

# IN HIS OWN WORDS

DIALOGUES WITH REN

2019.09

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2019.10



VOLUME VI

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## Offering Higher Education Opportunities to Women in Bangladesh

Bangladeshi women face many obstacles in their pursuit of higher education. Due to their lack of latest knowledge and skills, they face many challenges finding jobs and seeking further personal development. To address these challenges, Huawei partnered with the ICT Division of Bangladesh and local carriers to empower the sustainable development of female education using ICT technologies. We used six buses equipped with training facilities to help women master digital skills. Our goal is to allow 240,000 women in the 64 regions of Bangladesh to benefit from this program within three years.



## Rebuilding after Floods in Thailand

In November 2011, Thailand was hit by severe floods – the worst flooding over the past 50 years. Huawei worked side by side with customers to protect network equipment and keep communications running smoothly. We actively supported cleanup efforts in local communities after the floods.



## **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.

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## Ren Zhengfei's Interview with The New York Times

September 9, 2019 Shenzhen, China

**Thomas L. Friedman, Op-Ed Columnist: I just want to first thank you. I've had a fantastic day here at Huawei with your team. I could write a book on what I learned this morning.**

**Ren:** This afternoon, please ask whatever questions you want. I will be very frank in my answers, including with any of your trickier questions.

**01 Thomas L. Friedman: I'm looking forward to it. I know you will be. Let's get right to business. As I have explained to your colleagues, there are two stories in the world right now. There's the US-China trade story and then there's the US-Huawei story. My view is that the US-Huawei story is more important than the US-China story.**

**Ren:** I am flattered.

**Thomas L. Friedman: US-China will figure that out, more soybeans, more Chinese goods. But US-Huawei, I think, is so important because of what Huawei represents. And I'll explain.**

**Ren:** Actually, we can also find solutions to the US-Huawei problem. For example, Huawei can buy more chips from Qualcomm and Intel, and buy more software suites from Google and Microsoft. We can also support the research of more professors from US universities

without asking for the results of their research in return. Doing this will help ease the conflict.

**Thomas L. Friedman: So let me ask, let's go right to that issue. To me, over the last 30 years, trade between America and China was mostly of what I call "surface things" and "shallow things"; the clothes we wore on our back and the shoes on our feet. What Huawei represents in wanting to sell 5G to America is not "surface trade" any more, it's "deep trade". You're the front end of China now, making many technologies that actually go deep in our streets, our homes, our bedrooms, and our privacy, and that is a new thing.**

**When it comes to the exchange of "deep things", we were able to sell China these kinds of "deep things" because you didn't have any other options. We had it and if you wanted it, you had to buy from Microsoft or Apple. But now that China wants to sell us "deep things". Because it's advanced technologically, the problem is we don't actually have the level of trust yet needed to be trading in "deep things". That's why, I believe, either we solve the Huawei problem, or globalization is going to fracture.**

**Ren:** Well first, we have no plans to sell our equipment to the US, so I don't really think there is such a deep-rooted contradiction between Huawei and the US.

Second, we have been more than open to sharing



our 5G technologies and techniques with US companies, so that they can build up their own 5G industry. That would create a balanced situation between China, the US, and Europe. This is something we have been ready to do, but the US side has to accept us at some level for that to happen.

**Thomas L. Friedman: So let's talk about that. That's a very interesting proposal. So, in that case, maybe a company like Cisco could license your 5G, the entire set of 5G production techniques and software. Is that the idea that an American company could license all of that and use Huawei's technology to build a 5G network on a kind of license basis, so then Americans wouldn't have to worry about Huawei spying on America?**

**Ren:** Yes. It doesn't have to be Cisco. It could be Amazon. They have a lot of money. Apple could do as well.

**Thomas L. Friedman: Interesting. Mr. Ren, that's a very important proposal. Has this proposal ever been made in public before?**

**Ren:** This interview is considered public, right? I guess you are the first to hear it.

**Thomas L. Friedman: So this has not been discussed with any American companies yet?**

**Ren:** No.

**Thomas L. Friedman:** So another question that we have is, would you consider listing Huawei shares on the New York Stock Exchange or the NASDAQ for transparency assurance?

**Ren:** What I just said has nothing to do with Huawei doing business in the US. It's about helping US companies use our technologies to do business in the US. Based on the 5G technology we provide, US companies can continue to work on 6G. They can also modify our 5G technologies to meet their security requirements. It is impossible to develop successful 6G without having 5G. Millimeter wave spectrum is too short for 6G, so it would be very difficult for US companies to build a 6G network without our technology. That won't happen for another 10 years though.

**Thomas L. Friedman:** Interesting, so if I were Amazon or Microsoft and I wanted to do this, I would pay Huawei like a licensing fee. Would that be the idea?

**Ren:** Yes. It would be even better if you hired me as well. I am good with a salary a bit less than Tim Cook's. I am always blown away by the high salaries executives have in the US.

**Thomas L. Friedman:** While we are on that subject,

**can I buy just one share in Huawei while I'm here?**

**Ren:** Not possible. You aren't a Huawei employee. Only Huawei employees can buy Huawei shares. We'd welcome you if you want to come on board though.

02

**Thomas L. Friedman: One of the things we'd heard was that Huawei was in talks with the Department of Justice about trying to settle some of the outstanding issues of the past. Do you think there's a deal to be had there? Are you in talks? Would you be ready to be in talks with the Department of Justice on these issues to try to clear up all the old baggage?**

**Ren:** I don't think we have had these kinds of talks, and we wouldn't proactively reach out to the US government. We instead will continue to follow the legal procedures. During that process, if the US reaches out to us in good faith and promises to change their irrational approach to Huawei, then we are open to a dialogue.

**Thomas L. Friedman: Let's talk about that for a second. When you say, "change their irrational approach", what specifically would be required?**

**Ren:** The US shouldn't try to destroy Huawei over something trivial. If the US feels we have done something wrong, then we can discuss it in good faith and find a reasonable solution. I think we can accept

that approach.

**Thomas L. Friedman: Open to a dialogue with the Department of Justice on those terms?**

**Ren:** Yes.

**Thomas L. Friedman: Some people say Huawei and Mr. Ren would be happy to settle, but Beijing won't let them?**

**Ren:** No. This is an issue about Huawei itself; it has nothing to do with Beijing. Beijing is not interested in these problems. Without 5G, there would be 6G; without 6G, there would be 7G. We see a long road ahead of us. With money, we can buy almost anything. We planned to sell our business to US companies, but they didn't want us.

03

**Thomas L. Friedman: So this is a sensitive question. They're all sensitive but this one in particular. Are you comfortable with the way that Beijing has treated two Canadians who are detained in connection with your daughter's situation in Canada?**

**Ren:** I cannot say whether these two cases are connected. My daughter is innocent and I'm not satisfied with her detention by the Canadian government. I don't really know about the relationship between the two countries.

**Thomas L. Friedman: You're not being consulted on it?**

**Ren:** Never.

**04**

**Thomas L. Friedman: One of the interesting things I learned today with Vincent and the team is, if Huawei were able to build 5G in America on a competitive basis with other countries, that it could save up to 240 billion US dollars in the buildout of 5G across America, if Huawei were there competing with its alternative. Talk for a minute, Mr. Ren, what America loses by not having Huawei compete to build our 5G infrastructure?**

**Ren:** I just said that I would agree to transfer our 5G technology to US companies. If that becomes a reality, the 240 billion US dollars you mentioned would go to those US companies, not us.

**05**

**Thomas L. Friedman: Mr. Ren, if President Trump were sitting here, and you got to talk to him directly about Huawei's situation and its aspirations for the American market, what would you say to President Trump?**

**Ren:** First, it's unlikely that he might be sitting here. Second, I think collaboration for shared success is the way forward in the future. I read your book, *The World Is Flat*. Globalization will lead to optimal allocation and utilization of global resources. For example, if

there is only one company that produces a component and supplies it worldwide, then there is no need to make repeated investments into the research of that component. This will translate into lower R&D costs. In addition, the global market is big enough to help bring down the cost of the component. If the product is both high-quality and affordable, it will contribute a lot to humanity. Actually, it is the US that put forward the notion of globalization in the first place. It was a very smart move back then, and they should stick with it.

When it comes to the security of the supply chain in the natural environment, no company would rely on only one vendor for a component, or put all their eggs in one basket. They may find alternative vendors. When there is an earthquake, fire, or when a machine breaks down, one vendor alone cannot ensure the security of the global supply chain. So a component needs at least two vendors to limit risks because it can help secure supply in the event of a natural disaster. However, this causes redundant R&D investments, halves the market share, and drives up costs.

If security is approached from a political perspective and there is a lack of mutual trust, the world would be split into two or even three different parts. Even the US does not dare to place all their bets on a single company. The reason why the US passed the Antitrust Act is that they wanted to have at least two players in

every sector in the US market and in markets outside the US. As a result, a company that used to serve the global market now only serves a quarter of it at most. And R&D expenses have quadrupled. This is a huge waste for our society.

Globalization is in the best interests of humanity. The US is best positioned in the tech sector. Everyone wants to buy chipsets from US companies. If US companies sell more chipsets, quality will go up and costs will go down. Then other companies will find it hard to compete with them. Microsoft Windows and Office are good examples of this. It's unlikely that we will see another vendor in that field.

**Thomas L. Friedman: If President Trump says, "Sorry, Microsoft, you cannot sell Windows to Huawei. Google, you cannot put Android on Huawei's phone. Intel, you cannot sell chips for Huawei handsets." What will Huawei do? Will it go out of business or develop its own version of Windows, its own version of Android, and its own chips?**

**Ren:** No matter which company decides not to sell a product, there will always be other alternatives. We should believe that humanity will not just die out. When there was not enough food, people ate wild fruits or even tree bark and survived, right?

**Thomas L. Friedman: Huawei will not die either. I**

**mean, you will survive this.**

**Ren:** As long as there is market demand, there will always be alternatives.

**06 Thomas L. Friedman: It seems Huawei has a lot of enemies. It has challengers in our intelligence community. They say it's a front for PLA spying. It has competitive enemies like Qualcomm and Cisco. All these companies are saying Huawei stole this and that. Is that just competitive jealousy? Is it just conspiracy theories? What are the things that Huawei has done in its rapid growth that it regrets now?**

**Ren:** You said the world is flat. Maybe not necessarily 100% flat, in my opinion. There are also bumps, and ups and downs. There may even be glaciers in between. From that perspective, Huawei is mentally prepared to embrace all the different ways people see us.

If you look at the history of China and also the development trajectory of the Chinese society, Huawei was born by accident. During the 10-year Cultural Revolution, China's economy stagnated and even went backwards to the extent that the economy was on the brink of collapse.

That was a time when tens of millions of young people had no jobs and were sent to rural parts of



China. After the Cultural Revolution ended, those tens of millions of young people looked to return to cities, causing much unrest in society. The central government agreed to have them come back to the cities where they originally came.

At that time, workers in factories did not have enough work to do, let alone extra jobs for those young people coming back. The country was concerned about the employment of these people because if they had nothing to do, it would only lead to social unrest and instability.

Then the government mobilized some businesses to set up labor services subsidiaries to work on stuff like cleaning. But still, there were not enough jobs for all of those young people.

Some people who could not find their way out started to sell big bowls of tea or steamed buns in street stalls. That's how China's private sector started, from those stalls selling big bowls of tea, steamed buns, and things like that.

The government then found this was a feasible way to create sufficient jobs. So they gave permission to these small private businesses selling noodles, steamed buns, and big bowls of tea. This was not the delicate tea like we are having now. Back then, they only sold big bowls of cheap tea under shabby tents in the street, a

cent or two each.

After some time, some businesses did quite well and grew bigger. But the central government issued a document saying businesses were not allowed to employ more than five or eight people; otherwise, they would be capitalistic. China's private sector was forced into existence, not planned.

Huawei was founded at that time. We had more than eight employees, and we operated under huge pressure. It was very difficult for us to add even one more person to the workforce, because we could not get licenses from the government of the Shenzhen Special Economic Zone.

However, as we often say in China, you cannot keep spring in just one garden. Since private businesses were more efficient, and their employees worked much more diligently, they grew very fast. In the end, the government acknowledged the private sector as a new economic form in China.

But that only happened after a long time of struggling with the old mindset. I would say it was only until recent years that the private sector got a legitimate social status in China. At that time, we were considered communists outside of China; back in China, we were considered capitalists, because people in China saw us holding corporate shares and thought having money

was a form of capitalism. Therefore, the challenges that we have encountered do not necessarily come from outside of China, but also from within.

**Thomas L. Friedman: One thing that strikes me in learning the Huawei story today and talking to your colleagues and listening to Mr. Ren now, is that you guys really had to fight your way to the top.**

**Ren:** You know, we have always had lots of cuts and bruises, so we're not that concerned to add several more.

**07 Thomas L. Friedman: When I talk to Chinese people, I find they're proud of Huawei. Are you like a rock star in China, Mr. Ren, when you go down the street or into a restaurant, like Steve Jobs and Bill Gates have been in the US?**

**Ren:** I actually think I'm quite a pathetic person. If I go out on the street, people will take photos of me. This means I have no freedom at all. I'm not like the pop stars in other countries, who have their own private jets and can go wherever they want for their holidays, and I cannot hide myself from the public. I can't even enjoy a cup of coffee on the street.

I'm actually afraid of holidays, because there is nowhere I can go. I could only choose to stay at home,

drinking tea, watching TV, or taking a nap. So holidays actually feel like tough periods for me. The mid-autumn festival is approaching, but I have no clue where I will spend those three days.

**Thomas L. Friedman: But what do Chinese people say to you on the street?**

**Ren:** They say, "Can I take a photo with you?" And then they post the photo on the Internet. I have very little privacy. Wherever I go, people spot me, take photos with me, and post the photos on the Internet. I often feel like a rat that can't find a hole to hide myself in.

08

**Thomas L. Friedman: So I want to go back to one of the hard questions. I had a senior American official say to me that Huawei has a little device, the size of a pin head, which can be installed on its PCBs or cell phones for the purpose of espionage, to create backdoors. This official said that we can't trust Huawei. He said to me, "Tom, if you only knew what I know, you would never buy a Huawei phone or use Huawei's 5G equipment."**

**Ren:** I would say that this is more like fantasy or science fiction. If Huawei was that capable, why would we sell 5G equipment? I think, for any company, there will always be some areas that are highly sensitive and closed off to journalists. But when The Associated Press came to Huawei, we gave them a lot of time to film

our entire exhibition hall, including the circuit boards of our new 5G base stations. We also allowed them to take photos of all our equipment. Huawei is a business organization. What is the point of Huawei developing a tiny device, like what you just mentioned?

**09 Thomas L. Friedman: It's very interesting. I've never seen a company that so many people had such strong and contradictory feelings about. "Great." "Love it." "Dangerous." "Espionage." Why is that?**

**Ren:** The world will always have two extreme positions on things. If those who call Huawei a great company said Huawei was actually a little squirrel missing its big tail, then those who currently call Huawei a dangerous company would stop saying so. The two sides compete with each other, making exaggerations and trying to see who can get more attention.

**10 Thomas L. Friedman: Who are your role models in technology? Bill Gates, Steve Jobs, Gordon Moore, Robert Noyce, or Jeff Bezos? Who are the people you look up to as role models?**

**Ren:** Since I was young, I've held great admiration for all those outstanding figures, including great scientists like Einstein and Turing. When I was young, China was

still quite closed, and I couldn't see much of the outside world. But I still admired them a lot, because they had created great development opportunities for humanity.

**11**

**Thomas L. Friedman: As we come to the limits of Moore's law, what's the next frontier for Huawei? 6G or basic breakthroughs in science and physics? What's the next mountain that Mr. Ren wants to climb?**

**Ren:** AI.

**Thomas L. Friedman: So what do you mean by that? Why and how?**

**Ren:** We are building a platform to support AI.

**Thomas L. Friedman: So this is a software platform, basically?**

**Ren:** Both hardware and software. On September 18, we'll announce an AI cluster that connects 1,024 Ascend chips. This will be the fastest and largest AI platform in the world. So we don't create all the AI applications ourselves. Instead, we will provide a platform to enable all of society to participate in the development of AI.

**Thomas L. Friedman: Are there other competitors around the world with an AI engine as powerful as Huawei's? Is Huawei catching up or is it leading in that area?**

**Ren:** Google and NVIDIA can do similar things. It's just that Huawei is currently doing this better.

**Thomas L. Friedman: What do you think AI will unlock in the next 10 years? What changes will we see with such a powerful AI engine? What will be its impact?**

**Ren:** Our production line can now turn out a complete premium mobile phone every 20 seconds with basically no manual operations. If you have time, you are very welcome to visit our production line.

**Thomas L. Friedman: What about the future? Would it take just two seconds to produce a phone in the future?**

**Ren:** I think it will be faster in the future. We will have more advanced manufacturing with even fewer manual operations. It won't be down to just two seconds though.

**Thomas L. Friedman: Incredible.**

12

**Thomas L. Friedman: When you look at America today, with our President saying, "No Huawei, nothing, you'll never eat in this town again", "We're going to pull American businesses out of China", "I'm going to win, you're going to lose." What do we look like to you?**

**Ren:** I think the reality might be the opposite of what you just said. The US might lose.

**Thomas L. Friedman: Why and how?**

**Ren:** If the US opts out from globalization, how would it win? The US is sitting at the top of the world with many cutting-edge sciences and technologies. It's like the snow on the top of the Himalayas. This snow creates value only when it melts into water, and then flows down the slopes of the Himalayas to irrigate the land at the foot of the mountains. The land can then produce harvests, and people can share in these harvests.

If the US blocks the snow water from flowing down the slope, those companies at the very top of the mountain will be left out in the cold. Their employees will have to feed themselves. If there is no water to irrigate the farmland at the foot of the mountains and they cannot share in the harvest, then how can they have enough money to buy, say, steaks?

The US has strong advantages in the high-tech sector. If the US does not sell its technologies to other countries, I think it's highly unlikely that the US will achieve a trade balance. If that happens, then how can US workers expect a pay rise?

**Thomas L. Friedman: Are we possibly facing, therefore, a digital Berlin Wall and an end to globalization?**

**Ren:** Possibly. If the US government continues its current approach, it's possible that a wall like this could come down between us. If that happened, US companies who



have dominant positions in the global market would see a reduction of their global market shares. They would probably be able to only maintain half of the market share that they hold now. As a result, they would have to slash their budgets and lay off employees. The lives of Americans will be made more difficult, instead of better.

**Thomas L. Friedman: So if Google can't sell Android and Microsoft can't sell Windows and Intel can't sell chips to Huawei, that won't be a small thing for American workers and companies. There'll be a huge impact.**

**Ren:** Indeed. They will have to reduce their operating budgets.

13

**Thomas L. Friedman: You've talked about AI and the next-generation technology businesses being a natural evolution of Huawei's business. Are there other businesses Huawei is interested in exploring in the future which don't follow this natural evolution?**

**Ren:** We don't have time or resources to solve other problems. Huawei's addition to the Entity List has caused a lot of holes in our businesses, and our priority now is to fix these holes. It's not a time for us to get involved in other businesses. Huawei is like a bullet-riddled aircraft with hundreds or even thousands of holes. We need to fix these holes, or we will be unable to fly back home.

14

**Thomas L. Friedman: So, on the Department of Justice, one last question, would there be any restrictions on what they could bring to the table to discuss? Or is it simply that you're open to talking with them about whatever is on their mind, you're saying, provided they come with a proper attitude? Just so I can clarify that.**

**Ren:** There are no restrictions on what we would be willing to discuss with the Department of Justice.

**Thomas L. Friedman: As long as they came with the right attitude?**

**Ren:** Yes, exactly.

**Thomas L. Friedman: I can't wait to get to Hong Kong and share this with the world.**

**Ren:** I think that once the information is shared, something will happen. You know, the US is in a leading position when it comes to AI. The US has the most advanced super computers and the most advanced storage capabilities in the world. But the two must be connected at high speeds. The analogy is this: On an ordinary road, once the vehicle arrives at the destination, it is already late.

**Thomas L. Friedman: And that's where 5G comes in?**

**Ren:** Yes. You either need fiber or 5G. And fiber and 5G are the very areas where the US is currently lacking capabilities. The US is placing hope in 6G. But even for

6G research, Huawei is leading the world. However, we do not think the commercial use of 6G will begin for at least another 10 years. I don't think the US can afford to miss out on the next 10 years of AI development. At the moment, the speed of evolution for AI is doubling every three or four months. So, everyone has to run very fast to catch up. Maybe by the time we catch up, I will have already died. But no matter what, society will continue to develop.

