has been going on for a long time. What do think the next step will be? Should the US speed up to resolve this issue?

Ren: Meng Wanzhou is innocent from all legal

perspectives. She shouldn't be extradited to the US. First, this case is based on groundless charges. Second, Canada detained Meng Wanzhou based on the direction of the FBI. They severely infringed upon her basic rights multiple times. Third, the arrest of Meng Wanzhou is an affront to double criminality, a foundational principle of Canadian extradition law, because Canada does not impose financial sanctions on Iran. Fourth, the political factors affecting the extradition procedures will impair the fairness of this case and also infringe on the legal rights of Meng Wanzhou.

Saying we haven't communicated with the US government is just not true. We have sued the US government in several US district courts. This is how we communicate with them, through courts and with evidence. Decisions cannot be made over a cup of coffee. If that was the case, you couldn't say the country is ruled by law.

James Kyngge: As the father of Ms. Meng, do you have the opportunity to speak with her over the phone? What do you say to comfort her?

Ren: She's studying every day, and I frequently talk to her about various topics. She doesn't need me to comfort her because she's a very strong woman. The US is wrongfully holding her. They thought they would easily get the evidence they needed by arresting her.

Sue-Lin Wong: What is Ms. Meng studying?

Ren: She is studying many things, but I don't know what subjects she is studying in particular.

14 James Kyngge: It is reported that the US attacked Huawei in 2013, and Mr. Guo Ping also said the US hacked Huawei's system and stole emails and source code. Did you ever analyze that issue or how much harm was caused to your company?

Ren: Back then, when developing our own IT systems, we decided to use American bricks to build our own Great Wall. This Great Wall was not built to defend against the US government, the Chinese government, or any other government in the world. If they just have a look at our systems, that would not do any harm. We only use our Great Wall to prevent malicious competitors from stealing our trade secrets. If we wanted this wall to defend against every government, it would have been extremely thick and very costly.

We don't have anything that is worth the US government hacking. Our company doesn't do bad things. If they find any issues and let us know, we will make corrections so that our systems become stronger. So we are not worried that the US government may get anything from our servers.

15 James Kyngge: Some people from the White House have claimed that Huawei has ties to the People's Liberation Army and China's Ministry of State Security. Some even said that Madam Sun used to work in the Ministry of State Security. What's your response to these allegations?

Ren: In the US, many people who worked in the military later worked in companies and even held very senior positions in them. Such things are more common in the US than in China. It's true that I was once a soldier, but that does not mean that Huawei has ties to the military. Madam Sun worked as a technician in China's Ministry of State Security, responsible for installing 200-line switches, but she has no other background. Otherwise, she would not have quit her job. After China implemented the reform and opening-up policy, many people left their public service jobs and started their own businesses.

Huawei has no relationship with China's military or Ministry of State Security. Our relationship with the Chinese government is very simple: We abide by the law and pay taxes in accordance with the law. We have no other relationship beyond that.

Huawei is a completely independent company. If our success was due to ties we had to the Chinese government, China would be much more prosperous,

because there are numerous other companies that have ties to the Chinese government. We have become what we are today because we are able to make our own decisions, including our decision to become an industry leader.

16 James Kynge: Regarding Huawei's revenue and profits, you said last week that Huawei's revenue in 2019 will be about 30 billion US dollars lower than forecasted. Would you please share with us your forecast on profits?

Ren: Our original revenue forecast for this year, made at the beginning of 2019, was 135 billion US dollars, which we have now reduced to around 100 billion US dollars. Our net profits are expected to be around 8 billion US dollars. Actually, I stopped listening to a financial briefing our finance personnel were delivering, because their conclusion regarding our business results was much better than I thought. So I told them to go back to work and not to waste time on reporting. I am a bit pessimistic, you see.

James Kynge: So Huawei's addition to the Entity List will not have a large impact on your business results?

Ren: Our original revenue forecast for next year was more than 150 billion US dollars, which has now been

changed to around 100 billion US dollars. This year, our workforce will expand from 188,000 people to 194,000. Why the large increase? We are going to need a lot of manpower for R&D, supply, sales, services, and other domains in order to phase out many old versions of our products and release new versions. We will bring in more than 10,000 fresh graduates in July and August. We will continue to grow despite the difficulties we are facing.

James Kynge: I've heard that Huawei is such a popular employer that there are up to 20,000 people applying for one job position at Huawei. Is this true? Or maybe this number is wrong.

Ren: This has been exaggerated. We welcome people who want to join Huawei, but we also have requirements. Huawei University has developed a system that consists of many different exams. One must pass all relevant exams before being given an interview. For example, if you won a gold medal in an international computer competition, you may get a salary 5 or 6 times higher than the average starting salary. There are just 40 gold medal winners around the world every year, and we recruited many of them this year, because we offered higher salaries than Google. We have recruited several young geniuses this year, and more will join Huawei next year. Talent, rather than land, helped the US develop into the world's most powerful country.

We can learn from the US to attract more outstanding talent. We believe more such talent will join Huawei in the future.

James Kyng: Are these young geniuses from China or other countries? How many of them are from abroad?

Ren: Both. Of course, these dozens of young geniuses are not all gold medal winners; some are silver and bronze medal winners. There are maybe 50,000 contestants in the world's computer competitions every year. After rounds of screening, only 4,000 will be left, which will then become 400. In the end, only 40 will be winners. There are nowhere near enough Chinese contestants in these competitions. China should encourage more university students to participate in these international competitions. These competitions have established rules and very strict coaches, which can help assess the participants' abilities and improve our education approaches. After these geniuses join Huawei, they will activate our organization and inspire our team.

Yuan Yang: You just mentioned that the world's software market is very flexible. Have you recruited more people from your American carrier customers or partners?

Ren: In principle, we don't hire Americans in this domain. As long as a person has an American passport, green

card, or permanent residency, they may be considered to have American elements. Hiring them will make us subject to the US government's long-arm jurisdiction.

Yuan Yang: You don't recruit their employees?

Ren: No. Because the US government has long-arm jurisdiction. If we hire people who have a fixed presence in the US, their work results may be subject to the US export control laws.

17 Yuan Yang: Many governments now require tech companies to hand over data. For example, the US government required Apple to hand over user data in order to unlock their phones. If the Chinese government raised some lawful requests which might go against user interests, what would you do?

Ren: Apple is our model.

Yuan Yang: Will you stand against the government like Apple?

Ren: No. Actually, Apple is not a mobile phone company, but an Internet company, a kind of carrier. Only carriers can control user data. Apple has established a platform on which a full ecosystem has developed, so Apple owns that data. After we sell pipes (network equipment) to customers, everything transmitted through them, be it

water or oil, is controlled by carriers. We don't own any data. Sovereign states have the right to manage the data of carriers within their territory, but no sovereign state can manage data across borders.

Yuan Yang: What if the government requires Huawei to unlock a phone?

Ren: Users control their own data, not us, so how could we unlock their phones? Data is owned by our customers, not us. Carriers have to track every user, otherwise no phone calls could be made. It's a carrier's duty to track user data. We, as an equipment provider, don't track any data. So this issue doesn't apply to us.

Yuan Yang: But you know the operating system, so you could help unlock a phone. If the Chinese government raised a lawful request, could you reject it? Would you be put in prison for rejecting such requests?

Ren: Why would I agree to that? We will never do such a thing. If I had done it even once, the US would have evidence to spread around the world. Then the 170 countries and regions in which we currently operate would stop buying our products, and our company would collapse. After that, who would pay the debts we owe? Our employees are all very competent, so they would resign and start their own companies, leaving me alone to pay off our debts. I would rather die.

At the Munich Security Conference, Yang Jiechi, a member of the Political Bureau of the Communist Party of China (CPC) Central Committee and Director of the Office of the Foreign Affairs Commission of the CPC Central Committee, made it very clear that the Chinese government never requires companies to install backdoors. Premier Li Keqiang then reiterated that position at the press conference held after a recent session of the National People's Congress. Recently, when Premier Li Keqiang visited our booth at this year's 16+1 Summit in Croatia, he told our staff not to install backdoors. The Chinese government cannot make it any clearer that it will never ask any company to do that.

Now the EU is preparing to set a unified standard which will require all equipment vendors and carriers to guarantee there are no backdoors in their equipment and networks. We strongly support this initiative and are willing to take the lead to sign an agreement based on this standard. Unfortunately, such an agreement cannot be signed for now, because we need to wait for other equipment vendors and carriers to agree and for the EU to establish the system. But overall, this is a great initiative from the EU.