**Thomas L. Friedman: But what you're saying is that they can't run fast without Huawei right now?**

**Ren:** Yes.

**Thomas L. Friedman: I'm really excited to be the conveyer belt for what I think is a very important conversation. Thank you.**



## Ren Zhengfei's Interview with The Economist

September 10, 2019 Shenzhen, China

01

**David Rennie, Beijing Bureau Chief and "Chaguan" Columnist, *The Economist*: Mr. Ren, before we ask you questions about Huawei, we would like to ask you a question about globalization and about how technology is challenging globalization, because you're also a very important global business leader, and you now have big companies that are selling products and services that can only make sense in a world of a great degree of trust. You know, it's not selling tennis shoes or tennis rackets. It's selling an autonomous car or a medical device. So this globalization is now seeing trade in products that requires a lifetime of trust, at the same time as countries like China and America find it very difficult to trust one another. Can this problem be resolved? What is your view on how this problem can be solved?**

**Ren:** Please be straightforward in your questions. I will also be very frank in my answers.

Economic globalization can bring substantial benefits to all of humanity. This is because it will play a significant role in driving the optimal allocation of resources and reduction of service cost, thereby accelerating the pace of social progress. Economic globalization was a concept put forward by Western countries. Their guiding principle was to allow the West to trade their advanced technology and equipment for developing countries' raw materials and cost-efficient labor forces. This

enabled global trade. But the West did not expect that developing countries would slowly begin to move up the value chain with low-end production.

The West had a serious economic crisis in the 1960s and 1970s, brought about by conflicts between employers and employees. Some Western economists suggested higher pay, higher commodity prices, and higher consumption would solve this crisis. This theory worked well to address the West's problems for a while. For the next several decades until the end of the last century, their economy grew very quickly. Sustaining such an economic model requires very high yields though. Without high yields, it's going to be very difficult to ensure that you have enough wealth to distribute. Although developing countries created a massive market for Western countries to sell in, many products from these developing countries also entered developed markets. The clashes and contradictions that arose during the process are not an inherent problem with globalization, but occurred because of a lack of effective coordination between countries of these two different development stages.

Let me use the Europe-China relationship as an example to explain how we could possibly address this problem. China has made a commitment to the World Trade Organization (WTO) that it will significantly open up its service and manufacturing sectors. Over the last

two years, this opening up has been accelerating, even though it is still a bit behind the promised schedule.

The UK and Europe have accumulated hundreds of years of experience in the service sector. China has a huge demand for services. In this sense, if the export of large quantities of services is allowed from the West into China, it will facilitate the social advancement of China. In addition, the money earned by China from Europe through the export of products will return to Europe through the export of products and services, creating a more balanced economic situation.

Let's look at another example. China will reduce automobile tariffs to a very low level over the next five years. The UK and Europe produce the world's highest quality automobiles, while Japan produces the most cost-effective quality automobiles. Today, we need to address the problems arising from globalization one at a time, through consultation. There is nothing wrong with globalization itself. These problems are arising because the development mechanism has failed to adapt to some of the changes in our new environment and the different players involved are not sitting down to have good discussions about how best to coordinate on these problems.

Let's take Russia as another example. If Russia had been accepted as a member of the European Union,

I estimate that the trade between Russia and other Western countries would represent at least one trillion euros, because of Russia's energy exports and Western countries' machinery and equipment exports. These transactions would bring a lot of money into Europe, which would help Europe address the issues they are seeing related to increasing economic disparity.

I've had very good talks with George Osborne and David Cameron in the past. Back then, Osborne had already lowered the UK's tax rate to 21%, but these cuts didn't impact their national revenue. Why? Because the UK only allowed welfare to be distributed under certain conditions. To receive welfare, recipients would have to be actively seeking a job or make some form of contributions to community service, such as caring for the elderly or engaging in public health activities. The reduction in tax revenue equaled their reduced social welfare spending, and thus ensuring stability within the country.

Afterwards, Theresa May's administration announced that it would further lower the tax rate to 17%. All of these policies adopted in the UK are serving as the DNA for it to become an investment center again. All in all, this proves that different players have to keep adapting to the new globalized environment. A one-size-fits-all approach won't work.



This is my humble opinion.

02

**David Rennie: I know my colleagues have many questions about Huawei. The one country you have not mentioned is the US. So you have talked about Europe and Japan. They can see the economic globalization. When you look at the US-China relationship, are you worried about the future of globalization?**

**Ren:** Yes, I think China-US relations will affect the future of globalization. The US is the most powerful country in the world. It used to maintain order as the "policeman" of the world, and in return it was rewarded with the US dollar becoming the world's currency. The US collects seigniorage from the world by issuing US dollars. If the US continued to maintain world order, it would not stand to lose anything.

However, the US has destroyed this mechanism. People no longer believe that the US is trying to maintain order in the world, or that the US dollar is the most reliable reserve currency. When the world's confidence in the US and the US dollar starts to wane, the national debts and stock markets in the US will face crises, which will cause great economic and political turmoil in the US.

03

**Patrick Foulis, Business Affairs Editor, *The Economist*:** During 2019, US diplomats have made a big effort to persuade its allies not to use Huawei. Could Mr. Ren talk about how successful those efforts have been? Clearly it's focusing on its core allies like Britain and Australia, but it also looks as though countries like Vietnam have been put under heavy pressure not to use Huawei products. So how successful has the US boycott been?

**Ren:** First of all, it's perfectly normal for customers not to buy Huawei's equipment. In fact, many customers did not buy Huawei's equipment in the past. Most customers make their decisions based on commercial considerations.

When it comes to 5G, I think the US may be wrong to politicize 5G or treat it as something dangerous. Countries should make their decisions about 5G to facilitate their development rather than fulfil political agendas.

Let me give you an example. About 1,000 years ago, China was the most powerful country in the world. The prosperity depicted in the famous painting "Along the River During the Qingming Festival" was not made up; it was real.

Several hundred years ago, the philosophical thoughts and social systems in the UK led to the Industrial

Revolution. The British invented the train and steamship. However, China continued to rely mainly on horse-drawn carriages for transportation. Those carriages travelled at much slower speeds than trains, and they could carry far less cargo than steamboats. That's why China was left behind.

The UK became an industrial powerhouse, and managed to sell its products all over the world, hugely impacting social progress in many countries. Today, about two-thirds of the world's population speak English. With this example, I want to say that speed determines social progress.

5G is a connectivity technology that delivers high speeds, high bandwidth, and low latency. 5G represents speed in the information society. Countries that have speed will move forward rapidly. On the contrary, countries that give up speed and excellent connectivity technology may see economic slowdown.

The British are very intelligent, and British universities are among the best in the world. If the UK wants to make a comeback in industry, it needs speed in the information society.

Optical fibre networks and 5G technology that is based on optical fibre networks will connect supercomputers and super storage systems to support AI. If AI is able to increase productivity by ten-fold, then

the UK will become an industrial power with a workforce equivalent to hundreds of millions of people. When I say AI can increase productivity by ten-fold, this is just an estimation. The truth is that in some rare cases, with the aid of AI, efficiency can increase by 100 times or even 1,000 times.

Alan Turing, the father of AI, was British, as was the scientist who cloned Dolly the sheep. I simply cannot imagine what the world will be like when genetic and electronic technologies come together. I believe the UK has enormous potential for revitalization. Speed will determine whether the UK can be successful again.

**04**

**Patrick Foulis: Could I ask some questions about Huawei in the last few months and the implications of the American actions against the company? So the first question is, could you talk about the financial performance of the business since May when the Entity List began? Have you seen a drop off in your revenues?**

**Ren:** Our revenue has grown by 19.7% by the end of August, while our profits were similar to last year's. Our growth rate has declined from about 30% in the beginning of the year, to 23% by the end of June, and now down to 19.7%. Our profits didn't increase largely due to a significant increase in our strategic investments.

We have recruited a few thousand more employees worldwide, mostly high-end talent like young geniuses and fresh PhD graduates, to help patch our holes caused by the Entity List.

We have patched our holes in our network business, from 5G to core networks. On September 18, we will announce an AI cluster that connects 1,024 Ascend chips. This will be the fastest AI platform in the world.

Currently, the Entity List still impacts our consumer business, and it will take some time to patch our holes in this area.

**Patrick Foulis: Can I ask, so if you look at the consumer business now and just take a snapshot, is it declining? Is it shrinking outside of China?**

**Ren:** Our smartphone sales once declined in markets outside China, but the rate of that decline is now decreasing, now at around 10%.

**05 Patrick Foulis: Later this month, I think you'll be launching the Mate 30, the new handset. At the moment, will it have Android and Google apps available on it? What's the latest on that?**

**Ren:** The Mate 30 series won't have the Google Mobile Services (GMS) ecosystem pre-installed.

**Patrick Foulis: That leads to my next question. If you**

**launch a handset that doesn't have the full suite of Google apps on it, is it correct to think that the volume you sell outside of China will be much lower than in the past? And following from that, does that suggest that the company faces quite a big financial hit in the second half of the year, in the fourth quarter?**

**Ren:** We would like to continue using Android, because we remain on good terms with Google. Even if the US government won't allow us to continue using Android, we have our alternatives. It will take us two to three years to replace Android with our own system, during which time our phone sales in markets outside China will see some decline. We think it is understandable. Our smartphones have their unique features in addition to ecosystem applications, so we believe there will be many more customers who will like and accept our products. We will launch the Mate 30 series in Munich on September 19, and you can find out what features they will have then.

**Patrick Foulis:** **Over this period when you may have to roll out your own system, do you think it's possible that a company can be pushed into making a loss?**

**Ren:** No, our growth will slow down, but we won't see losses.

**Patrick Foulis:** **If I was running Google and Huawei ends up pushing its operating system out globally, how**

## worried should I be?

**Ren:** Google is trying to persuade the US government to allow us to use their ecosystem. In this regard, we are willing to work with Google. Our operating system wasn't initially intended for smartphones. Moreover, Google's operating system is open source, so we can continue to use it. The US limits our use of Google Mobile Services, GMS. That ecosystem includes thousands of partners, and Huawei wouldn't be able to build a comparable ecosystem in just a couple of days. If the US government allows us to continue to use Google's ecosystem, the US would maintain its dominant position in this field. If the US government refuses to grant the license, it will hurt them in the long run.

06

**Patrick Foulis: Part of your job is to try to rebuild trust. Are there some radical options open to the company that tries to rebuild trust? For example, welcoming a foreign investor or perhaps even selling parts of the 5G business operated outside of China. Could Mr. Ren talk a bit about the radical options of changing the structure of the company that might help rebuild trust?**

**Ren:** It's unlikely that we will consider introducing external investors, because they often focus on profit. For Huawei, we put our aspiration above profit. Would we license our technologies to Western countries? Yes. We

would even be open to licensing all of our technologies. Our aspiration is to "serve humanity and achieve the pinnacle of science". Collaboration is consistent with our values, so we are willing to license our equipment to Western countries.

**Patrick Foulis: Would this be a sale of the business, perhaps, the 5G business in some geographies, or licensing the technology to other manufacturers? Perhaps you could elaborate.**

**Ren:** We can license technologies and production techniques. Whoever gets the technologies can develop new things based on them.

**Patrick Foulis: Would Huawei employees and facilities be transferred to the new owners or just the intellectual property?**

**Ren:** We would most certainly not transfer our employees. It would just be the technological know-how.

**Patrick Foulis: Who do you think would be the partners? What kind of companies in America, for example, might be counterparts?**

**Ren:** I haven't had any of this kind of discussion with anyone else yet, so I have no idea.

**Patrick Foulis: Many people in Silicon Valley and in America will read this article, so this is the chance to explain to them the plan.**



**Ren:** Right. I hope this article can help clear up some conflicts.

**David Rennie:** Both Mr. Foulis and I were based in America for many years. So more than half of our readers live in America. So if you're telling the American political world and the business world that you understand trust is a very important question, some American politicians really say, "I'm not interested in hearing about this piece or that piece of Huawei technology." They have a bigger problem: Why would you let a Chinese company build something as sensitive as 5G? So the political problem that you have in America is very hard to solve. Could you just explain a little bit more how big a transfer you could imagine? How big a solution are you thinking about to solve this problem? How radical a transfer of 5G technology?

**Ren:** If we transfer all our technologies to the US, then they can modify the code themselves. Neither Huawei nor anyone else in the world will be able to access these technologies anymore. The US will have independent 5G. Security won't be an issue as long as the US can properly manage its own companies. Then it will not be about us selling 5G in the US, but rather about US companies selling their own 5G in the US.

**Hal Hodson, Asia Technology Correspondent, *The Economist*:** Mr. Ren, would you envisage Huawei

**competing with this hypothetical new entity in 5G technologies, outside of China, obviously not inside the United States, but in Africa or parts of Europe? Would you imagine competing with this new entity or how would that work?**

**Ren:** Huawei can compete with new entities in those markets as well.

**Stephanie Studer, Senior China Business Correspondent, *The Economist*: Is that a ballpark figure, Mr. Ren, on how much this sale would cost?**

**Ren:** I don't have a number right now. This was just brought up, and I haven't done any calculations yet.

**Stephanie Studer: Not even a range?**

**Ren:** No, but we can talk about the range of technologies.

**David Rennie: Politically, would it be better to have an American partner for 5G, or a European or Japanese partner? Or do you think your problem is American, so you should look for an American company willing to buy your 5G technology?**

**Ren:** It depends on how big a market the potential partner would be able to carve out. If they could only capture a little market share through the purchase of our technologies, then that wouldn't be worthwhile. Such a deal is only feasible when they can anticipate

a large market share using our technologies. This is an evaluation process our potential partners will have to go through.

**Patrick Foulis: What would be the time horizon for a radical project like this? Would it take a couple of years to achieve or could it be done quickly?**

**Ren:** Pretty quickly.

**Patrick Foulis: Before the 2020 election, perhaps?**

**Ren:** This has nothing to do with the US general election. When I talk to you all, the general election is never a topic.

07

**David Rennie: Can I ask you another political, kind of cultural question? When I worked in America, many very important American politicians would say, "China is rising very fast, but America has a magic weapon. Its magic weapon is it's a democracy and we have freedom of speech, and our university students are free to study and think whatever they want. China is an autocratic country so they cannot achieve real innovation." Now, people look at China and companies like Huawei are innovating. The Chinese political system is a one-party system, where students cannot see everything on the Internet and cannot read any book they want. Does that impose any limit on Chinese**

**innovation or creativity? Is there an advantage to being a democratic country in the field of innovation?**

**Ren:** Academic freedom is the foundation of innovation. The freedom to have different academic ideas and to study whatever you want is very important. Undoubtedly, the US has the world's most innovation-friendly environment. Thanks to the Internet, people have easier access to information. Science and engineering papers have nothing to do with ideology, so they can be published and shared all over the world.

For example, the very source of 5G technology is a mathematical paper written in 2007 by Erdal Arikan, a Turkish mathematics professor. Two months after he published the paper, we read it. Then we put a lot of work into researching the paper and turned it into today's 5G standard.

China still has an inclusive environment when it comes to science and technology. On top of that, Huawei has a large number of non-Chinese scientists. We are doing our best to take in the nutrients of the times we are in, so we can move forward faster.

**David Rennie:** Clearly on the Internet you can see scientific papers, but there are also large parts of the global Internet that talk about politics, that talk about history, that are not available inside China to most people, because the Chinese government closes that

**off. You have built this beautiful campus in Dongguan, full of beautiful European buildings. Do you also make sure that your designers and your researchers have VPNs so that they can see foreign news or foreign politics to look at big important questions that are not available to Chinese people?**

**Ren:** If our engineers became politicians, Huawei would have collapsed. Engineers should focus on developing good products. They don't need to read about politics. What's the point of them caring about political issues? If our engineers are all out protesting, who is going to pay them?

**David Rennie:** To ask on that point, there was a famous speech that Deng Xiaoping gave in March 1978 about science in China, and he said exactly that it was time to allow scientists to do science and not to ask them to read too many political essays or to study politics. When I talk to professors at Chinese universities, they complain that the pressure now is to study Xi Jinping's thoughts and to study a lot of politics, and they feel that the time to think is being limited. You're a private company. Do you feel pressured to have your scientists studying politics, or do you protect them, like Deng Xiaoping said, from studying politics to let them focus?

**Ren:** I was there when Deng Xiaoping made those remarks at a national science conference. I was one of

the 6,000 representatives, and I burst into tears when hearing his speech. Deng said we should spend five days at work and one day for political studies. Back then, Chinese people worked six days a week, and too much time was spent on political studies. We were very happy that we could spend five days a week at work. I have always believed that politics should be done by politicians, and engineers should focus on technology. Engineers who don't understand technology aren't worth their wages.

**David Rennie: You are a Party member, and party members now have an app for studying Xi Jinping's thoughts on their phones. Do they worry that some people in the Chinese Communist Party are forgetting the wisdom of that speech in 1978, and they now want engineers and busy people like you to spend maybe an hour or two every day studying politics?**

**Ren:** President Xi's speeches cover a lot of areas, such as agriculture, healthcare, and rural development. These topics are not strongly related to us. As we are a technology company, we mainly study his speeches about science and technology development. Of course, those who work for the Party or government or those who want to become party or country leaders may need to spend more time learning about all those areas.

I listen to President Xi's speeches. In his speech at

the Boao Forum for Asia, he spoke about China further opening up to foreign investment. When it came to his speech at the China International Import Expo in Shanghai, he talked about reducing tariffs for vehicles. These speeches contain his instructions, and we are pleased that our country continues to develop under these instructions. The tax for small and medium-sized enterprises in Shenzhen has been significantly reduced, and low-income workers such as taxi drivers no longer need to pay income tax. This is a lesson learned from Hong Kong. China Central Television broadcasted lessons learned from Hong Kong. Caring about poor people's lives is one such lesson. We should provide poor people with accommodation. If their lives are up to a certain standard, there is a much lower chance they will cause problems. Even if a small number of people do stir up trouble, they will have few supporters. These points are also part of President Xi's thoughts, which I saw on TV.

**08**

**David Rennie: Just on the question of Hong Kong. We recently saw that a private company, Cathay Pacific Airways, was forced to change its senior leaders and some employees for reasons that are 100% political and related to the protests in Hong Kong. When you see the Chinese central government using its strength to make a private company take political decisions, does that make life more difficult for every private**

**company in China, when you want to tell foreigners that you are not controlled by politics? When they did that to Cathay Pacific, did they make your life more difficult?**

**Ren:** The issue in Hong Kong has been caused by extreme capitalism. Large capitalist institutions have made enormous amounts of money, and they even control many newsstands, underground garages, and coffee shops in Hong Kong. They have gained a lot of benefits, but the general public don't have much money, and many have fairly low living standards.

I saw the notice issued by Civil Aviation Administration of China (CAAC) in relation to Cathay Pacific. This notice said that some pilots and cabin crew members who worked for Cathay Pacific had been involved in questionable activities related to the Hong Kong protests. So CAAC had concerns about these pilots. That's why CAAC asked Cathay Pacific to regulate and control its flights to the Chinese mainland. I think CAAC's action makes sense, because it was taken to ensure aviation security. In addition, there have been no such limitations to Cathay Pacific's flights to other places.

I personally believe the Chinese central government has acted sensibly in dealing with Hong Kong. China adheres to the "one country, two systems" principle. The system in the Chinese mainland and the system in



Hong Kong are different. Demonstrations, protests, and shouting slogans are allowed in Hong Kong, but I do not think violence is appropriate.

The Chinese central government still hasn't taken any action in Hong Kong. If the current situation in Hong Kong continues, business, finance, and tourism in Hong Kong will be affected, and it will be more difficult to address the issues with the poor there.

A lesson we are learning from the current situation in Hong Kong is that the divide between the rich and the poor shouldn't be too large, and extreme poverty should be eliminated.

The Chinese central government has made great efforts to eliminate poverty. In recent years, I have personally travelled through several provinces along the Chinese border, such as Xinjiang, Tibet, and Yunnan, places previously known for being very poor. From what I saw, the living standards of the people there have improved a lot, especially in Tibet. Tibet has improved faster than Xinjiang, and both places seem to be enjoying much stability. I didn't know the real situation there until I had gone there and seen how people's lives had improved with my own eyes.

I think more foreign journalists should also be able to visit these places. I have been to some of the most poverty-stricken areas in Yunnan, Guizhou, Tibet,

Xinjiang, and other regions, and I don't think a color revolution will happen in China.

**09**

**David Rennie: One last quick question about politics. So many interviewers have asked you about your daughter Meng Wanzhou in Canada, but there are also two Canadian citizens currently being detained in China, and the Chinese foreign administration has said that the detention should be a lesson to the Canadian government. We know that because the Canadian embassy said these two Canadian detainees, one of whom is a former diplomat, are not allowed to see their family or make any phone calls. They have not spoken to anyone except some Canadian diplomats. They were allowed a book, and then they had their glasses taken away, so they can't read a book. I'm sure people have described the situation to you. Do you think that the conditions of these two Canadian detainees, Michael Kovrig and Michael Spavor, are appropriate conditions, or do you think that the Chinese government should give them access to a lawyer? They have no access to a lawyer or access to their families. But your daughter has access to a lawyer and access to her family, and can travel around Vancouver. But they are locked up in an unknown location with no access to lawyers. What do you think of the conditions of the detention of the two**

## Canadians citizens?

**Ren:** I don't know anything about these two individuals. I don't know how the government deals with such cases. I only know Meng Wanzhou has not committed any crime. Her arrest was wrong from the beginning, and her case needs to be addressed according to the law. No one has told me anything about the situation you just mentioned, because they would have no reason to. I also have no channels to get that kind of information.

10

**Hal Hodson:** Huawei is one of the biggest infrastructure companies in the world. And surely over the last 20 years, it has become larger and larger, and has been the target of intelligence agencies. I'm not just talking about backdoors, but in terms of infiltration, and in terms of operational security. Can you tell us a bit about how Huawei approaches operational security and how much you spend on counter intelligence?

**Ren:** First of all, at Huawei, cyber security and privacy protection are the company's top priorities. Huawei resolutely incorporates requirements of the EU's General Data Protection Regulation (GDPR) into all of our business processes. We are now investing heavily to upgrade existing networks and build new networks.

Second, for more than 30 years, Huawei has provided network services to over 1,500 carriers in more than

170 countries and regions, serving approximately three billion users. We have maintained a proven track record in security. In fact, we have never had any major security incidents.

Besides, we are more than willing to submit ourselves to strict oversight in countries where we operate. At present, the UK has conducted the most stringent oversight of Huawei. Why is the UK determined to continue using our equipment? Because they still trust us despite the few problems and flaws they have found with our equipment. They may even trust us more than other suppliers because we have been more rigorously reviewed.

**11** **Stephanie Studer: Mr. Ren, one of the other pioneers of China's technology sector, Ma Yun of Alibaba, retires today, September 10. When he announced this last year, he was the great exception in handing over the reign. As I'm sure you know, many other Chinese bosses don't do this until too late to the detriment to their companies. What do you think the costs and benefits would be to your retirement? Do you think it could be an expedient to have an earlier one, given the current political climate that Huawei finds itself in?**

**Ren:** I will retire when my thinking slows down. Currently, I still have many creative ideas, so I will

continue working for some time.

**Stephanie Studer: How soon do you think that retirement might be?**

**Ren:** I don't know. It depends on the circumstances.

**12 David Rennie: Have you seen the American documentary called "American Factory"? If you have seen it, did you get any ideas about the difference between American and Chinese ways of working?**

**Ren:** I heard this was produced by Obama. Someone described it to me, but I have not seen it yet.

**13 Stephanie Studer: You spoke earlier, this rather bold idea you had this morning, to sell the core of your business really. I imagine by that you mean 5G, and you would continue to work on 6G, the next generation. So could you tell us more about what motivates you to do this? Because I imagine that it might just be pushing the problem down the road. Your 6G may be also not accepted when it is up and running globally. So how does this help you exactly? What would be the main reason for doing this?**

**Ren:** I'm talking about licensing our 5G technology. Licensing 5G to others does not mean that Huawei would stop working on 5G itself. We hope that the

speed of technological development in the West can increase, so we are looking at the licensing of all our 5G technology to help facilitate this process. I think Huawei will continue to take the lead when it comes to 6G research, but our judgment is that the commercial use of 6G won't begin for at least 10 years.

Therefore, transferring 5G technology to other companies does not mean we will stop working on it. Instead, the money we get from this transfer will allow us to make greater strides forward.

**Patrick Foulis: Just to be clear, it's not licensing in the sense that there's an annual payment, like what Arm does. It's a one-off transaction which gives the buyer the permanent right to use the technology and intellectual property.**

**Ren:** Yes. It is a one-off payment.

**Patrick Foulis: What do the executives of the company think about this plan? I'm not sure you had a chance to discuss it but would they be shocked to hear that you are preparing to do something so dramatic?**

**Ren:** I don't think they would be shocked. Because for Huawei, we hope to see a balanced world. A balanced distribution of interests is conducive to Huawei's survival in this world. This same concept was put forward by the UK more than 100 years ago.

**David Rennie:** You sometimes use this very powerful image of the old Soviet airplane that is still flying with many holes. When I hear you talking about your thinking about 5G, it is a bit like an airplane pilot who is worried about going down so you maybe throw something heavy out of the airplane and you can keep flying. Does that reflect your thinking?

**Ren:** No. Licensing 5G to other companies would allow Huawei to get some money. It's just like adding more firewood to fuel our scientific research efforts.

**Hal Hodson:** Mr. Ren, do you think that the US business and political community has what it takes to take this 5G IP package and make it a global competitor to Huawei?

**Ren:** I don't think so.

**Hal Hodson:** So just a nice gesture then?

**Ren:** Yes. But if the US wants to buy from us, we will be serious about pursuing that option.

**Hal Hodson:** So you see it as creating a fair technological race and giving up your lead and resetting the clock if America will go for it?

**Ren:** Yes, that's right.

**David Rennie:** Thank you very much for your time.

**Ren:** Welcome to see us often. If you want to know if Huawei can survive, you can come and see us at the same time next year.



## Ren Zhengfei's Interview with Fortune

September 19, 2019 Shenzhen, China



01

**Alan Murray, CEO, *Fortune*: Thank you very much for taking the time to meet with us. We really appreciate it. I think the main question I have, which relates to your picture here, is whether this reflects a kind of a short-term bump in the globalization of the global economy. Or do you think we are heading towards some kind of decoupling that's going to profoundly change the way the global technology economy works in the future?**

**Ren:** When we use this picture to symbolize our situation, there are not such profound implications. We just feel as though we've been riddled with bullet holes since the US added us to its Entity List. If we can't patch up these holes, our "aircraft" may not be able to land safely. Still, we remain an advocate of globalization. Patching up these holes won't stop us moving forward along the road of globalization. We are still waiting for the US Department of Commerce to approve requests from US companies, allowing them to continue supplying us.

The longer this process drags on, the more harm it will cause to the US. The US is the world's most powerful country in terms of science and technology, but US tech companies need a global market. If the US heads towards decoupling its tech from the rest of the world and creating a digital divide, that would be a blow

to its leading companies. Take Microsoft as an example. This company has established its dominance in the global market through Windows and Office. But if the US government doesn't allow certain markets to access Microsoft's products, alternatives will appear in these markets. This will then eat into the shares of this leading company.

When you pull out of a market, you leave your market space to emerging companies. It's like grass. Without the weight of a stone, grass grows even more happily. Therefore, from this point of view, it makes sense if an underdeveloped country chooses to back away from globalization and gives up on certain markets. But if a developed economy does so, that's not a smart move.

I have always been a firm supporter of globalization. Once the US corrects some of their ideas, we may slow down the speed at which we are patching up the holes in our "aircraft" or simply stop flying even after we have fixed these holes. We will be willing to do so if it is in the best interests of our US partners.

**02**

**Alan Murray: And what about in the other case? What if Huawei remains on the Entity List, and then US companies can't sell to Huawei? Obviously, it hurts in the short term, but if you look five years, ten years**

**down the road, what effect will it have on Huawei?**

**Ren:** In the short term, it won't have a substantial impact on us. We don't need US components at all in our 5G and core networks, which are what the US is most concerned about. It will only affect our consumer product ecosystem, but we believe that impact can be mitigated within the next two to three years.

**Alan Murray: By building your own ecosystem?**

**Ren:** Yes.

**Alan Murray: And is it possible that in the long run, you'd be better off to go that direction and have your own ecosystem?**

**Ren:** In the long run, it might be a good thing for us. As Huawei grows larger and larger, our fate will be increasingly not up to us. This makes us uneasy. We firmly embrace globalization, but how can we survive? To survive, we'd better build our own ecosystem. Meanwhile, we will not turn away from ecosystems built by others, and will instead support them. We have signed agreements with some companies, and we will continue to work with them if circumstances permit.

The US was among the first to propose globalization, but now it is also the US that breaches the rules of globalization. I have always been pro-US, and have tried to temper our employees' impulsiveness. Recently,

I signed off something for our Business Process and IT Management Department. In that document, I encouraged them to use American, European, and Japanese bricks to build our Great Wall. I have done everything I can to make sure our employees don't try to go it on their own for our internal IT management platform. Doing that is not only costly but a huge burden to us.

**03**

**Alan Murray: You made an extraordinary offer the other day to license your technology, for the first time, I think, to someone in the US in order to allay security concerns. I'm curious about two things. One, has anyone suggested they will take you up on it yet? And two, do you think anyone will take you up on it?**

**Ren:** I would like to start by explaining why I made this offer. We think there should be a balanced technology ecosystem between the US, Europe, China, Japan, and South Korea. This technology ecosystem is different from the Google ecosystem. We are entering an era of artificial intelligence (AI), but the US has fallen behind in the rollout of Fiber To The Home (FTTH) networks. If the US also lags behind in 5G, it might lose its leading position in AI.

So first, we are willing to license our 5G patents to a US company following the fair, reasonable, and

non-discriminatory (FRAND) principles. Second, we are open to licensing our proprietary 5G technologies, including the whole suite of 5G network technologies and solutions, such as software source code, hardware design, manufacturing techniques, network planning and optimization, and testing methods. We are willing to license all of these technologies without reserve to a US company. By doing this, American, European, and Chinese companies will be able to run from the same starting line and continue to compete on new technologies. Third, the US can either choose to use general-purpose chips that they make themselves or "American chips + Huawei chips" to power their 5G base stations. We are also open to licensing our 5G chipset technologies.

This is in the best interests of Huawei. By doing this, we can allay international concerns while simultaneously enhancing the strengths of our competitors. If our competitors were not strong enough to compete with us, we would begin to decline. Therefore, we are rather open in this regard. We think the information market will be huge in the future, and that there is a lot of room for further development. The market size will be large enough for several big companies and tens of thousands of small companies to compete and provide services. When Huawei takes a dominant position in too many fields, it may also be closer to collapse.

**Alan Murray: "When Huawei takes a dominant position in too many fields, it may also be closer to collapse." What do you mean by that? Could you elaborate on that?**

**Ren:** There are numerous examples of this in history. Dynasties waxed and waned. When a nation is at its prime, it becomes the target of others. Take the swimmer Michael Phelps for example. He won many world champion titles, but eventually stopped. Athletes around the world set him as a goal post and tried their best to beat him in terms of swimming techniques. How could Phelps continue to win gold medals in face of that? We had been on the brink of ending up like that before Trump launched his campaign against us.

**Alan Murray: So Trump did you a favor?**

**Ren:** Yes. He pushed Huawei to change. For one thing, our technology is advanced, so it is not that difficult for us to win contracts. Our employees in local offices might not have to work hard to get their work done, and they can slack off after winning contracts with customers. This can breed laziness and eventually undermine the whole company. In addition, our headquarters have been scaling up, and our office environment has been improving. Employees could easily get paid, even if they were just tapping away on a keyboard to handle some very simple processes. If it were that easy, we wouldn't

have anyone willing to work in hardship countries and regions. The revenue of our regional HQ in Dusseldorf hasn't increased much, but the number of employees has increased several times over. When Trump launched his campaign against Huawei, we keenly felt a threat to our very survival. For our employees, that means if they don't work hard, they might get replaced. This applies to our senior managers as well. Over the last year, Huawei has been revitalized. Everyone is working hard.

**04 Alan Murray: So back to the offer, have you had discussions with American companies about this licensing idea?**

**Ren:** This is a major issue. It's not something that will be decided overnight. There are many big players in the US reaching out to us about this.

**Alan Murray: You must have had a company in mind when you made that offer. What company would it be?**

**Ren:** First of all, it should be a large company. If they bought the license for this technology but couldn't carve out a big market, it wouldn't be a good deal for them.

Second, there is no geographical limitation on which markets that company can sell. It can sell in the US market or any other market on this planet, including China. Maybe not on Mars, the moon, or the sun. Then

we can fully compete with each other.

Third, that company needs to have some expertise in communications and come from an industry similar to Huawei's. It can modify the source program or the source code of the technology we offer, so that it becomes a totally independent system from ours. Then the technologies used in their system will be unknown to Huawei. Perhaps this approach could help alleviate the national security concerns of the US.

Before they've finished making the modification, we can share in real time Huawei's technological advancement with them in a very transparent way. This will ensure they can keep pace with our technological advancement.

After they've finished modifying our technology to the point that Huawei no longer knows what's in their system, Huawei will continue to work with that company for the next 10 years. We will be sharing the concepts of Huawei's own progress with them.

We are very sincere in our offer for this technical licensing arrangement and will do it in good faith. We will not hide anything or keep any trade secret to ourselves. We will be open and transparent to the potential licensee. This is not because we are stupid, but because we want to create a strong competitor for Huawei's 190,000 employees to stop them from



becoming complacent.

**Alan Murray: I think this is unprecedented. I can't think of anything like this in my 40 years of covering business. I think some people would say it's crazy, and because it seems so crazy, they might question your sincerity.**

**Ren:** Now I have the whip in my hands to urge Huawei to move forward. In the future, I'll hand it over to a US company. When the US company becomes a strong competitor, it will push our 190,000 employees to always be on their toes.

**05 Clay Chandler: When you were asked whether you had a particular company in mind when you made this licensing offer, you listed a series of conditions. But it leaves me wondering: What are the subsets of companies that would meet those conditions? Can you name some companies or people who would be worthy partners for Huawei in this endeavor?**

**Ren:** I don't think it is appropriate for me to name specific companies because that would be an offense to them. But I believe there must be one US company out there that is ambitious enough to seize a dominant position in the global market. If there are speculations in the media, that's out of my control.

**Alan Murray: Who should they call if they're interested in this extraordinary one-time offer?**

**Ren:** They can call anyone at Huawei, because they will definitely get transferred to top management. They can get in touch with our PR department or send an email to me.

**Alan Murray: May we print your email address?**

**Ren:** Of course!

**Clay Chandler: OK, I will print this and see what comes in.**

**Ren:** You have my support.

06

**Clay Chandler: And what about the regulatory complications of this arrangement? Have you thought through whether there might be some government opposition or reservations about this arrangement? And have you heard anything from the US side?**

**Ren:** No, I don't think there will be any regulatory complications. Some people in the political community in the US will pay attention to this offer. This is purely a business transaction, so I don't think it's necessary for it to be approved by the Chinese government. We are not selling all of our technologies. We are just planning to license our 5G technology to a US company, but will continue to build our 6G on this technology. The US

company to be licensed can also develop their 6G on the basis of this technology. Then we can compete with each other on equal footing.

I don't think it's necessary for the US government to approve the transfer, either. 5G base stations are a completely transparent system, where data packages are not opened and are just directly transmitted to other parts of the network. Security issues that people often talk about are about the core network, which is software-centric. Many US companies have the ability to develop core networks. If the US needs Huawei's core networks, we are also open to licensing related technology. As I just said, we're even open to licensing our chipset technology.

So this is a very transparent model. After a US company gets our technology, they can modify it as they see fit and build an independent security system that Huawei has no access to. We'd then have no idea what changes they make.

In the future, we will be entering a world of AI. However, it will continue to be based on the architecture put forward by John von Neumann, a great US scientist. He put forward this brilliant architecture in 1946. This architecture is about supercomputing and mass storage, and the US leads the world in these two areas.

However, supercomputing and mass storage require

super-fast connections. If the US does not use the best 5G technology, a lot of advanced AI technologies will not be widely adopted in the country. As a result, the US might fall behind in the future. When that happens, some people in the US will attack whoever is in the lead, and it's possible that Huawei will become targeted again.

To avoid this situation, we'd rather help the US address the issues they are currently facing regarding super-fast connections. By licensing our 5G technology to a US company, we'll be running from the same starting line. I would rather have that US company outpacing Huawei so that we can sustain our success.

**Clay Chandler: I just want to confirm that this is an offer that is extended only to American companies, and that it's not something you would consider if a European company would come forward, or Japanese company, or perhaps, even a South Korean company, saying, "Yeah, it sounds great, we're interested."**

**Ren:** Europe has its own companies, so they don't need this offer. On top of that, the US is a relatively large market.

**Alan Murray: Cisco? Are you okay with that?**

**Ren:** I'm okay with that. Why are we so sincere in making this offer? It's because the US is still moving in the wrong direction on many future technologies. I want

to tell you a few stories.

At one time, the telecommunications standard that Germany chose was ISDN. With ISDN, the data rate was only 128 Kbit/s. When the German market was saturated and a German telecom vendor wanted to expand its business to the global market, they suddenly realized that the world had changed and ISDN was no longer needed. Today, the world has evolved further towards GPON. With this standard, homes can have data speeds of up to 1 Gbit/s or even 10 Gbit/s. This is one reason why this German company declined.

To prevent foreign telecom vendors from entering the Japanese market, Japan used the uplink frequency for downlink and the downlink frequency for uplink, which was the reverse of the global standard. Then when the Japanese market was saturated and Japanese vendors sought to expand in the global market, they found that their equipment could not be accepted. And as a result, Japanese telecom vendors also declined.

Now let's look at the then three major telecom equipment vendors in North America: Lucent, Nortel, and Motorola. They pushed the world to accept CDMA and then WiMAX, because they believed that WiMAX was a great technology. As WiMAX was designed by computer companies, this technology worked perfectly in local area networks but not in global networks.

These companies started in home networks with WiFi and aimed to build a global network with WiFi as well. European and Chinese companies all chose WCDMA and worked on wider area networks before extending their reach to home networks.

As it turned out, US companies chose the wrong path, because WCDMA turned out to be the global communications network standard. And after that, US telecom vendors collapsed. Only European and Chinese companies are still standing. The collapse of US companies was not because of the rise of Huawei.

I'd like to tell you another story. Japan had the strongest expertise in the electronics industry in the 1970s and 80s. They made a lot of money and were purchasing many properties in the US. Then, in the 1990s, the US used digital circuits on a large scale, getting a higher yield rate than that of the analog circuits which used operational amplifiers in Japan. Operational amplifiers required very stringent linearity, resulting in a yield rate of only about 5%.

But the US was designing products with digital circuits, meaning the yield rate for their chipsets was over 33%. The US staged a comeback in the electronics industry. Of course, the yield for chip fabrication today is higher than 99%. The same is true for a company. If a company is too overwhelmed by their past, it's likely

they will fail.

Now, let's get back to Huawei. Once Huawei becomes strong in every aspect, will our leadership also become stubborn and rigid? Is it possible that they could become like the US, jumping to conclusions without thorough consideration.

The US often attacks any country they want, and only tries to find evidence to justify these attacks afterwards. I'm concerned that our next generation of leadership might be overwhelmed by the success the company has achieved. So I would rather support the development of several strong competitors in the US so that our next generation of leadership will stay on their toes.

After my explanation, you may not find my idea mysterious. Actually, this is something that everyone in our top leadership agrees on. It's not simply nonsense that I am saying while taking an interview.

**Alan Murray: When you find your partner, will you tell us first?**

**Ren:** I cannot guarantee that. We may need to sign an NDA before we enter into serious negotiations. Once the negotiations are complete, we will inform the public. It's hard to say who will get the news first.

07

**Clay Chandler: Can I ask a quick question about something that's in the news today? It is that in Munich at 8:00 tonight you'll be unveiling the Mate 30 phone. There are a lot of speculations about whether you would actually put that on sale in Europe without permission to use the apps from Google, like Gmail, Google Maps, the Play Store, etc. Some people think you'll just go ahead and roll it out anyway even without the apps and see what happens. But other people have speculated that it would be sort of useless for European consumers to buy an expensive piece of hardware like that without those apps that they often use. What's going to happen? Are you going to sell it in Europe? Or not roll it out at all?**

**Ren:** For now, we cannot precisely predict the outlook of our consumer business in overseas markets. Our phones though have some unique features that do not necessarily depend on Google's ecosystem. Even if Google Maps cannot be used in our new phones, there are other map developers in different countries, so we can download their map apps.

No matter what happens, we remain committed to offering Huawei smartphones in overseas markets, even if the sales in these markets may slow down or decline. We will see how these markets react to this.



08

**Clay Chandler: It's fascinating. Can I ask a quick question about the Harmony operating system? How confident are you that you can develop this into being the equivalent of say, an Apple operating system over the next two or three years? Would it take longer than that?**

**Ren:** I think it will take less than two to three years. Since I'm part of the company's leadership, I need to be a bit more conservative when discussing timelines; otherwise, I may end up putting too much pressure on our staff. But in truth, I personally don't think they need a full two to three years.

**Alan Murray: But your strength has always been hardware, not software?**

**Ren:** That's true, and we need to further improve in terms of software. We're somewhat weak when it comes to big software architecture, but we are the world's strongest player in embedded software – software that is built into hardware systems. We need to improve our software capabilities. Working on a big operating system is difficult, but we are confident that we can do it. We are not just saying we are confident; we have already started preparing.

That said, we hope the world does not split into different camps. We still hope to continue to use Google's operating system, and we remain committed to

friendly cooperation with Google. We hope that the US government will approve Google's request.