Yuan Yang: I am a little bit surprised to hear your answer about user data. Both Tencent and Alibaba have said publicly that, if requested, they would hand over some user data to the Chinese government.

They have also said that these are lawful requests so they have to accept them. Is Huawei different in this regard?

Ren: We are a company that sells water taps and pipes. Why would they request water from us? Tencent and Alibaba are the sources of information, so they have the water. But we don't. How can anyone ask for water from a hardware store like us? We only sell the equipment. The data is stored in your mobile phones, not in our systems.

18

Yuan Yang: Regarding the Entity List, it's difficult to localize some components of core servers. What are the most difficult holes to patch? How long do you think this will take? 4 years, 5 years, or 10 years?

Ren: It's impossible to take that long. If we are not allowed to use the x86 server, we can use our own server, TaiShan, instead. Our server is probably more advanced.

Yuan Yang: What are the most difficult holes to patch?

Ren: We are working to patch these holes. I don't think there are any problems in this regard. Otherwise, how would I be able to smile and talk with you about this issue today? I would be very nervous.

Sue-Lin Wong: How long will it take you to break free from reliance on the existing supply chain?

Ren: I don't think it will take long. Most of the issues have already been solved.

Yuan Yang: How will you patch these holes? Will you hire more people?

Ren: Not necessarily. We already have a large workforce. After we cut some of our peripheral businesses, people from these businesses will be transferred to our core businesses.

Yuan Yang: The US has a monopoly over the world's chip designs and the software market. Could you patch these holes in high-end software like this?

Ren: We have obtained a permanent license for these tools and software. This will not be a problem. But it's hard to say whether there will be issues with upgrades.

19 Yuan Yang: You'll never accept the US's requests, right?

Ren: Unless they release Meng Wanzhou and remove Huawei from the Entity List with no strings attached, I don't think we would have anything to discuss. Other issues should be handled by the court.

20

Yuan Yang: The US sees 5G as one of the most important "battlefields". Just now you also mentioned IoT. Do you hope for Huawei to set the global standard for IoT in the future?

Ren: Certainly, IoT will be even more powerful than 5G.

Yuan Yang: If Huawei becomes the global "king" of IoT, what do you think the US will do?

Ren: They will also attack our IoT.

Sue-Lin Wong: How will they attack?

Ren: They eat a lot of beef, which makes them strong. And they don't get tired easily, so we can't beat them on the football field. To stay healthy, they need to burn a lot of calories. So they spar a lot and don't need to go to the gym.

Sue-Lin Wong: But they are not good at playing table tennis.

Ren: Table tennis does not consume as much energy as football does.

21

Yuan Yang: Huawei has some friends in the US, though they have a smaller voice. For example, many semiconductor companies and carriers in the US do support Huawei. Are they talking to the White House

on Huawei's behalf? Do you think they can speak for Huawei in the US?

Ren: We don't know what they are doing. We are now focusing on patching the holes on our aircraft, and we don't have the time to think about the rest of the world. Now we have switched from seeking development to fighting for survival. We're trying to gather together scientists to make the most advanced future technologies, so that we can fight back. These people are very competent. It's very easy for them to solve key challenges and difficult problems. They can solve many problems within a short period of time.

Yuan Yang: Will you work with them to make some plans and strategies?

Ren: Our procurement team should be talking with them. After all, we have to sign contracts and place orders. When Washington allows them to do business with us someday, how can they ship goods if we haven't placed any orders? So we should keep discussing supply chain matters with them.

Yuan Yang: Considering the Entity List, Huawei is facing a lot of uncertainty. If some foreign carriers wanted to buy a lot of Huawei's 5G base stations, but now they become more cautious and hesitant, how can you convince them to buy your products?

Ren: We don't need to convince any of them. Actually, there are many carriers rushing to buy from us.

Yuan Yang: They are not affected by the uncertainty?

Ren: We have worked with them for two to three decades, and they trust Huawei. So we should have no supply issues.

22

Sue-Lin Wong: What do you think is the biggest difference between the relationship between the US government and US tech companies and the relationship between the Chinese government and Chinese tech companies?

Ren: The Chinese government manages private companies through legal frameworks and taxation. They don't intervene in their business operations. I don't know why the US government micromanages its tech companies as much as they do. They act like a mother-in-law, and if they get too involved, their daughters-in-law might run off.

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