**Alan Murray: When do you think you'll know if you're going to get approval to use the full suite of Google's software?**

**Ren:** We don't know. It would be better if you asked the US government.

09

**Clay Chandler: The Huawei issue and the trade issue have become tangled up over last year. This is partly because of certain actions, deliberately at the choice of the US President, who has said we will settle all these deals together and Huawei might be part of the trade deal. What's your view on that? Is that something that's helpful for you? Or would you rather these things be kept on entirely separate tracks and in separate discussions?**

**Ren:** Huawei has virtually no business presence in the US, so the trade talks between China and the US have nothing to do with us.

The only connection between Huawei and the US is that we buy chips and electronic components from the US. If the US government doesn't allow US companies to sell to us, then those companies will suffer financially, but there has been no real impact on us. If you go and

see our production lines, you'll find that everything is business as usual. But the impact on the US has been quite substantial, with many US companies losing orders worth billions of US dollars a year.

If the US government approves the requests of US companies currently affected by the Entity List, this will help those companies.

**Alan Murray: Who are the companies? Who are your larger suppliers? Obviously, Google and Qualcomm. Who are the main companies that sell equipment to Huawei?**

**Ren:** It is reported that the US Department of Commerce has received more than 130 applications from US companies who wish to continue their supply to Huawei.

**10 Alan Murray: You said that it would not hurt even in the short term. Won't this hurt European sales if you can't use Google products?**

**Ren:** We are currently seeing a drop of 10 billion US dollars in our sales revenue. That's not a big impact on us.

**Alan Murray: Well, we look forward to reporting on your new partner.**

**Ren:** I look forward to welcoming you back to our campus, so you will know our company is surviving.

**Alan Murray: We have little doubt about your survival.**

**Ren:** We are also confident about our own survival. We definitely do not want to see a situation where globalization becomes fragmented because of the conflicts between Huawei and the US.



## **A Coffee with Ren II: Innovation, Rules & Trust**

September 26, 2019 Shenzhen, China



**Christine Tan, Anchor, Managing Asia, *CNBC*:** Welcome to another session of A Coffee with Ren. Today we're talking about a very interesting topic: Innovation, Rules, and Trust. We will focus on innovation simply because there are so many changes happening in the world of technology and such huge impacts that new technology can bring. We will also look at rules and how to manage risks and disputes when it comes to new technologies. This is without mentioning the issue of trust, which has become very critical as we explore new technologies, as has the prospect of a global framework that can really govern new technologies, and what this means for everyone.

Let me introduce today's panel to you. The man himself, Ren Zhengfei, CEO and founder of Huawei. And with him, two celebrated scientists and futurists on my left from the US – Jerry Kaplan also a futurist,

best known as a pioneer in pen computing and tablet computers. Welcome Jerry. Please also welcome Peter Cochrane, fellow of the Royal Academy of Engineering, winner of the Queen's Award for Innovation, and the former CTO of British Telecom. And last but not least, we have President of Corporate Strategy Department, Zhang Wenlin. Thank you all for being with us.

Let me start with Mr. Ren.

01

**Christine Tan: Mr. Ren, this is a discussion about innovation. How do you see the future? What new technologies do you see evolving?**

**Ren:** I believe that society is on the eve of another explosion of new theories and technologies. Electronic technologies will evolve towards being three nanometers or even one nanometer in size and won't stop there as Moore's law approaches its limits. It's just that technology will continue evolving in a manner that we cannot predict yet. In the past, we thought graphene would be this evolution. However, we don't know for certain if that's still true until today.

Significant breakthroughs will be made in genetic technology over the next two to three decades, which will help trigger huge breakthroughs in life science, biotechnology, and nanomedicine. We are not sure how these breakthroughs will change people's lives. If

our electronic technology is reduced to one nanometer precision and to a level that can be combined with genetic technology, what new scenarios will emerge? What surprises will be in store for society? This is beyond our imagination. Today, science and technology are so advanced that we can use molecular technology to synthesize materials that never existed before. An endless stream of new materials and technologies are constantly being discovered. We can't tell what the trends of the future will be.

AI will certainly start being applied on a large scale. But still, we cannot envision how it will drive society forward or create more wealth. The breakthrough and penetration of quantum computing will trigger the explosion of the information society. Although we know the impact will be significant, it won't be the same as we thought, not to mention the extensive application of optical technologies... During this period, breakthroughs in a single discipline will present us with a dizzying variety of new opportunities. The reverberations from breakthroughs in interdisciplinary studies will hugely shock us all. Any breakthroughs will be accompanied by an explosive growth in data traffic. We can't foresee what demands there will be in terms of computing, storage, transmission, and processing of this super large amount of data.



All these new technologies, which will be applied on a large scale, are likely to generate breakthroughs over the next 20 to 30 years. How will we usher in a new era in the face of these opportunities? I have no ready answer to this question.

This new era will open an enormous window of opportunity for us. We need to work even harder and join the forces of scientists and engineers from around the world to welcome this new era. This is what we expect. Despite this, we don't need to feel uneasy about the unpredictability. Instead, we should embrace this new era with great courage.

**Christine Tan: Let's talk about AI, which is artificial intelligence. A lot of people have been focusing on artificial intelligence and worry that it might displace jobs. How do you see this?**

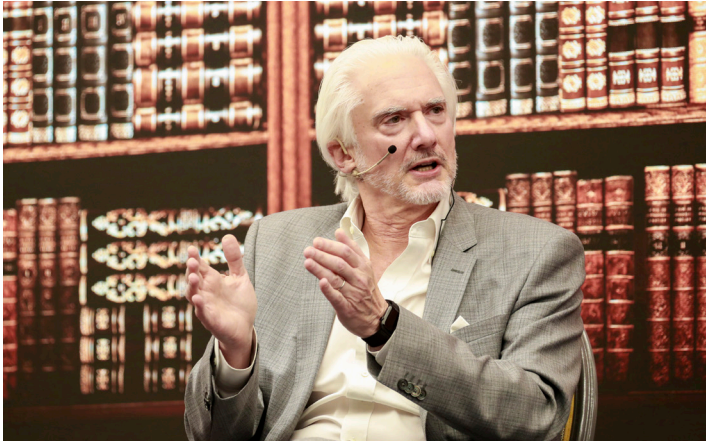
**Ren:** AI will just create greater wealth and generate higher efficiency for society as a whole. This greater wealth and increased efficiency will then address the employment issue in a new way. AI will be the core variable that will influence and shape a country's future capabilities and bring disruptive changes to that country. This means AI will fundamentally change how the international community develops. The development of a nation depends on its basic capabilities. Basic capabilities are about education,

talent, industry maturity, algorithms/computing power, and infrastructure. With support from infrastructure that includes supercomputers, super-large storage systems, and ultra-high-speed connectivity, humanity will welcome a new level of prosperity.

As for jobs, I believe this raises new requirements for each society and each country. We've already been through the Industrial Revolution. At that time, each worker was a good fit for society as long as they had received secondary education. In the AI era, we must improve the education and sharpen the skills of the world's entire population. Every country should endeavor to do so. To succeed, they don't have to be a big country. Thanks to AI, many small and middle-sized countries will be able to significantly boost their production capacities. As long as these countries are capable of creating more wealth, they will offer their people more opportunities.

**Christine Tan: You're an expert in AI. Do you agree with what Mr. Ren just said?**

**Jerry Kaplan:** First of all, it's an honor to be on the panel with such a prominent entrepreneur who is respected around the world, so thank you very much for having me. Following Mr. Ren, he's made such an eloquent explanation, I feel a little bit like I'm being asked to talk after Shakespeare though. So I'm not sure that I'll have too much to add.



You also want us to be a bit argumentative on the panel. So, there are a couple of things that are important to understand. AI is not magic. It's not really about intelligence at all. It's simply a new wave of automation. To understand what's going to happen with AI, you simply have to look at previous waves of automation. And then you can understand how it will affect labor markets and what is likely to happen.

Now, while it may seem technology is moving very quickly today, the people who study this, the academics, have surprisingly found that the rate of change in the past was actually faster than it is today. We are seeing an age in which technology and innovation is actually quite a bit slower. The invention of the railroad, the electric light, the computer, the television, all of these transformed society. And we haven't seen that kind of pace of transformation.

But I think that ultimately, Mr. Ren is correct, the future will be bright. While automation disrupts labor markets, it doesn't cause the jobs to disappear. New jobs will be created. As we become wealthier, demands will be created. We get a new middle class and new demands for goods and services. And in fact, automation will change the nature of labor, not put people out of work.

**Christine Tan: Peter, I've got to ask you. On AI, who do you think is going to dominate in AI? Will it be China or will it be the West?**



**Peter Cochrane:** I think that AI will decide. Right now, it's very task-specific in the same way that when Jerry and I and Mr. Ren first entered the industry, if you bought a computer for the payroll and that's all it did. Nothing else! And right now, we've got general-purpose computing. We don't have general-purpose AI yet! But I would like to frame this against a bigger picture,

a bigger ambition. What are we trying to do? First of all, we have to try and create sustainable societies. To do that, we have to get away from the idea that we can polish and improve what we've got. It won't work. Transformation demands biotech, nano tech, AI, robotics, and the Internet of Things.

Because anything we create for the future has to be recycled, repurposed, reused, and the only way we can orchestrate this is with the IoT. And there's a further thing that we have to achieve, and it's a big challenge. I don't know if Mr. Ren would favor this, but I would phrase it like this, we have to stop producing more and more for the few, and we have to start providing sufficient for the many. If we do not, we will never see a stable planet where people are living equitable lives.

There is sufficient on this planet to support every human, but with the technology we have right now, we stand to destroy our ecosystem. So we have to change the way we live and the way we do things.

**02** **Christine Tan: Innovation changes the way we do things and where we go. Another big word that has become very important is "trust". Mr. Ren, let me address this question to you, because Huawei has been under a lot of scrutiny as a leader in 5G. Why is there so much distrust around what you do?**

**Ren:** Hundreds of years ago during the Industrial Revolution, some people did not trust the machines used in textile mills. Some even saw them as symbols of devilry and tried to destroy the machines. Eventually though, people accepted the machines. Without these machines, the high-quality fabrics we use today wouldn't exist. Now some of the highest quality fabrics in the world are still produced in the UK. The emergence of these machines did not deprive textile workers of their rights, but improved the quality of their textiles. When the train was first created, it was ridiculed because it was slower than a horse-drawn carriage. Today, trains are widely recognized as one of the fastest ways to transport heavy cargo. When the train was introduced to China in the beginning of last century, people thought they were powered by ghosts, and couldn't figure out how they ran. Similarly, when China's high-speed rail began operation, an accident occurred on the Ningbo-Taizhou-Wenzhou line. At that time, almost everyone was against high-speed rail. But now no one complains about them at all. I think almost all people would say high-speed rail is a good thing.

Now AI is still in an early stage of its development. Advances in super computing, super-large storage, and super-fast connectivity technologies are creating opportunities for AI applications. Now people are very concerned about AI. They are worried that AI will cause

unemployment, disrupt social structures, and distort our ethics. They worry too much. If we look back, our population is several times larger than it was a few decades ago. Before, huge swathes of the human race were hungry. Now though, we are in an era of excessive material abundance; we have more than we can consume. That's because advancements in technology have helped us create more wealth.

The emergence of 5G was something unexpected. 10 years ago, Turkish Professor Erdal Arıkan published a mathematics research paper. Huawei came across this paper earlier than some others, invested heavily into that area, and kicked off our 5G. 5G itself is a tool, just like the ballast beds that train tracks are laid on. That's all it is about. Right now, there are heated debates around 5G, but only history will tell if 5G, AI, and other new technologies will create value for humanity.

In short, people should have more trust and tolerance towards new things. The most prominent feature of innovation is that it gives everyone academic freedom, allowing people to explore. With a little more tolerance in the world, Copernicus's theory of a heliocentric universe would have been accepted long before his death. People also suspect that genetic engineering has negative effects. But that can only be proved after experimentation. We should be more understanding of genetic scientists.

**Christine Tan: Are you disappointed and sad that there's so much distrust around your 5G technology?**

**Ren:** China used to be very poor and lag behind the rest of the world. People thought that China would never catch up. However, China turned out to be a crazy sprinter, able to catch up with everyone else. It's just like a train, which eventually runs faster than carriages. When new things are discovered, people don't trust them, but I think eventually the trust will grow.

Now, Europe still presents Huawei with a wide scale of opportunities. Actually we still see many opportunities all around the world. I think many people are quite tolerant of us, and that makes me happy. After all, we cannot expect everyone to understand us, at least not within a short period of time.

**Zhang Wenlin:** For what we see about distrust, I think that was caused by a lack of knowledge about 5G and the industry. For those that have a sufficient knowledge of 5G and the industry, such as telecom carriers, industry partners, standards organizations, and the governments of countries seeking economic and industrial development, they generally trust us. That's why our 5G business is developing very well despite all the noise and obstacles.





03

**Christine Tan: Actually you offered to license all your 5G technology to Western companies for a one-off fee. You put the proposal out there. Any interest so far?**

**Ren:** First, we don't intend to license our technology to all Western companies. We'll license it to only one Western company. We'll give it an exclusive license, so that there will be a large market for them. We think this company should be a US company. Europe already has its own 5G technology, so do South Korea and Japan. They just need to make some improvements and adjustments to its development. Since the US doesn't yet have any 5G technology, we should exclusively license it to a US company. With our 5G technology, that US company will be able to compete with us worldwide, not just in the US market. Of course, competing on

Mars, the moon, and the sun, is another story. But we can compete anywhere on the earth. Our aim is to start from the same place with the rest of the world in this new race. I believe we'll still be able to win on that new horizon.

5G is not that amazing; its power is exaggerated by politicians. AI will have an even brighter future. I hope we will not be added to the Entity List again in the AI era. Anyway, that would be unlikely, because AI is a software-based technology and we will probably surpass other companies in this area. Hopefully, we won't run into any new conflicts over this. We want to work together to serve humanity and the new digital society.

**Peter Cochrane:** I think it's totally distorted. There's no distrust between the engineers, the scientists, the managers or the companies.

**Christine Tan: Then what is the issue?**

**Peter Cochrane:** The issue is political. It has nothing to do with the technology or the people working on it. It is political. The technology fear factor is normal; it happened with 3G and 4G. But there's a subtle difference, social networks are now distorting perceptions. People associated truth with quantity. And if the social networks do anything, they generate quantity!

A single blog can generate 20 million postings it just keeps going. And so, there's been no concerted effort by

the industry to allay people's fears. We should be doing that. There is no proven problem with any of these technologies. If there were, we would have policemen queuing at the hospital with brain cancer. We've had mobile technology for a long time. We've been using military radios with far more power in close proximity to human beings with no difficulty at all. There's no proven problem.

There are problems such as influenza or gun-shot wounds. But there's no proven danger with 5G. In the UK, for example, the number one concern is that everybody wants service but nobody wants to see towers or masts.

**Christine Tan: Mr. Ren, a follow-up, very quick question, in terms of licensing out your 5G to one US company. What would that package look like? Would it be, hardware, software, or codes? What would it involve essentially?**

**Ren:** First, we'll license all our patents to this partner on fair, reasonable and non-discriminatory (FRAND) terms. Second, we'll license them everything related to 5G network technology, including software source codes, hardware designs, production technologies, as well as network planning and optimization and testing solutions. If they need, we can also license our chip design technology to them. We just hope that we'll be

able to start on an equal footing with companies from Europe, Japan, South Korea, and the US, so that we can continue to contribute to humanity together. We are confident that we will win the race, so we're open to offering the license.

**Christine Tan: But essentially this opens up the opportunity for another Western company to be a giant competitor to you. Are you willing to accept the fact you might lose your 5G leadership? Is that something you're willing to accept?**

**Ren:** First, we will get a lot of money from the licensing. That will be like adding firewood to fuel our innovation on new technologies. It will mean that we will have a better chance of maintaining our leading position.

Second, we will bring in a strong competitor. This will prevent our 190,000 employees from becoming complacent. They'll know that if they sleep on the job, they might wake up and find they have lost their jobs. It is simply not enough for me to keep pushing our employees to work hard every day. Sheep become stronger when they are chased by wolves. I don't worry that a strong competitor will emerge and drag Huawei down. In fact I would be happy to see that, because this would mean that the world is becoming stronger. The slower sheep from a herd will be eaten by wolves. Therefore, if we think of Huawei like a herd, it doesn't

need to lay off its slow-moving employees, as they will be eaten by "wolves". This is not a bad thing. I don't think a competitor poses a threat to us; instead, it will push us to move forward.

**Christine Tan: Jerry, how do you think this would sound to a US company and is licensing a way to rebuild that trust?**

**Jerry Kaplan:** Let me address the trust issue. First of all, in this conversation we're conflating two issues. Peter is talking about trust and fear about the technology. Mr. Ren is talking about trust and concern about suppliers. Trust in English is a fraught word. It's an emotional word, like you don't trust me. It's about emotions. The truth is you don't need trust to do business; what you need is predictability to do business. Those are very different things. It's just like marriage. You don't need love to be married; it helps. But you need respect to have a good marriage.

So the issues are the same here. What we need is a better expression of mutual respect, which, to be frank, the United States at a political level is not doing and therefore is not able to engage in a productive dialogue. Licensing is just one possible approach to this. There's a whole variety of technical approaches. There's clean room. There's second sourcing. There're all kinds of techniques to ensure that every nation, including the US,

has a right to protect its critical infrastructure. But that doesn't mean Huawei cannot be an effective supplier and there's no reason, in my view, Mr. Ren should give away his business. If he can outcompete American companies, that's the American way.

**Christine Tan: Mr. Ren, would you want to give away your business?**

**Ren:** I can understand that.

**Christine Tan: Peter, what do you think about this issue?**

**Peter Cochrane:** I don't actually think it's about the technology or 5G or networks. I think the real power in this situation is what we are going to do with it. It's the enabling function of 5G that I think is the real driver. We can transform things like healthcare, logistics, and manufacturing. It's a really good way of very quickly orchestrating the resources of a country, and the planet, to great effect.

I don't think that some new company coming in to this field, or a company that's already in the field, that takes the technology from Mr. Ren, is suddenly going to become superior. There's a very powerful research team here. They've got terrific scientists and engineers already thinking what's beyond 5G.

The reality is, if we're going to get 5G rolled out

across the planet really quickly, we need more than one company doing it. When any market becomes stabilized, and a product becomes a commodity, you usually only finish up with only 3 or 4 suppliers, but in the early stages you need a lot of suppliers to get it out there. I think the urgency is related to global warming and transforming societies.

**04 Christine Tan: Mr. Ren, I read that you're open to the idea signing a no-backdoor agreement, something you're exploring with some countries in Europe. Can you clarify your situation? Is that happening? What's the latest?**

**Ren:** Over the past 30-plus years, Huawei has maintained a solid track record in cyber security worldwide. This has proved that Huawei's equipment has never caused a large-scale network breakdown, and has never experienced malicious security incidents.

In the UK and Germany, we are subject to stringent scrutiny. No other equipment vendor has been subject to the same kind of rigorous tests. These tests have proven that there are no problems with our products and solutions. It's true that the UK has found some issues with our solutions, but we will take them seriously and make improvements accordingly.

We have never had any malicious intentions. We

support Europe in subjecting equipment vendors and carriers everywhere to these tests. The purpose is to ensure that no one installs backdoors. We have full confidence in signing no-backdoor agreements with various countries, and we are sure that we can deliver on this commitment.

We are investing heavily in R&D to ensure that we are at least up to the EU's cyber security standards and the requirements of the General Data Protection Regulation (GDPR). We have determined that our top goal for the next five years will be to ensure cyber security and privacy protection. On top of that, we will build simplified network architecture; simplified base stations, transmission networks, and core networks; and simplified transaction models. We will also build secure and trustworthy networks while protecting privacy. This will make networks faster, simpler, more secure, and more reliable.

We are working hard on these goals. And that's why we dare to promise to governments worldwide that our equipment contains no backdoors.

**05**

**Christine Tan: So the issue of trust is very real. Even though you want to sign a no-backdoor agreement, there is the issue of "if I don't trust you, I'm going to develop my own technology instead." This talk**



**has given rise to the fact we are facing a scenario where we could see two separate tech worlds, a tech decoupling of sorts. One in China and one in the US. How real is this possibility, Jerry?**

**Jerry Kaplan:** Well, it would be a terrible economic travesty for both sides and both countries, as Mr. Ren has written about extensively. However, if you're just talking about 5G, let me point out that this is a replay of things that happened between Europe and the United States with 3G and 4G. The standards were different, and your phone didn't work in the other place. Ultimately chips were developed that operated on both standards. It's a surmountable problem. This isn't the end of the world.

**Christine Tan: Peter, if we get one standard in China and one standard in the US, where does that put Europe?**

**Peter Cochrane:** I don't think it's a sustainable solution for the planet. It's just very expensive. What really happens in the tech world is, we spend billions developing technology. We have to get it out there in large numbers to amortize that investment, and then the prices fall and we can spread that technology across mankind in general. But if we have a smaller market, the prices are going to be higher. The cost of development is much higher.

The reality is, not the United States, not Europe,

China, or India, or Russia has got all the resources, all the people, all the technologies, all the manufacturing facilities, or all the know-how. We are in a global market; we are dependent upon each other. And I don't think the politicians understand either the technology, or the globalization, or the markets. Otherwise, they wouldn't be doing such stupid things.

**Christine Tan: Mr. Ren, to what extent do you think Huawei can decouple from technology in the West? To what extent can you reduce your reliance on foreign technology? And does this force you to develop your own technology instead?**

**Ren:** In the early years of railways, there were narrow tracks, wide tracks, and standard tracks. These differences impeded international transportation and hindered industrial development. The same problem has occurred in the communications industry. There are three standards for 3G and two standards for 4G, and it's widely agreed that these different standards have slowed down the development of communications worldwide and imposed high costs. For 5G, there is only one unified standard, which is the result of collective discussion among tens of thousands of scientists from more than 100 countries over the past two decades. As a result, the whole world will be connected by one standard network architecture, and this will bolster the

development of AI and social progress.

I don't support any technological decoupling, whatever the cause. My position is very clear: If US companies are allowed to sell components to Huawei, we will buy from them, even if this means cutting the production of components we have developed in-house. We support globalization and we will never seek to develop entirely on our own. We will never close ourselves off. The actions we are taking now in response to suspension of supplies don't represent our long-term ideal, which is to become an integral part of the world.

US companies are constantly making changes so that they can gradually resume their supplies to Huawei. We welcome this and we are happy about it. Decoupling is the last thing I want to see. It takes a lot of work to create a unified technology. Decoupling will only jeopardize the creation of new wealth for humanity.

Market fragmentation can only lead to high costs, even if it's possible to develop the required technology. The purpose of globalization is to support large-scale adoption of technologies and reduce the costs of quality services to benefit the seven billion people who share this planet. This is something we have been working hard to achieve. Fragmentation and decoupling should be avoided whenever and wherever possible.

06

**Christine Tan: Operating systems are the next big technology for China. What would you say to that?**

**Ren:** The development of HarmonyOS has taken us seven to eight years. This OS is originally intended for the Internet of Things and industrial control. Low latency is the biggest feature of HarmonyOS. You may be wondering whether it will be used for consumer devices. In fact, we are working to make that happen. Google has been friendly to us, and it is very capable. If the US government prohibits Google from providing Google Mobile Services to us, we will have to work hard to solve the issue.

**Jerry Kaplan:** I want to talk about the standards issue for a second. We're conflating a whole series of things. Standards allow interchange and permit innovation if they're good standards that can be different underneath. Now 5G is a much more complicated thing than the two letters, 5 and G, sound like. It's a whole series, a stack of layers. It's quite possible for the US to adopt the same standard as China and yet for the world to bifurcate because of silly trade issues and commercial issues that neither government has any business imposing on the world's corporations. So I think it's important to understand that. But, we've been through this before, fax machines, same story. Everyone had their own standard, and nobody profited. When there was one standard,

everybody's machines could talk to each other, so there was plenty of room for people to make money. Personal computers were just in the United States. IBM released the personal computer in 1982, if I'm remembering correctly. I'm old enough that I was around with the horse and buggy, so I think in 1982 they released that and it wasn't until they opened it up and licensed the design to everybody that the personal computer revolution really took off through standardization. So we can have that standardization and interchangeability. We do it with telephones, we do it with airplanes, we do it all over the place, and it's separate from other economic issues.

**Peter Cochrane:** The worst case scenario is we have to put a box in the middle to translate between the two. It's an awful engineering solution, but it does cure the problem. But I think you should recognize that it's not just Huawei that's being affected here. I'm over here with my Apple computer. I have two Gmail accounts. I have other American products that are suddenly not working so well or not working at all. This is not the technology or the people engaged in the markets; it's brought on by politicians. So these somewhat ridiculous impositions have no place in the future.

**07**

**Christine Tan: So, gentlemen, I'm going to be really controversial here. Let's just say we did have that two**

**tech worlds and there was a decoupling, and we could never say "No" because the world is so uncertain these days. Who would win out the tech race? Will it be the US or will it be China eventually? Indulge me with an answer.**

**Peter Cochrane:** It will be China and all its customers, because you have to remember that the entire United States population is less than 4% of the world population and so where are people going to go?

**Zhang Wenlin:** The standards that are most open and global will win. This has already been proven in the communications industry. In the 2G era, the standard of 3GPP was more open than another standard which was relatively closed even though it was more technologically advanced. Since then, from 3G to 4G and now with 5G, the standards of 3GPP have been embraced all over the world. Companies that supported advanced but closed standards have taken the wrong track. Huawei has witnessed this historic journey, and we are a staunch supporter of globalization, openness, innovation, and collaboration for shared success.

**Ren:** I think it's unlikely that our world will be divided into two camps.

Though we have not been allowed to interact with US scientists and professors, sooner or later we will still see the papers they release. For example, we can see

the papers of a Turkish professor two months after they are released. We may end up seeing the papers of a US professor three years after they are released. It's just a matter of time. And when we can see their papers, there will be impacts on our technology. It always takes time to transform new theories into engineering practice, but we can catch up if we run as fast as we are able during this period.

Even though the US is a bit ahead of us, the "snow water" on top of the Himalayas may still be the same. The US is the world's most powerful country and has the best technologies, which are like the snow water on top of the Himalayas. Technological decoupling is like building a dam to prevent snow water from flowing downhill, and the crops growing at the foot of the mountains will die from drought. In this way, the water will not be put to effective use to create value. The better approach would be to let the snow water flow down the slope, so that it can be used to irrigate the crops at the foot of the mountains. That way, the water itself creates value from crop yields. This is what globalization achieves.

How can the US become more prosperous if its companies are not allowed to sell their great products? Crops can't survive without water. When the mountain streams stop flowing, a farmer can dig a well for

irrigation. If a developing country is barred from buying from a certain country, they will find alternative suppliers. If water can't flow down the mountain, it brings no benefit to those at the top of the mountain, either. Scientists and ordinary workers have to make a living. A country's economy will shrink if its technologies can't be turned into products or can't secure the global market. Objectively speaking, no country can thrive if it distances itself from the rest of the world. No country can create a regional market that keeps foreign countries out. That said, I have to admit that the landscape is very rugged.

There's a book named *The World Is Flat*. I have always believed that the world is flat, albeit with glaciers in some places. It takes great effort to traverse the glaciers, and you have to be extremely careful even where the surface is flat. All roads in the world, however rugged, are connected to each other. We are in an Internet era, where technological decoupling and regional separation are impossible.

A moment ago, Zhang Wenlin explained which type of standards will win. In the 2G era, CDMA was more technologically advanced than GSM. Who saved GSM? It was China. The country refused to accept the harsh requirements of CDMA, so China bought GSM products in huge quantities. The call drop rate of GSM networks was high at first due to poor product quality, but issues



were identified and fixed as China put GSM products into wider use, and the products themselves became better during the process. Against this backdrop, 3GPP has made rapid advances. GSM is more open. Tens of thousands of companies have come on board to support the 3GPP standards, form an ecosystem, and make achievements, including today's 5G. The success of 5G is the success of the 3GPP organization.

**Christine Tan: So you are sure technology decoupling will not take place. Are you willing to say to this crowd and people tuning in that it will not take place?**

**Ren:** Why am I sure that decoupling won't take place? Because the Internet has made widespread communication possible. With the Internet, it's impossible for US professors to hide their paper in a fridge from everyone else. Otherwise, American engineers wouldn't be able to make products based on this paper either. So the paper will be visible to everyone if it gets published, and those who read it will build on the theories developed by US scientists. They could also follow the theories of European scientists or Russian mathematicians. Eventually, they will form parallel ecosystems, with some on a higher level and some lower. However, there will be no fundamental differences with regard to the entire ecosystem.

**Peter Cochrane:** There's not a single instance in

our history where isolation has succeeded. Not for a company, not for a country, not for the planet. Mr. Ren is right. It's just a question of time.

**Jerry Kaplan:** However, with respect to artificial intelligence, it's a bit of a different dynamic. There's this mythology about who's going to win. There's some kind of race. Politicians, and I'm talking about a lot of the media people here, love to talk about it as though it's an international competition. But artificial intelligence is a software technology. It consists of two parts, you have programs, and mostly the value is in data, large amounts of data. And all that AI is, when you really look at it, it's programs that analyze and find patterns in very large collections of data. That's what current AI is. Now the problem is that everybody is going to have the technology and it's easy to transport and American companies are giving it away. That's not going to be an issue. The question is what happens with the data.

What I would like to point out is that the data that is collected in China is not necessarily useful or as useful as in other places. A bifurcation in terms of the data is just as true in artificial intelligence as it is in any other kind of database. AT&T can't use China Unicom's data. It's not a useful thing to do. The technology that does face recognition in China isn't necessarily going to work well on the range of faces that it's going to see in the United

States. The best analogy I can use is the movie industry. It's like saying "Who is going to win?" American films or Chinese films? Because it is also data. And with that I think you can see, I don't think anybody in the US is worried about Chinese films taking over Hollywood, and I don't think anybody here is worried about Hollywood films taking over whatever wonderful films you have here in China that I've never watched. So this is a big myth, and the investment and worry the governments have about this is completely misplaced. It is not like nuclear energy where you can in fact bottle it up and have a unique advantage.

**Peter Cochrane:** Just correct me on this, but the only other instance I can think of like this in the US was with Japan and it was over automobile manufacturing. Autoworkers in the United States were being laid off because the Japanese were producing cheaper, better quality, and reliable cars. A trade war broke out, as I recall.

**Jerry Kaplan:** I thought you were going to mention the 5th generation computing project, which is a complete coincidence, ironically, it's 5G. This went on for years. Japan and the US were worried. They had a major reaction and started a big government project. And the same thing happened in Japan, because it was happening in the United States. Both countries wasted their money. It came to nothing. And we can go through

that same pattern and replay it with artificial intelligence, but if we're smart, we're not going to do that.

**08**

**Christine Tan:** Jerry, I'm glad you talked about data, because that's something I want to bring up. In the West and in the US, there are lots of issues about data protection and privacy. In China, Mr. Ren, correct me if I'm wrong, there's a willingness to share the data to improve on existing technology. I know you may say the West is still going to be ahead in terms of technology. Don't you think that's a big point for China to drive ahead? Because data and privacy protection is going to drag down technology innovation in the West.

**Zhang Wenlin:** I'm a fan of Jerry, and I've read many of his books. I admire his in-depth insights, but I do disagree with him on this particular issue. Data is obviously very important to AI. For AI, data varies with regions, and has unique value to particular regions. This is what I like most about data. Data of one region may not be as attractive when it is transferred somewhere else. This means that AI will create business for every region, and every region can get deeply involved in the development of the new AI industry.

In terms of technological breakthroughs, the more pressing, key issue is computing power. The concept of

AI has actually existed for a while. But it has just begun its basic application now, 60 years after the concept was put forward, because many related technologies have only recently become ready to support the use of AI. These include connectivity technology and high performance computing.

Only after extraordinary breakthroughs are made in information infrastructure, especially computing power, will AI likely become ubiquitous and always available like electricity is today. Therefore, we believe infrastructure capabilities, including connectivity and computing, are vital to AI.

**Ren:** First, different countries have very different views on data and privacy protection. China used to be a conservative country that lagged behind the rest of the world, but it's becoming increasingly open these days. Many young people post their daily lives online, voluntarily. Some people may say that you should not post your pictures online for safety considerations. But many people just keep posting. Chinese young people today are different from my generation. They don't see protection the way we do.

Second, I think privacy protection should be done in a way that promotes the safety of individuals and the security of society as a whole, and drives social progress. Excessive protection will do more harm than good for

society.

Let me give you an example. About 10 years ago, there were an annual average of 18,000 cases of motorcycle riders snatching purses from female pedestrians in Shenzhen. But last year there were 0 cases like this. And all of the 94 serious cases last year were solved. It turns out China has become one of the safest places in the world now. But during this process, many people have experienced a reduced level of privacy. Whenever I go out for a drive, I get photographed by CCTV; we all do. Those photos go into databases, but the access to the photos is limited, even to the police. They have to get certain permission to access them. As a result, security in the city of Shenzhen has improved significantly.

When the economy doesn't work, some people may risk engaging in wrongdoing. But China has been changing in many ways, which is good for productivity and employment. There is a common feeling in the West that privacy should not be given up, but this could actually reduce the security of societies. The US, in particular, has suffered from gun violence from time to time. If they are willing to give up on their privacy a little bit more, then when a security guard spots a customer carrying a gun entering a department store, they can stop them to prevent a shooting. Otherwise, this one person's privacy may be protected, but many lives may

be at stake.

When it comes to protecting privacy, we must take a scientific approach. This is particularly true for a sovereign state in how it should manage its information and data, and it is ultimately up to the sovereign state to decide this for itself. There's no universal standard on this. Every sovereign state is entitled to choosing their own approach to data governance as long as no innocent people get hurt during this process and the security level of the society as a whole changes for the better.

**Christine Tan: That's the plan to protect their data, trying to protect their privacy. Where are innovative companies, where are technology companies going to get their data from, to improve their technologies?**

**Peter Cochrane:** People will volunteer for free. Let me give you an example. Suppose I'm ill tonight, and my medical records are in the UK, you can't get them. They are now constrained by GDPR. They're my records, and I want to give them to you, but at the moment I'm prevented from doing so. But believe me, there are many personal things and a lot of my personal information I will gladly give away. So if we have a study on some ailment or illness, I will gladly donate all my data. The question is, does it pose a security threat for me or my family, and does it make a contribution? And best of all, for me, does it make my life easier and safer?

**Christine Tan: Does it? Does it make your life easier?**

**Peter Cochrane:** If you want my medical record, I will give it to you on a memory stick, and then while I'm here you can act as my agent, if I'm ill, you can look after me.

**Jerry Kaplan:** It's perfectly appropriate to have different laws for protecting privacy in different places, because this is a social and cultural issue. People have a different attitude in China than they do in the United States for long historical reasons, and the same thing is true in Europe. The only problem is AI likes a lot of data. It so happens that China is in a much better position to take advantage of artificial intelligence and to benefit from it more than it would have been in the US, even if you completely separate the data sets, because China simply has more data. People in the United States don't realize and they don't appreciate the scale. I found out today that Shenzhen has 15 million people. It's more than Los Angeles. I was in Shanghai. The population in Shanghai is more than the State of Texas. There are more English speakers in China than there are in the United States. There are all kinds of amazing facts and figures about this. It's a big market. There is more data, and the barriers to being able to centralize the data into large data sets are smaller here than they are in other places.

**Zhang Wenlin:** I'd like to add something else. I don't



think we need all the data to make technological advancements. In most cases, we only need data that is valuable for training, such as data corrected or labelled by specialists. We don't need to acquire every kind of data, especially not personal data. In the early stages, some Internet companies didn't actually know what types of data they really needed. However, people have gradually realized the importance of respecting data and privacy and protecting data sovereignty in order to sustain robust industry development. As Peter said, we will use our data in exchange for services. Tech companies are responsible for creating maximum value by taking only minimal amounts of data. At the same time, they should try their best to keep users informed and give them the choice to decide whether to participate in the exchange.

**Christine Tan: Is it only a matter of time before China puts in place privacy and data protection laws? Do you think that'll happen?**

**Ren:** I believe China should enact a very stringent Privacy Protection Law, and under this law, anyone who illegally acquires and uses others' data should be punished. Just now I said sovereign states have the right to manage their data. For example, police officers and people with judicial power can control data. I did not mean regular citizens should.

In China, some people sell off data for a quick profit. For example, some sell data about expectant and new mothers to infant formula manufacturers, who then target their product promotions to these mothers. It's wrong to leak personal information like this. There are also people who steal private phone numbers and send them to scammers. I think China should strengthen privacy protection and legislation in these areas and impose severe punishments against those who infringe upon privacy. This is a necessary step to move society forward.

I firmly support the EU's GDPR, and our equipment fully complies with this regulation. I also support China in making step-by-step progress in information management. In fact, significant progress has been made and regulation has been tightened in this area over the past two years. China needs to gradually improve its privacy protection to create a more secure and harmonious environment for its people. This is the happiness people desire most.

**09**

**Christine Tan: This brings us nicely to regulations, rules of governments. What policies and controls should they put in place to manage these risks? In terms of companies, what sorts of principles should they put in place when it comes to developing new technology**

**so they don't breach any privacy issues or data protection issues? What are some of the ideas that you have about how this could take place? The broad framework, how we can come up with some sorts of viable regulations that everybody can agree upon and can move forward in this tech world?**

**Peter Cochrane:** I don't think we have to make this very difficult. Any company and organization that comes to me and says: "We would like your data, this is what we are going to do with it, and we guarantee that we will protect that data." Then on that basis, I will afford them my data. If then as a matter of negligence, my data gets out, I think there's a price to pay for being careless. I always feel any organization that is attacked by a 15-year-old in a bedroom using a laptop, this is a good punishment, because if their security is so poor, they really have not spent enough money. But I have seen governments. I have seen defense departments. I have seen banks, all kinds of big organizations that have lost a huge amount of data. Fortunately, it's not been too damaging.

**Christine Tan: Isn't that dangerous also, when it comes to technology? Companies like Huawei are developing technology so fast, but at the same time government officials don't quite understand how it works. This is skepticism. (Peter: That's an understatement.) Yeah, they don't know the risks. They think "Oh,**

**it's new technology. It's dangerous. Let's ban it completely," because they don't understand. If they don't understand the new technology, how are they expected to put rules and regulations in place to govern this new technology? Jerry?**

**Jerry Kaplan:** Well, there is no good answer to that question, but when you talk about protection of data, there are ways to parse this part that I think really gave point to some kind of an answer.

The issue is not the collection of the data. The issue is the use of the data, and the retention of the data. If it is collected, you have to be informed about the purpose and it has to be restricted to be used for that purpose and you should know that it expires after some period of time. So it can't fall into the wrong hands or be used for purposes which you did not know. And transparency about what these purposes are and communicating them so they're understood by the person providing data is very important. That's the problem we're having in the United States right now. People on Facebook and Twitter, their data is being used for purposes that they did not know. People might not want it to be used for political purposes or police work or something like that. And so we need to put those kinds of restrictions in place.

**Christine Tan: Mr. Ren? Do you have an opinion on that?**

**Ren:** I think our society needs to show more tolerance

towards new technologies. Inventions and innovations would be impossible without academic freedom and freedom of thought. Some innovations and inventions benefit people and some don't. Whether or not innovations and inventions will bring benefits must be verified gradually through practice.

Take atomic bombs for example. They were invented based on nuclear fission theory and are obviously disastrous for humanity. But after further research into nuclear theory, nuclear energy will provide huge benefits for humanity. So we should take a tolerant attitude towards new technologies. If we adopt a stereotypical approach to assessing scientific breakthroughs, I think it would be very hard for new technologies to emerge, and social progress would be very slow, just like what we saw in the Middle Ages.

Let's take genetic technology as another example. I think it takes time to tell whether genetic technology will ultimately be beneficial or harmful for humanity. Some gene editing technology may do harm. However, the experiments on a few people may bring happiness to billions of people. We shouldn't jump to conclusions about whether a technology is good or bad.

At Huawei, we adopt AI primarily to improve our production process and products. We do not study the social or ethical implications of this technology. Some

sociologists have put forward some pessimistic ideas about AI, but I don't think those ideas will prove true, not at least over the next three decades. I think we should also adopt a more tolerant approach to AI. We cannot prevent advancements in AI due to some hypothetical fears about it.

New technologies, sciences, and ideas are often not easily accepted by the general public. The truth is in the hands of the few. If you put a new idea or technology in a poll on the Internet, you may not get a lot of support for it, as most people just don't understand the value that it will create. So I think we should show tolerance towards and protect the few innovators in our society through government policies, laws, and ethics. Even if the innovators go past the boundaries, we should show tolerance towards them, so that they will come back. If we don't show a tolerant attitude towards new things, social progress will slow down, and it will take a long time for a country to improve its competitiveness.

When Huawei was founded, China was in the early stages of its reform and opening-up period. At that time, 20 million young intellectuals had just come back to the cities from rural areas. They didn't want to continue staying in rural areas where the environment was tough and they felt lonely. The government agreed to let them come back to the cities they originally came from. However, they weren't able to find jobs in cities

and were thus allowed to sell big bowls of tea, steamed buns, and things like that from street stalls. That's how China's private sector started.

The central government issued a document saying businesses were not allowed to employ more than eight people; otherwise, they would be considered capitalistic and would not be allowed to move forward. At that time, Huawei already had more than eight employees. Fortunately, the local government showed tolerance towards us. We were not labeled as being capitalistic and were allowed to develop step by step.

Every year, we pay 20 billion US dollars in taxes to the Chinese government and other governments around the world. This does not include the social progress facilitated by our employees' consumption, and other contributions. Huawei would not have become what it is today without the tolerance we benefited from in our early years.

We should be more tolerant towards new things and give them more free rein. This is the only way we will be able to create a brighter future.

**Zhang Wenlin:** This is a very key topic in the industry. People have concerns, fears, and high expectations for technology. I think the best way forward is to have an open discussion about the nature and stages of technology with people like sociologists, scientists,

regulators, and tech companies. ISO and IEC have established the JTC 1/SC 42. Huawei is actively participating in this initiative. It is the most important platform that collects people's concerns and feedback about technology and seeks global solutions. As digital technology develops rapidly, tech companies really need to take any negative impact that may be caused by data protection very seriously, and help find solutions to mitigate the impact. Tech companies must first abide by the laws of every country where they operate. Also, they must use trustworthy and secure technologies to protect customer privacy and data sovereignty, and then provide secure, trustworthy, and high-quality products.

**Ren:** No matter how many people sit down together and talk about this, I don't think a consensus will ever be reached. We should let everyone express their thoughts, and then let society assess those thoughts.

**Zhang Wenlin:** I think our industry is making progress, and we need the industry to sit down to make a common framework and generate trust. Otherwise, those who don't understand technology will cause a stir, and those who do understand it will refuse to share information about it. If they don't understand and talk with each other, technological advancements will not be possible. Take this HUAWEI Mate 30 smartphone for example. The pages turn automatically even without



me touching the screen. Even tech-savvy people find it cool and amazing. The technology behind this is actually not mysterious. We use AI to identify gestures, which is similar to facial and image recognition technology. It's like revealing the secrets of a magic trick. People will understand and believe it if the truth is not something that is beyond their imaginations.

With more dialogue among industry players, I think we will work out a trustworthy management framework based on a more reasonable and clear understanding of technology. Then we will help more people understand technology and see it in a rational way.

No tech company should try to use their expertise in technology to deprive users of their right to having a choice. As tech companies, we should do everything in our power to take on complexity ourselves, enable our users to understand the key nature of technology and the rights they have, and give them more choices. We should also help regulators understand technology and establish governance rules to avoid the misuse of technology. This way, we will gradually earn users' trust and continue building trust from society as a whole.

**10**

**Christine Tan: Mr. Ren, my question to you is: since you operate here in China, how open are Chinese officials or Chinese regulators when it comes to new**

**technologies? Do they always understand and support what you're trying to develop at Huawei?**

**Ren:** I think the priority for China is to enhance basic education and basic science. This will allow China to stay abreast with the rest of the world. Currently, Western countries like the US and the UK have very advanced education systems, which are very open and encourage academic freedom and intellectual freedom. Some students in the US, for example, can choose from 1,600 courses to study. Each student can only choose four courses each semester, which means one student could select just 32 courses over eight semesters. However, two students in the same class may have selected completely different courses for their 31 remaining credits.

This is not the case in China. China has unified textbooks and unified exams, meaning that most students are basically at the same level. Of course, both of you are at a level a little higher than me, but not by too much. Breakthroughs in science and technology in China need pioneers and leaders.

I believe the current situation represents a historical opportunity for us. At Huawei, we take a global approach to research. We do not confine ourselves to just China. We have research presence in countries on and above the Tropic of the Cancer, including the US, Canada, the UK, Russia, and Japan. We have more

than 30,000 non-Chinese employees, including a huge group of scientists spread across those countries. We have about 70,000 to 80,000 R&D staff, and some of them are also scientists and top experts in their fields. When they concentrate their efforts, they can make breakthroughs. We are currently frontrunners in this area, unfettered by restrictions.

We want to contribute more to humanity in terms of new technology. We have never thought of completely dominating the market. We are not a public company, so we don't pursue pretty financial reports. Instead, what we want is to become stronger. Nothing limits us.

**11**

**Christine Tan:** We have come to the end of our discussion but very quickly I would like to get each of you to think ahead. We're talking about new technologies and innovation. Now we are looking at AI, what's the next big technology you think is going to happen? What's going to be the next big thing in the world of technology? Can you make a prediction for us? Jerry, let's start with you.

**Jerry Kaplan:** Well, some things will impact consumers and others will impact the industry, but people are interested in what's going to be for them. I think it's going to be a concept called augmented reality. That's going to make a big difference. And that's basically

being able to put on a pair of glasses which will overlay images over what you're seeing, so that you can play games or interact with images of other people. You'll be able to have a conversation with a friend who appears to be sitting at your dining room table, with their arms over the table and legs underneath. It'll bring people closer together and create a very different feel in the way we care about other people and the ways in which we interact. It will be so realistic. It would be like having a very realistic ghost right there in front of you. I think that's probably the way in which people will see the impact of 5G and AI most effectively over the next decade or two.

**Peter Cochrane:** Last week a paper appeared and quickly disappeared. It was a paper by Google, and it claimed quantum supremacy, that is, a quantum computer that could outclass any super-computer on the planet. I'm not sure why that paper disappeared but it was a 72-qubit machine.

Why is quantum computing very important? If we can get it to work, it would allow us to truly understand chemistry, biology, life, and intelligence for the first time, and it would allow us to tackle some very difficult, deep-seated problems like protein-folding and communication between the genome and protein, which is probably the source of about 98% of all human illnesses.

But without quantum computing, we're going to struggle to make a giant leap in our understanding and technology that will impact all humanity in positive ways that are hard to quantify. Quantum computing will change everything; we can get 100 qubits, and we become powerful. If we can get 1,000 qubits, we effectively become gods!

**Christine Tan: Mr. Ren, what are you getting your engineers to develop at your labs? Is it going to be the next big thing? What's the secret you're working on?**

**Ren:** I'm not sure what the world will look like in the future. We are on the cusp of breakthroughs in multiple frontiers. I can hardly imagine what the world will be like when there are multi-disciplinary breakthroughs. I hope our company can find its place, a strategic high ground, in the future. I think our strategy will remain focused on the strategic high ground. Our current goal is to channel data traffic, and process and distribute data.

I think there will be a huge flood of data traffic coming, just like the flood shown in the movie 2012. It will become increasingly huge. As long as you can deal with the huge amounts of data traffic, you will have opportunities to succeed. I think the amount of traffic that 5G networks can support is still relatively small. Even if optical networks can enable data rates up to 800 gigabit/s, I think this would still be insufficient to handle

huge amounts of data traffic. We can continue down this path.

**Zhang Wenlin:** In general, I share the same idea, but my way of expression or focus is different. Simply put, I think AI will be the most important technology in the future. AI is not a single technology; it is a combination of multiple technologies. AI is just beginning to be used because technological breakthroughs are only beginning to support its application today. AI still has a long way to go. During this process, further breakthroughs need to be made in many domains, including materials science, biotechnology, and molecule-level manufacturing, which will very likely drive AI to develop rapidly.

As AI continues to evolve, it will generate more data, just as Mr. Ren said, massive amounts of data traffic, like the floods shown in the movie 2012. The ideal of Huawei is to make data processing and computing simpler, more efficient and affordable, as well as ubiquitous. It's just like how you use electricity. You don't know where the electricity is generated or how it is transmitted, but it is plug-and-play anytime anywhere. That's the breakthrough that we at Huawei want to make – computing power.

**12**

**Christine Tan: Huawei is developing the next generation, 6G? Is that in the work? Is that in the**

## pipeline?

**Ren:** Development is being done on 5G and 6G in parallel. We started our 6G research quite a long time ago. 6G is mainly a millimeter wave technology. It will have high bandwidth, but it might not be able to cover long distances. We still have a long way to go before we can roll out 6G on a large scale.

**Zhang Wenlin:** What will 6G look like? It'll be something we will see 10 years from now. In our industry, we see a new generation of technology every 10 years. I was involved in the conceptual phase of 5G development. What impressed me most was the 5G concept that a professor at the University of Surrey shared with us when we discussed how 5G should look 10 years ago. He said that within one kilometer, the number of connections will reach one million. We found it difficult to understand because it was different from our traditional understanding of communications. At the time, I even thought it was irrelevant to the technology we were talking about.

But it happens to be what we are seeing today. As Mr. Ren just said, we are still exploring 6G. Right now, we are still exploring, looking at the concept and making theoretical verifications. In our communications industry, if any company or any country wants to wait or skip a certain generation of technology, they will miss many

opportunities. The next generation of technology has to be built on the previous generations. If one country performs well in 3G, they generally do well in 4G. The same is true for 5G. A solid foundation in 4G is key to success in 5G. If a country or company wants to skip 5G and go directly for 6G, they are bound to fail. All cases we have seen are failures.

**Christine Tan: Do you think Huawei will lead in 6G?**

**Ren:** Yes, definitely.

13

**Audience: I'm Glen Gilmore from the United States. I'm a member of the adjunct faculty at Rutgers University and also a Huawei KOL. A question for Mr. Ren, if I might, what will it take to liberate technology to rise above national boundaries so that tech for good will truly become tech for all?**

**Ren:** We think technology is only a tool, like a screw driver or a wrench that can be used anywhere in the world. We should think of 5G as a base station, and not as an atomic bomb. It can be used by anyone. Technology should not be politicized. People should choose technologies based on their business needs and market competition. This way people can share the benefits brought by a new technology.

**Christine Tan: Does anyone else here want to answer**



**the question? Whether tech for good can be made tech for all?**

**Peter Cochrane:** I think it's inevitable with globalization. If a nation decides to isolate themselves from that globalization, there is a cost. And we've never actually seen that policy succeed anywhere in the past. I can't see it lasting very long.

**14 Audience:** With the development of AI, do you worry that this technology will increase social inequality? People that only have small amount of data to use and the majority of us that generate data may not able to use the data. Mr. Ren, at your last coffee talk, you mentioned that Huawei's revenue will decrease by 30 billion US dollars due to the recent incidents. Last month, a Huawei executive said it would not be as much as that, and that the revenue decrease could be about 10 billion US dollars. What changes and adjustment have you made to change the forecast?

**Ren:** Will AI widen the gap between countries? Definitely. AI's development needs the support of education and talent. Second, it needs the support of infrastructure. AI is an all-inclusive set of software that needs a support system. That system requires tens of thousands of high-performance computers or supercomputers, instead of just one or two. It also needs

the support of large-scale data storage systems and super-fast connectivity systems. Building this kind of infrastructure will also require heavy investment. If the software is good but the investment into infrastructure is lacking, the software will not be able to work. It'll be like having cars but no roads. Your car won't be able to do anything.

Wealth disparity will continue to be a problem in the future, so the world needs to come up with rules. Well-off countries should help poorer countries with things like education. This will gradually help the world prosper as a whole. However, AI is set to contribute to increasing disparities between countries, and those disparities are going to widen faster.

Regarding the predicted drop in our company's revenue, we have not said that our annual revenue would be less than last year's. We have simply lowered our expectations for this year's revenue growth. Some people say, that drop will be about 10 billion US dollars. I think that sounds kind of accurate, but it may end up being less than that. It's hard to say. I cannot tell you the exact figure, or else our Finance Department won't have anything to announce next year. I will leave the opportunity to them.

**Jerry Kaplan:** Briefly, artificial intelligence is automation. And as Karl Marx explained and understood, automation

is the substitution of capital for labor. Therefore, the people with capital are in the position to reap the primary economic benefits of the technology. And like other forms of automation, artificial intelligence will be a force for increasing wealth inequality. What we need to do is to stop thinking about our social policy as being in the service of economics, but start thinking about economic policy as being in the service of the goals of society. We should be trying to maximize overall happiness, not trying to build a GDP solely for the benefit of the few.

**15 Audience: The guests here today mentioned issues with trust. One of the professors thinks that trust contains one's attitude and stance, and it is subjective. I would like to ask Mr. Ren and the two guests, for people who inherently oppose you or are biased against you, do you think it's even possible to gain their trust? We have also noticed that Mr. Ren has been speaking with the international media more frequently this year. Previously, this was uncommon for Huawei and Mr. Ren. How effective do you think Huawei's communication has been over the past year?**

**Ren:** As we continue to talk with the media and share real facts through the media, I think the media coverage on Huawei has gradually improved from being very

negative last year to being almost good. It wouldn't be possible for all of the media coverage on Huawei to be completely good. The media helps us to communicate what we are doing across the world. At the beginning of this crisis, no one believed we would make it. However, we survived. Some people say it's because we had enough inventory to support our production. We produce over 100 billion US dollars in hardware, which would need 70 billion to 80 billion US dollars in materials. We don't have the capital to hoard that much material. We aren't relying only on our previous inventory to support current production. Our financial results in the first half of this year were not bad, so people are interested in this. The sympathy of our customers may be the reason that we did well. The results from the latter half of this year will prove that we can do well because we have real strength.

Why do customers trust us? We have spent 20 to 30 years building our relationships with them, and they believe that Huawei is a good company with integrity. Second, many Western companies have already started receiving products from us that contain no US components. Their confidence has increased and they believe that we can continue to supply them goods. Why have guest visits to our offices increased by 69%? Because they want to see if we are still up and running. First we take reporters to see the company

shuttles that employees take to come to work and get home. If people are coming to work, then they are still working. Second, we take them to our canteens to see how full they are. Then we take them to the production lines which haven't gone down once yet. We do this to strengthen our customer's trust in us. Trust spreads little by little as we show people how we are doing. Of course, the media also helps us a lot by reporting what we show them.

I estimate that the financial results for H1 of next year will continue to be good. There will not be any sharp increases though. When we see the financial results for the first half of next year, we will know that we have survived the storm. By the end of next year, people will also see that Huawei has made it. In 2021 and beyond, people will see our revenue growth continue to recover, and they will say that we have started to grow again by solving our own problems. We will gain their trust not by talking but by working hard. We can only gain their trust through our own efforts. Whether people will trust us or not depends on facts, so we believe that we can regain their trust.

**Jerry Kaplan:** Just very briefly, if you listen to the political dialogue, what you hear is mistrust, insults, and accusations. But it's important to understand that the political dialogue is actually not aimed at each other but aimed at the local audiences. The truth of the matter is,

if you live like where I live, in San Francisco, you would understand something that is not well reported in the press here in China, which is that the Chinese people are very highly respected and they're excellent neighbors and members of the community. So the distrust and conflict you see at the political level makes constructive dialogue impossible. But from people to people, it is a very different story. I want the people here in China to understand that they're highly respected and treated as real members of the community inside the United States.

**16 Audience: I have two questions, the first one I want to ask Mr. Ren about licensing technology to an American company. Do you mean that Huawei do not rely on US suppliers so you can produce the products? I mean for all the products you ship now, are they fully independent of US supplies? And another question is that since Huawei has registered for a bond issuance for around 30 billion, is that the correct number and what is the timetable to finish that kind of bond issuance? Because it is the first time Huawei has issued this bond in China. Will banks offer preferential policies to you?**

**Ren:** First, can Huawei survive without relying on the US supply chain? The answer should be yes. However, we

can still use US components. In August and September, we are undergoing a run-in period so we can only produce around 5,000 base stations each month during that period. However, we will begin mass production in October. In 2019, we will be able to produce 600,000 base stations. Next year, we will produce 1.5 million base stations. Of course, we hope that the West will resume their supplies of components to us. We have been working with our Western partners for 30 years, and we have formed close ties with them, so we cannot just make money on our own, without them making any money. We cannot do that.

Second, regarding the issuance of bonds, I didn't initially know about this. After the bonds were issued, I learned about it from the news, so I called people in the treasury management department and asked why they had done this. They said that we must issue bonds while our company was experiencing its best period to increase people's understanding of Huawei so they would trust us more. They also said that we shouldn't postpone the issuance of bonds until we meet with difficulties.

In addition, the cost of bond issuance is low. If we keep increasing employee investment in the company, the cost will be too high, because the dividends are often too high. However, the cost of financing from bond issuance is much lower, with an interest rate of only 4%.

So why can't we increase our financing through this means?

In the past, our financing mainly came from Western banks. Now that the channels of financing through these banks have become less smooth, we are now trying a shift to Chinese banks for our financing. I don't know what the exact amount of total financing is this time. Maybe it will be 30 or 20 billion yuan. The amount will be decided by the treasury management department because we have sufficient funds right now.

**Peter Cochrane:** In the last decade the center of gravity for many technologies has moved from the United States and the West towards the East. Flat panel displays, the latest 7nm chips, and batteries, are all sourced in Southeast Asia. So it's not such a giant step to conceive of autonomy. But it's not really a good policy to put everything into one basket. It is better to share technology and encourage its spread. Bilateral trade is absolutely essential.

17

**Audience:** I am with *The Times of India*. I'm a little surprised that India is so advanced in science, basic research, and technology, but you don't have much of a center there. However, you're looking for a market in India. What do you think about the Indian market and what kind of challenges, regulatory or legal



**challenges, do you expect in India? This is a question to Mr. Ren.**

**Zhang Wenlin:** India has very good talent and a very solid foundation. That was why we established a large research center in Bangalore 15 years ago. This research center has more than 3,000 employees, and has been playing an important role at Huawei. The Indian market has always been important to us. Over the years, our operations in this market have been quite good. In addition, the Indian government has been relatively open in communicating its regulatory policies and has had smooth communications with us.

**Ren:** In the past, the regulations of the Indian government were based on rules for voice communications. Today, after they shift to data communications through broadband networks, they need to adjust their regulations and policies. Infrastructure is the foundation for a country's economic development, and communications is a very important part of this.



## Ren Zhengfei's Northern European Media Roundtable

October 15, 2019 Shenzhen, China

**Ren:** Good afternoon. Welcome to our company. Feel free and speak up about any questions you might have, and I will try and be very direct in my answers. Challenging questions are welcome too.

**01** ***S/V:* Maybe it's not a challenging one, but more, if you could just tell us a bit about where your inspiration comes from? What does this building mean for your inspiration? This is a very European setting and it feels like we're back in turn-of-the-century France or something.**

**Ren:** Well, first of all, this building was designed by a Japanese architect and decorated by companies and artists from Russia, Greece, China, and Japan. The layout of this building has the basement be an exhibition hall of our products and technologies, and our customers can chat over a cup of coffee up here after their visit. The architect had several different ideas and combined them all together in order to finish this entire building.

The Songshan Lake campus, Xi Liu Bei Po Cun, which you visited this morning, was also designed by a Japanese master architect Okamoto. He got his bachelor's, master's, and doctorate in the US but doesn't speak good English. His designs you see here today with elements of European classicism are accepted by our review panel. But this design has nothing to do with our

company's philosophies.

02

***SVT:* Your building here feels like it has an international environment, but still there are a lot of countries like the US, maybe the UK, and now potentially even Sweden that want to make laws banning companies that they think might be a security threat. What does this mean for Huawei and what does it mean for a country like Sweden?**

**Ren:** I fully support the EU's new strategy about digital sovereignty. In the past, we cared a lot about material wealth, so geopolitics was very important. Today, we are in an information society. Since information has no boundaries, digital sovereignty really matters. The new strategy of the EU requires that everything should be based on facts, a company should promise to not commit any wrongdoing, and then be subject to review. If this company has not broken its promises, it is a good company and can survive in Europe.

Of course, these EU rules apply to every company, not just Huawei. I think the coordinated risk assessment report the EU has published on the cybersecurity of 5G networks can be carried out in any part of the world.

So I see this report as being positive. We are not worried about it at all because we have never done anything wrong. So we are not worried about more

rules and may have more opportunities as long as the rules are only about stringent reviews.

**03** ***NRK:* Huawei is at the forefront of two big international struggles. One is the trade conflict between China and the US which also spills over into Europe. The other has to do with the allegations that Huawei can be a tool for espionage. What is your straight answer on Huawei's position, and how do you defend Huawei on these two fronts?**

**Ren:** First, I want to make it clear that the trade conflict between China and the US has nothing to do with Huawei. Huawei has virtually no business presence in the US, so whatever the result of the China-US trade talk ends up being, it won't have an impact on us.

Second, though the US has put us on its Entity List, we have now used our own chips in the vast majority of our products. In the past, we limited the use of our own chips and used more chips from the US. We did this so that we could keep good ties with US companies, which have maintained strong relationships with us over the past three decades. Why did we stop using their chips all of a sudden? When the US suspends our supply, we have to start using our own chips on a larger scale. We have been preparing this for years. It didn't happen all of a sudden. The US government thinks cutting supply

to Huawei will give them a leg up in its trade war with China, but really, it fails to hit its target. The sales of its own companies have been weakened instead.

Third, in terms of cyber security, Huawei has been faced with accusations from the US. But as you know, these accusations are groundless. Our sound track record has proven that Huawei is a reliable company. Over the past 30 years, we have served three billion people in more than 170 countries and regions. Even today, there hasn't been a single incident of data theft. An article published by the Lithuanian newspaper *Lrytas UAB* implied that the leaked information of the African Union was allegedly related to Huawei. The Lithuanian court has obliged *Lrytas UAB* to publish a statement to retract its false statements and apologize to Huawei. Our 30 years of sound track record is a testimony to people in Northern Europe that we are credible.

What will things be like in the next 30 years?

Mr. 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 a statement at the Munich Security Conference that China has no law requiring companies to install backdoors. Premier Li Keqiang reiterated this point at a press conference following a recent session of the National

People's Congress. So, from simply a policy perspective, we would never install backdoors in our equipment.

And from the perspective of our best interests, the backlash of a wrongdoing like this would spread around the world, and our business credibility earned through 30 years of hard work would be damaged. With all our employees running away, I would need to repay tens of billions in bank loans for the company. So I have no motivation for doing something like this. I can promise people in Northern Europe that we respect their digital sovereignty and would never do anything that would violate it.

Fourth, let me make a quick example. When a truck manufacturer sells a truck, the driver decides what the truck will carry, not the truck manufacturer. So, when our telecom equipment is sold to a carrier, it is the carrier and the local government that control and govern the data, we don't. So it is impossible for us to steal anything. We are a firm supporter of digital sovereignty.

That's why the US's accusations are groundless and they haven't presented any solid evidence to support these accusations. These are purely speculative and not the truth.

**04 NRK: Norway is an ally of the US and a member of NATO. It's under pressure from the US, and just**

**recently, Telia, who is its second biggest carrier, decided that they would use Ericsson for their 5G technology. And then there's Telenor, Norway's biggest carrier and one of Huawei's big global clients, who will make their decision about 5G later this year. Do you think that the decision by Telia was made based on network speed and quality or did political factors come into play?**

**Ren:** We respect whatever decisions our customers make, which is basically the same as buying clothes at the mall. Everyone has different tastes, so our customers are going to buy whatever they want. There are countless carriers around the world, and it's impossible to make every single one of them like us. We were not able to do this in the past, and it is even less likely for us to do so given the current situation we find ourselves in.

**NRK: Are you excluding the possibility that the political climate has influenced Telia's decision?**

**Ren:** I'm not a decision-maker at Telia, so I could not tell you if their decision was politically influenced or not. As of now, we have signed 60 contracts for 5G and have shipped 400,000 5G base stations. And these numbers are still going up. Decisions made by one or two customers do not represent how the majority of our customers feel about Huawei.



05

**Y/e:** You mentioned shortly that you have been able to become self-reliant. I would like to hear more about this. How did you get to that point? Where do you feel you have been able to do it well and where do you feel the difficulties of being on the Entity List?

**Ren:** To be frank, we have not seen a substantial impact of the US's attack on our communications domain. The attack is primarily against 5G and core networks. I can tell you that our revenue from the communications domain, including 5G and core networks, will not decline this year; in fact, it is estimated to grow a little. We will see growth with our communications domain, especially with 5G. There is little impact in this domain.

Our consumer business, however, will be affected. If the US does not allow us to participate in the Google ecosystem, we will see it play out in overseas markets.

We also find ourselves slightly behind US companies in intelligent computing and need to double our efforts to catch up.

**Y/e:** What's your view on what's happening in the industry as this divide seems to grow? If it continues, do you think you will be able to build sort of another ecosystem besides Google? Will you be able to match their strength?

**Ren:** We have a good working relationship with Google. Even if we develop our own ecosystem, that ecosystem

will not be used to compete with them. I think if the world has ecosystems by Apple, Google, as well as Huawei, it will help advance our societies. We have never considered anyone as an adversary.

**06 DR: You've said very clearly that if Beijing ever asked Huawei to spy on their behalf, you would close this company. I'm very fascinated by this answer. How would you in practice do this? It's very clear that you have a very powerful Chinese government and you have a president who doesn't tolerate dissent. How would you in practice close Huawei and make sure that was not a state takeover?**

**Ren:** The Chinese government has never asked Huawei to spy on their behalf. In the past, they didn't even know networks could have backdoors. Since the US started making baseless accusations against Huawei, the Chinese government started to take cyber security seriously. It has taken some time for China to come to this level of awareness.

We have been subject to the strictest evaluations in the UK, performed by world-class technical experts. According to their findings, Huawei has no malicious cyber security issues, but the quality of our software has room for improvement. The UK has placed trust in Huawei, and our business has developed very quickly

there over the past decade. We also place huge trust in the UK and have established our own cyber security evaluation center there.

***DR:* Even as powerful as you are, can you say no to Beijing, say no to the Chinese President and leadership?**

**Ren:** 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 China has no law requiring companies to install backdoors in their equipment. During a press conference held after a recent session of the National People's Congress, Chinese Premier Li Keqiang reiterated this point. These are all directives from top government officials.

07

***Dagens Industri:* In an interview with *The Economist*, you recently proposed that you could license all your 5G technology to a non-Chinese company and allow them to use your 5G patents on fair, reasonable and non-discriminatory (FRAND) terms. Have you had any reactions to that statement yet? And have you had conversations about using your 5G patents with Ericsson?**

**Ren:** First of all, this is a very big decision that will not be made quickly by any company that might be

interested. Ericsson does not need to buy 5G patents from us because we have already signed cross-licensing agreements with each other. Patents are shared between our two companies. Ericsson has what it needs to develop 5G technology and does not need to spend huge sums of money to buy 5G patents from us.

I think US companies are the ones who need our 5G patents, because they don't have these 5G technologies or patents in the US. Without them, it would be difficult for the US to move forward. So far, we haven't seen any reactions to our offer from big US companies.

***Dagens Industri:* No reactions from any big American companies on this?**

**Ren:** Correct. We've heard from some intermediaries who want to play the middleman, but they don't represent any big US companies. I don't think the reactions from the intermediaries are that important at the moment. What's important is for us to directly communicate with big US companies.

**08 *Dagens Industri:* My second question, so the United States is contemplating funding money to issue credit to your competitors, including Ericsson, to make it easier for them to compete with you. What's your view on this business practice, this trade practice? Do you find that fair, especially off the back of the fact that**

## **the United States is blaming Beijing for state support of its companies?**

**Ren:** First, it is understandable if the US government issues credit to Ericsson and Nokia, or customers that buy equipment from them. It is a positive measure that we understand and support. I think this is good for society, because new things cannot collect funds as soon as they start developing. So I understand and support what the US government is doing.

Second, Huawei is unable to receive such financial support. Over the years, our business operations have provided 90% of the capital we need and are continuing to contribute cash flows to the company. So we have sufficient cash. Our rapid growth over the years is attributed to sufficient money and simple decision-making processes.

In the capital market, many shareholders often spend so long arguing that an age has passed before they have finished. However, we have a unified will at Huawei when it comes to decision making, so that we can quickly decide and invest large amounts of money in certain areas. This is a characteristic of our management.

Providing buyer's credit is a common practice internationally, so it is understandable for any country to help its export companies. For example, airplanes are bought through financing and leasing. Airlines have

to pay off the money to banks in seven or eight years before they own the planes. Financing and leasing are common practices all over the world, so we support the US government's funding for Ericsson and Nokia. If their market shares increase while ours decrease, there would be no conflicts between us.

09

***Helsingin Sanomat:* My question is about reputation. Some people see Nokia's reputation as more transparent and more reliable compared with Huawei's. Can you describe your personal view on that? Is Nokia as pure and innocent as some people see?**

**Ren:** Finland is a great country. I have two reasons for believing this. First, today's Android system originated from Linux, which was invented in 1991 by a Finnish person. Linux then went open source and evolved into today's Android. Finland has made significant contributions in this regard.

Second, we worked with the University of Tampere and invented block-matching and 3D filtering (BM3D) technology for noise reduction. With this technology, people can use cellphone cameras to take clear photos in the dark. This technology was initially found in an academic paper from a Finnish university.

Third, Nokia is a role model that we used to admire. Nokia started as a pulp mill and developed into a

leading global cellphone maker. But Nokia later took a detour during the course of its development. The company stuck with the path of the Industrial Age, which placed quality as its top priority. Nokia phones were the only phones that could be sustained for almost 20 years. Someone once asked me to help repair his phone. When I found that it was a Nokia phone dating back over 20 years ago, I thought he should take it to Nokia's museum in exchange for a new one. This example showed that Nokia was determined to follow the path of the Industrial Age.

Technologies evolve very rapidly in the information society. The quality of mobile phones is now overshadowed by customer experience, but Nokia has failed to keep pace with this trend. However, Nokia is still a great company.

Some people always think that Huawei is not transparent. But in fact, Huawei is highly transparent. Our financial reports have been audited by KPMG for over a decade, and our financial statements clearly explain where our money comes from. The US government should take a look at these statements.

Some people think we are not transparent because we haven't gone public, but this doesn't make sense to me. Huawei adopts a new model under which its funds are collected from its employees. This may even

become a model for most companies in the future. How is this model different from those of Northern Europe? There is no difference at all. In other words, we embrace employee capitalism, instead of the large-shareholder capitalism adopted by Wall Street, and there are no zillionaires at our company. Under employee capitalism, many employees are getting a certain amount of shares, providing assurances to them once they are retired or if they get sick. Isn't this modeled after those of Northern Europe? Don't you embrace people's capitalism? Northern Europe does not have zillionaires, but it is still one of the richest places in the world.

Norway is very wealthy, but the people there still drive small cars and live in small houses. Every time I return from Norway, I ask our employees to learn from the country. In China, people tend to buy big cars and big houses. Since we are still a developing country, how can we live such luxurious lifestyles? We should be saving money for production and investments.

Our company is transparent throughout and exposed under the sunshine. Over the past 30 years, people around the world have kept a close eye on Huawei, including the Central Intelligence Agency and other US government agencies. They've continued watching us but haven't found any problems. Isn't this a proof of our transparency? We are just as transparent as Nokia.



**10** *Helsingin Sanomat:* About Mr. Xi, you are a really powerful man in China and member of the party. Can you describe your personal relationship with Mr. Xi Jinping and the last time you met?

**Ren:** I only met President Xi once at Huawei's UK office in 2015.

*Helsingin Sanomat:* You don't think you will meet the Chinese President again?

**Ren:** Maybe. It would be nice to see him again, but I haven't got any invitation yet.

**11** *SVT:* Still you may have been personally affected by this rift between the US and China since your daughter has been arrested in Canada. How do you see that? Is that designed to put pressure on you and your company or designed to put pressure on China more?

**Ren:** As for the case regarding my daughter's detainment in Canada, this will be decided by the law.

*SVT:* You don't think that has any relationship to the tense situation between the US and China?

**Ren:** Right now we can't know for sure if there is a relationship. My daughter is a grown woman, and she can handle the challenges herself. I have three kids, and they are all independent and strong-willed. I have been married twice. Right now, I am married to Yao Ling.

She is a kind and responsible mother. For 20 years, she chose to stay home to take care of our daughter, teach her to be diligent in her studies, and help her form good habits. My youngest's achievements are the result of her own strength and the education she received from her mother. I have always been busy with my work and didn't spend much time with my kids during their childhoods.

I think letting kids face some challenges isn't necessarily bad for them. As for the challenge now facing Wanzhou, I hope it won't get tangled up with state affairs. I don't think the country should make concessions for us, because they may have to sacrifice the interests of the less privileged. We think we should solve the issue by relying on the law and the courts.

**12**

***NRK:* In the current political climate, what is your advice to the big carriers that will now decide on 5G? What should they base their decisions on regarding which to choose and to what extent should they listen to their own government? What would be your advice to European countries' governments in the current political situation?**

**Ren:** I fully support the digital sovereignty proposed by the EU. Digital sovereignty is as important to a state as their geographical sovereignty. Geographical

sovereignty relates to geopolitics. This is not the case with digital sovereignty because information flows globally, so digital sovereignty is necessary. I agree with the idea that every country should establish their own digital sovereignty, and I fully support the strategies and requirements of digital sovereignty. We will try our best to contribute to the infrastructure they need in the EU. We are committed to going open source with our key technologies such as compilers and MindSpore framework for AI and Kunpeng products for European and global developers. European companies can innovate based on these open platforms, and their innovations will impact the world and extend to China. This will help improve their economic and revenue structures. We aspire to support the development of at-scale digital ecosystems in Europe.

***NRK:* Given the current political climate, how important is technology, speed, and quality in products? How important should each of these things be in decision making?**

**Ren:** It's very hard to say. Different people like to buy different things. There is no standard way to decide what to buy. It wouldn't be practical for shops to only sell Hermès bags and not sell any other brands. Shops will sell different commodities for different uses. I don't think it's appropriate to buy things based on political factors. Products related to infrastructure have long lifecycles,

and if you lag behind at the beginning, it becomes hard to catch up.

For example, Europe lagged behind China more than a thousand years ago. China's prosperity in its Tang and Song Dynasties is reflected in classical Chinese paintings like *Along the River During the Qingming Festival* (Qingming Shanghe Tu). Why did Europe develop faster while China fell into poverty over the last few hundred years? Because Europe invented the train and steamship, while China was still using horse-drawn carriages. Carriages move much slower than trains and carry less cargo than ships. Therefore, Europe developed, and China lagged behind in terms of industrialization. Speed determines achievement.

As for 5G, I think people should choose products that are able to deliver fast speeds, large bandwidths, and low latency for the development of an information society. 5G has presented new development opportunities, and we should choose the best equipment. I think products made by Ericsson, Nokia, Huawei, and Samsung are good choices, and are able to support decent networks. Carriers make their own choices based on their own decision-making mechanisms. They need to take speed into consideration, because speed is critical to social advancement. Trains and ships were faster than Chinese carriages, so Europe developed faster than China.

**13 Ye: One thing that has certainly happened is that China has caught up on the ship and horse carriage game. So how did Huawei manage to overtake Nokia and Ericsson and why is there no mobile network company in the US? What is the Chinese idea? Why has it worked so well?**

**Ren:** First, Huawei, Ericsson, and Nokia are on good terms. We worked together to create industry organizations like the 5G Automotive Association (5GAA) and the 5G Alliance for Connected Industries and Automation (5G-ACIA), which are set to contribute significantly to Europe's industrial development. Europe is known as a talent hub with a small population. With AI, Europe will be able to produce a massive quantity of goods with a relatively small workforce. There's a lot to look forward to in terms of what AI can bring to Europe. 5G is just a supporting pillar of AI. We are working with Ericsson and Nokia in good faith to advance the development of 5G.

As we move forward, conflicts between us will inevitably arise. But I would characterize our relationships as competitive and cooperative. Both competition and cooperation are important to drive us forward.

**Ye: For the telecom companies in the US, there were competitors from there, and now there aren't any. Do you think that there's some sort of difference between**

**you? Why did they vanish? Why didn't they manage to compete with you and the Nordics?**

**Ren:** The US companies chose the wrong path. In terms of technology, the US is the most powerful country in the world. With its strong influence, the US strong armed the world into accepting CDMA and WiMAX. However, European standards – WCDMA – eventually became mainstream. US companies failed to follow through the 3GPP approach in their research. As a result, their tech didn't sell well abroad, which hurt their financial performance. Huawei's rise can't be blamed for US companies' decline. They vanished because they chose the wrong path.

**14 DR:** **In the interviews you actually praised the American President. You've even said it's good that he lowered the taxes in the US. At the same time, a lot of people would probably say that he's also the architect of a lot of your troubles – your personal troubles, your company's troubles. What do you actually think of the American President?**

**Ren:** I think the world should learn from the US president and lower the taxes so that businesses can earn more and develop more rapidly. Tax cuts aside, Mr. Trump is also wielding the stick against many countries, which is deterring foreign investment. Tax cuts were

meant to attract foreign investment. If everyone is afraid to invest in the US, who will fill the revenue gap caused by the tax cuts? With less tax revenue, the US will find itself in a difficult financial situation.

If the US were nicer to other countries while lowering taxes, it would be a great boost to the US economy. However, the US is lowering taxes on one hand, and getting into trouble on the other hand.

The Chinese government is also cutting taxes, bit by bit, to reduce pressures on businesses and inject vitality. We believe all countries will eventually go down this path, because no country will be able to afford an excessively expensive welfare system.

***DR:* You must have some days or evenings when you dream a little bit of Donald Trump losing the next election.**

**Ren:** First of all, Trump has never appeared in my dreams. I don't miss him that much.

Second, whether or not he is re-elected will not affect us all that much. Whoever the next president is, we don't expect Huawei will be removed from the Entity List. No one in the US will speak for Huawei. Therefore, we are mentally prepared to remain on the Entity List for a long time. We must get used to living with it.

At Huawei University, classes often begin with a

warm-up video of students from China's Hengshui High School doing morning exercises. It is a high school in an underdeveloped county. We all know that it's very difficult to change China's education system and the general teaching methods, and the school knows this too. But they changed their methods to adapt to the external environment and achieve success.

What have we learned from this high school? We can't change the world and we can't change our external environment, but we can change our own methods so that we can achieve success within the existing environment.

The US may or may not elect a new president, but this will not change their policy towards us. We must be mentally prepared for this for a long time to come. If we rely too much on luck, we may one day fail.

**15** ***Dagens Industri*: I would like to come back to the issue of Huawei and possibly other Chinese tech companies becoming self-reliant on equipment, and how this turbulence has added more urgency to this issue. You said, for example, using your own chips will boost your profits, which I found interesting. I would like to hear a little bit more about how it would boost your profits. And could we draw the conclusion that this trade war, this tech war, has actually been in favor of Huawei and**



## **Chinese tech companies in your push to become more self-reliant on equipment?**

**Ren:** First of all, we don't want to see de-globalization happen. We should firmly pursue globalization. We have been forced to use our own components as a last ditch effort because the US stopped supplying us with their components. We don't want to collapse, so we are using more of our own components. But in the long run, we believe globalization will create more wealth for humanity. We firmly believe in globalization.

Will some Chinese companies grow big enough to overtake US companies? That's possible. But we are not counting on this possibility. I think the US is still the most powerful country in the world. We are not seeking de-Americanization or trying to decouple from the US. We have contingency plans in place to offset the impact caused by the US denying our access to US suppliers.

16

***Helsingin Sanomat:* How do you see China's national security law and how does it affect Huawei? For example, a part of the law says individuals and organizations must cooperate with national security officers if needed. So does Huawei need to obey the law, too?**

**Ren:** I don't quite get what this part means. Chinese leaders have clearly stated that no Chinese law requires

Chinese companies to install backdoors in their equipment, and we comply with this instruction.

## **17** *S/V*: What's next after 5G? How do you see the future for Huawei and for competitor companies?

**Ren:** I think that following 5G, we will see the large-scale adoption of AI, but there are three basic preconditions for that. First, the availability of super-computing systems. Second, the availability of super-large-capacity data storage systems. And third, there must be super-fast connections between these two systems. When these conditions are met, AI will have huge potential.

In fact, AI was proposed by Alan Turing of the UK in the 1940s, but it only began to be applied 60 to 70 years later. Why is that? It's because these three preconditions had not been met until now. 5G is only a tool that supports AI with its low latency and large bandwidth. I believe that AI will develop rapidly around the world.

I think Europe will benefit most from AI, because European industry has very advanced systems engineering. They can use less labor to make more and better products. Europe is well positioned in this regard, because it has a relatively small population and has a well-trained workforce. With AI applied in production systems, they will be able to make more products. That's why I think that Europe will benefit most from 5G and

AI. Huawei, Ericsson, and Nokia have set up the 5GAA and the 5G-ACIA. Both of them will promote better use of AI in production systems.

Will China also benefit this much from AI? I don't think that will be possible in the near future. This is because China's industry has just moved from manual to mechanical. The next step will be to move to automation and then to digitization. Only after we go digital will AI have a major role to play. So it will take a longer time for AI to play a role in China.

## **18** *NRK*: How do you think that 5G and artificial intelligence will change society and the way we live?

**Ren:** This question is too complex for me and I don't have enough knowledge to give a proper answer, but I can give you two examples.

In China, there is a 500-hectare farm that entirely relies on AI for production management, with no farmers working there. There is also a mine in Northeast China, but its operators are located in Shanghai.

If there were another disaster like the explosion at the Chernobyl nuclear power plant, we wouldn't have to send 600,000 soldiers for rescue and cleanup operations, like the Soviet Union did; we could use AI to operate robotics instead for the rescue efforts. Even today, we

are moved by the spirit of sacrifice demonstrated by these Soviet Union soldiers. The first one to charge in, shovel in hand, was a lieutenant general. People can be exposed to high levels of radiation for 45 seconds at most; any longer could be fatal. At the time, 600,000 soldiers and thousands of helicopters carrying earth were sent to bury nuclear waste.

I don't know whether you have visited our mobile phone production lines. If you have, you may find that we have only a few people on the production lines. This is only partially intelligent production. If Europe uses this mode of production on a large scale, they would make more products with relatively few workers. This will translate into higher yields and returns and significantly reduce social conflicts.

What will AI ultimately bring to future society? I'm not sure. I'm still envisioning what AI will bring as it continues to develop.

Europe is the first region that has proposed the concept of digital sovereignty. I think it's a very wise decision. It acts as a lighthouse and sets a benchmark for the development of information society around the world. We used to emphasize physical boundaries because of geopolitical factors. We used to claim that things like mines and trains were all ours. Now when information travels around the world, digital sovereignty

becomes necessary to support national development. We will resolutely support this concept.

We will go open source with our AI ecosystem to support the innovation and development of European start-ups and small businesses. Our goal is to share success with our European partners, not to be the sole winner.

**19**

**Y/e:** It seems that everybody is happy with the cyber security report that the EU made. Even the US is happy with it and you're happy with it because it doesn't mention names, but the US thinks that some names are written between the lines. How do you see this? Is there a Chinese company name between the lines of the EU cyber security report?

**Ren:** I don't think so. First, the EU has proposed that everything should be determined based on facts as that is fair to all vendors. Second, vendors should first promise that they will not build backdoors into their equipment and then should subject themselves to review. I think this is a scientific approach as it applies to all vendors. We support and welcome this approach. Different countries and people, including lawmakers, may have different interpretations or opinions. I think the conclusions of the report are fair.

20

**DR:** You started your career in the Chinese army, the PLA, and later on you created this empire. Do you understand why some people outside China are very confused? Are you basically a good old communist inside, or a capitalist? Do you have to choose between those two?

**Ren:** First, every soldier that chooses to leave the army is going to look for a new job. It's like this in every country. In total, the Chinese army has discharged tens of millions of soldiers; it would be ridiculous for all of them to stay at home and not work. I was just one of these soldiers.

Second, regarding what kind of ideology Huawei follows, we don't really have a pretty label for what we are. There are over 90,000 employees who hold shares at Huawei. Even though I have more shares than any other individual, I only have less than 1% of all shares. Of course, our mechanism may not work for other companies, but it works for us as a technology company. The company's wealth is in the brains of our employees instead of any special quality of mine. If I were to hoard all the rewards, people wouldn't stay with Huawei, and nothing would be left. We distribute shares to employees according to the value of their brains. This is the foundation of our so called ideology. It's not specifically based on any traditional ideology. I don't

know what to call it exactly, but I guess it may be called employee capitalism.

**21** ***DR:* Decisions about this company, also about the Union and the stakeholders. Aren't you still the actual person who, at least for a couple of years, will guide the direction of Huawei?**

**Ren:** Operational decisions are actually out of my hands, and I don't directly manage anything in particular. Instead, the Board of Directors does all of that. I do have the right to veto decisions on certain major issues, but I've never actually used this right. I just consult with members of the Board of Directors on major issues.

**22** ***Dagens Industri:* I would like to ask you again about how you see your chips increasing profits. To me, it sounds tremendously expensive. Could you explain to me how developing your own chips and your own operating system, developing other equipment and services will affect your revenue and profits going forward?**

**Ren:** When people buy chips, what they are actually buying is the use of a bunch of math and physics equations. We had already been developing the data models for those equations, and that cost was already

covered by our operational budgets over the years. Companies that don't develop their own chips need to bear this cost when they buy chips from other companies. This part is rather profitable.

Second, we manufacture a large number of chips. We will produce 270 million smartphones this year. Producing such a huge number of smartphones means that we may need to source chips from several different chip makers. We don't just use things on a small scale. Once you scale out these things, the cost drops.

***Dagens Industri:* Will you start selling chips to other companies too? Is it possible in the future?**

**Ren:** We don't currently plan to do this.

**23 *Helsingin Sanomat:* What are your personal views on Huawei products? Do you use social media? Do you prefer to read your news online or in the paper? Are you a tech nerd or more of a traditional type of man?**

**Ren:** I use social media, and I look at stuff online. I mainly look at criticisms towards us, and I pass those criticisms on to relevant staff. I do this to remind them to check for problems with our products. As we all know, our products are used by billions of people. When people use our products, they are likely to find problems that are hard to identify in the lab. Some people post



what they identify online, and when I see such posts, I am grateful, because then I can check with the relevant department as soon as possible to see if any improvements can be made.

We have an internal web forum at Huawei called the Xinsheng Community, where many employees criticize the company. We don't think they are bad employees for criticizing us, and instead understand that most of them are probably really good employees. If an employee's criticism is useful, our Human Resource Management Department checks their performance records for the last three years. If they have done well, we actually bring them to our headquarters to work for three to six months. During that time, we give them training to equip them with more knowledge, and then send them back to their original posts. They might be promoted in the future after that. We wouldn't promote an employee just because they identify problems. Instead, we promote them after they make contributions on the frontlines. Our internal criticism platform is open to all our employees, and is like a Roman Forum where large-scale debates take place. It's a tool that helps us self-correct. This is similar to what happens in the US. Being able to self-correct makes the US a great nation. Trump is a great man, but his staff also criticize him. The US can correct itself if it makes mistakes. Like the US, we also have a self-correction mechanism. I've made

looking at online posts a bit of a habit. I skip the good things people say, but look at the bad and pass it onto the relevant people.

After dinner, I normally read news, go for a walk, and take a shower. After that, I do a bit of email and look at people's comments about us before going to sleep around one o'clock. I forward anything I find to relevant people, sometimes as late as midnight. I know this makes some people wonder whether I actually sleep or not. In fact, I just send the comments when I wake up and see them in the middle of the night.

### ***STV*: So no nightmares about Donald Trump?**

**Ren:** No, none. I actually feel like I need to thank Trump. After the company's 30 years of development, the majority of our employees have become fairly rich. However, this has made them complacent and they have started slacking off. Shenzhen is a great place to live, so why would they want to go and work hard in places like Africa and risk diseases like malaria? If all employees think this way, the company is bound to collapse soon.

However, with Trump brandishing his stick, our employees became nervous and aware that they must work hard to till the soil. That's why our sales revenue has increased, and our company has not collapsed yet. This is the result of our employees' collective efforts.

In this sense, I don't think Trump is a bad guy. Our

employees were scared because he intimidated Huawei. I also used to intimidate our employees, but the stick I used was not as large as Trump's. So his intimidation played a big role in driving our employees to work harder than ever before.

**24** *STV:* **What would other Western countries risk if they follow the US example and ban Huawei?**

**Ren:** I think other Western countries make their own decisions based on their own interests. There is no way they will all follow in the US's footsteps, because the US doesn't share what it earns with these countries.

If the US shared the money that it earned equally with other Western countries, it would make sense for these countries to follow the US. But the US only cares about its own interests, and even adopts its "America First" policy, showing it doesn't put its allies first.

That's why we believe that all countries will make their own independent decisions.

**25** *NRK:* **People are saying that you and President Trump are men of the same generation. If he said "I want to see Huawei for my own eyes," "I want to visit Mr. Ren," what would you show him?**

**Ren:** I would show him anything he's interested in, and

even give him a hug. It's just like when you visit our exhibition halls, you can film and photograph what you see. When reporters from AP visited our facilities, they even took photos of our circuit boards. I don't think it matters. If he wants to, he is even welcome to visit my office, though my office is not as nice as his.

**26** *Ye:* **5G is a political thing, a cyber security thing. And next, there is AI, as you just said, it will be the same. As you said, you don't expect to be removed from the Entity List soon. So isn't it certain that there will be some divides or de-globalization in the technological world?**

**Ren:** I don't think that would happen. If we build a localized ecosystem in Europe, and support the separate development of companies in different countries, then these companies would not necessarily have strong relationships with Huawei. It would be impossible for the US to impose sanctions on each and every one of these companies, so they would still have the opportunity to develop. Huawei alone is not sufficient to change the trajectory of globalization or the way things work.

**27** *DR:* **A lot of people are scared of the rise of China, probably because of the different political system here. Do you think China has any responsibility for this fear,**

**not only in Denmark, but in many countries? And what would you say to people who are somewhat afraid of a powerful China?**

**Ren:** Denmark is a great country that I have a lot of appreciation for. It is a country that encourages intellectual and academic freedom. That's why Danish people have come up with many great inventions, like Niels Henrik David Bohr, the father of quantum mechanics, and Hans Christian Ørsted, who discovered electric currents create magnetic fields.

I have visited Denmark several times, and I've also studied Denmark's social structure. Denmark implements flexible labor laws, which allows companies to fire incompetent employees for justifiable reasons. But the Danish government has also established training institutions to help these people upskill. Companies in Denmark have become more flexible and efficient in terms of workforce deployment, and pay more taxes. In doing so, Denmark has become a country where employees enjoy decent pay and huge benefits.

If a country overprotects labor, companies operating there would not dare to hire large numbers of employees, making it difficult for them to develop into larger companies. This would bring about many difficulties for this country. So without overprotection of labor, a country actually protects its labor to the largest

possible extent. In this sense, Denmark has made huge historical contributions. That's the way forward.

I think China needs to learn from the education and labor systems in Denmark. Why can't China build technical training centers on a large scale, so that the unemployed can receive training and upskill themselves at the government's expense? Without these burdens, companies can go all out to make more money, and pay more taxes, which could then fund more workforce training. This would then help upgrade China's entire workforce, making the entire country progress faster.

**28**

***DR:* China has been good enough to explain what it wants with all this power and all this wealth that has come to this country over the last four decades.**

**Ren:** Actually, China's top priority is to lift people out of poverty, because there are still tens of millions of people in China living below the poverty line. The Chinese government is determined to eliminate poverty by the end of next year.

You've been to some coastal cities in China, like Shenzhen and Shanghai, but I would imagine you haven't been to many remote areas here. These coastal cities are not fully representative of all of China. There are many less developed, poor areas in West China.

China must build its strength if it wants to address the poverty issue in its less developed areas. It needs to build infrastructure like railways, roads, and power grids, which can help modernize those poverty-stricken areas. China should remain dedicated to eliminating poverty.

Another important issue for China is to improve its education systems. For example, 70 years ago, 70% of the Chinese population were illiterate, like a person in the West who doesn't understand A or B. Now, there are basically no illiterate people in the country, but there are still many who know little to nothing about science and technology. This is why I think China should establish more vocational and technical schools, so that ordinary people can master technical skills for better employment. This will ensure greater stability in the country, and stability is the foundation of development.

China has been exploring the right path for decades, and shifted from the planned economy to the current system.

30 years ago, Shenzhen was nowhere near as ordered as it is today, and China has been establishing this order gradually. Now, China has developed its own well-organized system. As long as you don't go over the top, you can say anything. That was not the case 30 or 40 years ago. At that time, I would not have even dared to talk to you. If I saw you in the street, I had to turn

around and run away immediately. I could have been suspected of wrongdoing if I even brushed past you.

Now China is much more open, and I can talk with you as I like. I'm telling you the truth without polishing anything. I believe China is moving further towards modernization and democracy. It might not be considered satisfactory by people in the West, because you tend to compare China to Western countries, and because you have been on a journey of modernization for several centuries. But people in China are quite satisfied because the country has been improving day by day.

29

***Dagens Industri*: A question about this wolf culture that Huawei is so famous for. I met several people who worked many years for Huawei, long before you were a world leader, when Huawei was still a challenger. Would you say this last year's turbulence has brought back the feeling of the company being a challenger again and how important is this wolf culture, this fighting spirit, and how does it apply internally when you compete globally?**

**Ren:** The term "wolf culture" was coined by people outside Huawei to satirize us. We didn't come up with the term ourselves. The idea originated from an article where I said that we could learn from wolves' teamwork



and perseverance. In the article, I talked about how wolves have sensitive noses, and can smell meat from far away. I hope our employees can learn from wolves to be sensitive to market opportunities and technological development trends. Second, wolves do not hunt alone, but work in teams. This teaches us to value teamwork, and not to fight alone. Third, wolves are tenacious and unyielding. They keep fighting even if they fail at first. We hope our teams can learn from this spirit.

Since not all people can become wolves, they can learn from an animal called "Bei" from ancient Chinese legends instead. Bei were very smart animals, but had short front legs and long hind legs, so they couldn't hunt alone. They had to work with wolves to capture their prey. When they hunted, they held onto a wolf's back. If they saw the wolf running to the wrong direction, they would push it onto the right path. Together, these two animals made a perfect team.

However, in Chinese, the names of these two animals have negative connotations. For over 5,000 years, Chinese society has always been relatively conservative. In our culture, people tend to dislike being too aggressive, and view acting proactively as a negative thing.

Because of this, we didn't come up with a "wolf culture" metaphor on our own. It was proposed by

outsiders. In fact, when people first used this term, they thought badly of Huawei. Some experts even wrote that wolves were cruel because they would steal meat from other animals. But that is not what my article was talking about at all. I doubt whether those people read the full article I wrote. But Huawei was not developing very well back then, and many people had a negative perception of Huawei, so this term became quite widely known.

***Dagens Industri:* Do you feel the fighting spirit in the organization has increased over the last six months or the last year because of the turbulence, the trade war, and the tech war?**

**Ren:** Yes. It has increased. We no longer slack off now, and are becoming stronger and stronger.

**30** ***Helsingin Sanomat:* Thinking about the future, where is Huawei looking to down the road? And where will Huawei's revenue mainly be from? Maybe Africa or Asia?**

**Ren:** I think most of our revenue will still come from China and Europe.

**31** ***SVT:* Being from Sweden, I have to ask, what do you think about Swedish ICT ecosystems and knowledge in**

## **IT and telecom?**

**Ren:** I think Sweden is a great country. Over 20 years ago, when I told the Head of the Guangdong Communications Administration Cui Xun that one day we would catch up with Ericsson, he just laughed at me and said it was impossible. He told me how Sweden does a great job providing universal education and facilitating scientific and technological innovation, and how many new technologies emerge from Sweden.

We are now building a new campus for our Huawei University and the first phase will be finished in the beginning of next year. Its design was inspired by the buildings in Sweden's coastal areas. I think we can learn a lot from Sweden, in terms of both dedicated spirit of the Swedish people and Swedish culture as a whole. Chinese people are beginning to win the Nobel Prize awards. I truly feel that China is making much progress.

***SVT:* Twenty years ago you didn't think you would reach Ericsson's level, but today you think you're ahead of them, at least on 5G. Why? What happened?**

**Ren:** I think the first reason is that we knew we were lagging behind. So we spent more time on our work to try to catch up, even sacrificing the times that other people use to have coffee. Second, we are very open. We collaborate with research institutes and universities all around the world, and provide funding for their

research. For example, the theory behind massive MIMO, a key 5G technology, was first proposed by a professor at Linköping University in Sweden, and Huawei was the first to apply the technology to products. To sum up, since we knew we were lagging behind, we have been working all out with partners around the world to catch up with other world leaders.

32

**NRK: Your life is in many ways a testimony to China's development. Your generation experienced the Cultural Revolution. You have talked about how you saw French textile machinery and how that influenced your thoughts during the Cultural Revolution. How did China's Cultural Revolution shape the way you think and the way you shaped Huawei?**

**Ren:** I'm an eye-witness to how the People's Republic of China has grown into what it is today from when it was founded. I lived in an extremely poor region when I was a kid, and I saw what life was like for poor people with my own eyes. I also witnessed many political campaigns and how China struggled and kept moving in the wrong directions by constantly swinging one way to another.

I think the Cultural Revolution is the biggest mistake China has ever made, and it had an enormous impact on the country. At that time, China built the Liaoyang Synthetic Fiber Factory with equipment imported from

two French companies, Technip and Speichim. During my time at the factory, I had access to world-leading technologies, and was able to distance myself from the radical revolutionary movement. As China sought revival after the collapse of the Gang of Four, I had the opportunities to put what I had learned into practice. As a result, I grew rapidly during that period. Later, China significantly downsized its military so that it could focus on economic development. After my entire military unit was disbanded, I came to Shenzhen, which was then at the forefront of China's reform and opening-up.

At that time, I knew very little about the market economy. For instance, I didn't even know what supermarkets were when many friends who had studied abroad came back and told me about them. I knew nothing about them and could only guess what they were like or why they were called supermarkets. Just imagine how difficult it was for someone as ill-informed as I was to go into the market economy!

At first, I worked as the deputy manager of a small company and had very little power. Other managers were directly appointed top-down with certain titles; some of them never reported to me, but any mistakes they made would be my responsibility. With a poor grasp of the market economy, I made a big mistake that got me cheated out of a ton of money. Reclaiming that money took me more than a year. I couldn't afford

to hire a lawyer for my lawsuit, so I studied all the law books I could get my hands on and tried to be my own lawyer. In the end, what I got back were assets, rather than cash. Turning those assets into cash caused some losses to the company, so they decided to let me go. I had no option but to start a company of my own. After I started making some money, I helped my former employer repay some of its debt. It was not until then that I started to grasp a little bit about the market and the economy, and I ran my company without knowing what the world of communications was about.

The first generation of Huawei employees made communications products by referencing a textbook written by a university professor. This simple approach to R&D was the beginning of our journey. One thing that sets Huawei apart is that we spend less on our own meals or clothes but more on the company's future. You may wonder why Huawei is more successful than many other companies. Most Americans throw their money into Wall Street. Most Europeans spend their money on personal wellbeing. At Huawei, we invest all our money into the company's future. And our investments have been enormous. Our annual investments into R&D are around 15 to 20 billion US dollars, and we have about 90,000 R&D employees who throw themselves into their work no matter what. Our immense, focused investments have led to breakthroughs.

At Huawei, there is no legacy holding us back, and we are always open to new things. Our 5G technology is based on a mathematics paper by Turkish professor Erdal Arıkan. We came across this paper just two months after it was released ten years ago. We have dedicated several thousand employees to analyzing the paper, turning out patents, and getting our 5G business up and running.

We are supporting universities all over the world. This practice has the same spirit as the US's Bayh-Dole Act, which provides funds for universities without demanding their research findings or returns on investment. The US government often gives funds to universities, and whatever patents come out of these funds still belong to the universities. We provide funds to universities the same way. Research findings that our funds make possible belong to the universities themselves, and we only want to be informed of the findings. This way, universities are like beacons that light the way for us and others. And we can stay one step ahead of others if we are the first to understand how these beacons work.

At Huawei, a team of 15,000 scientists, experts, and senior engineers focus on understanding the findings of scientists and turning money into knowledge. Another 70,000 engineers turn that knowledge into products and finally money. This is how we have gradually explored our own path and learned new things. Having been

through many ups and downs over the past three decades, we are now just beginning to scratch the surface of how things work. But there's still a long way to go, and we can't say for sure that we will never make the wrong step.

**NRK:** Did the Turkish professor ever receive revenue for his family or dividends from Huawei for using his formula?

**Ren:** No. We wanted to offer him some rewards, but he rejected outright. But we have been supporting his lab.

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**Yle:** One thing that was briefly mentioned was the relationship between the Chinese government and Huawei. I had a discussion with the Nokia chairman two or three years ago. He said their customers really didn't expect Nokia to give them the kind of financial benefits or terms that you can provide. He might have meant Huawei or Chinese companies in general, I don't remember, but we were talking about Huawei at that time. So there is a possibility that you have strong financial backing from government export credit organizations, and that there's a whole movement in China to make this company global. That would mean Huawei's success is not just Huawei's success; it's sort of the whole of China's push that none of the other technology companies can benefit from. Am I right?



**Ren:** First of all, export credit was first adopted by Western companies. When China was just starting its reform and opening up, it was still very poor and underdeveloped. As carriers didn't have money to buy equipment from Nokia, Ericsson, or Alcatel, the Western governments provided loans to these carriers to buy equipment from these vendors. However, the Chinese government at that time couldn't provide such loans to carriers, so they didn't buy our equipment. That was how things were in the beginning.

Later, the Chinese government mimicked its Western peers and started to provide loans to carriers in Africa and some other underdeveloped countries. The loans were offered to carriers, not us, because we couldn't afford to take on the debt ratio. In fact, we weren't eligible for that much export credit, and most of the credit was allocated to large-scale infrastructure projects, like bridges and railways. Generally, telecom contracts were relatively small, and most telecom carriers had enough money to buy equipment, so export credit wasn't a critical issue for our equipment sales. In China, export credit was first introduced by Western countries exporting to China. At that time, China was just opened up, and it had very little money.

Export credit has become a common practice around the world.

**Ye:** Do you agree that Nokia and Ericsson are stuck with OECD or some other rules, or other terms on financing, while your hands are freer when you negotiate with customers?

**Ren:** We have to abide by the rules too; otherwise, it would be difficult for us to survive.

**34 DR:** Influential people in China don't like the press, especially the foreign press. Until recently, you didn't give interviews like this. How come you feel comfortable doing this? For instance, just a moment ago, you criticized the Cultural Revolution. Don't you sometimes think that even you should be more careful about what you say in China?

**Ren:** This criticism of the Cultural Revolution isn't mine alone; the government also recognizes the impact of that mistake. It's not like we're not allowed to criticize anything in China. As long as we speak the truth based on real facts, we don't need to worry about what we say. Like in Western countries, China also respects people's freedom of speech. We are just more careful about not crossing the line.

Content in this publication is based on excerpts of Huawei founder and CEO Mr. Ren's interviews with the media.

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