



Huawei Investment & Holding Co., Ltd. 2016 Annual Report

Building a Better Connected World



Who is Huawei?

Huawei is a leading global information and communications technology (ICT) solutions provider. Driven by a commitment to sound operations, ongoing innovation, and open collaboration, we have established a competitive ICT portfolio of end-to-end solutions in telecom and enterprise networks, devices, and cloud technology and services. Our ICT solutions, products, and services are used in more than 170 countries and regions, serving over one-third of the world's population. With 180,000 employees, Huawei is committed to enabling the future information society, and building a Better Connected World.

What do we offer the world?

We create value for our customers.

Together with telecom carriers, Huawei has built over 1,500 networks, helping connect over one-third of the world's population. Together with our enterprise customers, we employ open cloud solutions and agile networks to drive efficient operations and agile innovation in domains like Safe City, finance, transportation, and energy. With our smart devices and smartphones, we are improving people's digital experience in work, life, and entertainment.

We promote industry development.

Huawei advocates openness, collaboration, and shared success. Through joint innovation with our partners and peers, we are expanding the value of information and communications technology to establish a robust and symbiotic

industry ecosystem. Huawei is an active member of over 360 standards organizations, industry alliances, and open source communities, to which we have submitted over 49,000 proposals to drive standardization and pave the way for more effective collaboration. We have joined forces with industry partners to innovate in emerging domains like cloud computing, software-defined networking (SDN), network functions virtualization (NFV), and 5G. Together, we promote ongoing, collaborative industry development.

We boost economic growth. Huawei generates tax revenues, increases employment, and stimulates the development of the ICT value chain in the countries where we operate. Perhaps more importantly, we deliver innovative ICT solutions that drive the digital transformation of all industries, thereby fostering economic growth and greatly improving the quality of people's lives.

We drive sustainable development.

As a responsible corporate citizen, Huawei has made a significant contribution to bridging the digital divide, leaving our mark in places as remote as Mount Everest and the Arctic Circle. We are keenly aware of the importance of telecommunications in emergency response situations. Having faced Ebola-affected areas in West Africa, nuclear contamination after the Japanese tsunami, and the massive earthquake that struck Sichuan, China, we hold fast in disaster zones to help restore communications networks and ensure the reliable operation of essential telecom equipment. To further promote sustainability, we help develop the next generation of ICT talent with our global Seeds for the Future program,

in which we give college students from 96 different countries and regions around the globe the opportunity to visit Huawei's headquarters, undergo training, and gain first-hand experience in the ICT industry.

We provide dedicated employees with a strong growth platform.

Inspiring dedication is one of Huawei's core values, and it manifests itself in many ways. We assess employees and select managers based on their performance results, as well as the extent of their responsibilities. We provide our teams with a global development platform, giving young team members the opportunity to shoulder greater responsibilities and accelerate career growth. In this way, we have enabled hundreds of thousands of Huawei people to yield ample returns for their individual efforts, and gain memorable life experience.

What do we stand for?

For the past 29 years, hundreds of thousands of Huawei people have maintained an unwavering focus on our core business, refusing to cut corners and rejecting opportunism. With a solid, practical approach to everything we do, we have invested patiently, amassing the long-term, focused effort that leads to great moments of technological breakthrough. Our ability to maintain this strategic focus boils down to our core values of staying customer-centric, inspiring dedication, persevering, and growing by self-reflection.

The digital era has been generous. We will make the most of the historic opportunities it presents, and boldly forge ahead to build a Better Connected World.



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Message from the Rotating and Acting CEO



Just as progress in fields like shipbuilding, cartography, and navigation made long-distance sea travel possible, the rise of information and communications technology like the Internet of Things, ultra-broadband, the cloud, and artificial intelligence has launched us into a great new age of digital exploration. As we continue to explore and make new breakthroughs, over the next 20 to 30 years the world as we know it will become intelligent – a world where all things can sense, all things are connected, and all things are intelligent.

Building a Better Connected World: Roads to New Growth

More than 500 years ago, ports across Europe swarmed with the sails of thousands of ships. Countless explorers were venturing farther out, braving the fierce waters of the seven seas in search of unknown land. They established new routes to Africa, Asia, the Americas, and Oceania, connecting the world for the first time in history. This set the stage for civilization to evolve rapidly over the next 500 years to come.

Just as progress in fields like shipbuilding, cartography, and navigation made long-distance sea travel possible, the rise of information and communications technology like the Internet of Things, ultra-broadband, the cloud, and artificial intelligence has launched us into a great new age of digital exploration. As we continue to explore and make new breakthroughs, over the next 20 to 30 years the world as we know it will become intelligent – a world where all things can sense, all things are connected, and all things are intelligent.

Sensing devices will be everywhere, each producing an endless stream of data. These streams of data will flow together into a massive digital ocean through ultra-broadband networks that reach all four corners of the earth. An all-embracing cloud will give rise to ubiquitous intelligence, a digital brain of sorts that grows and evolves in real time. The intelligence it provides will be integral to our work and everyday lives. In effect, we will no longer go online; we will live online. All enterprises will need to restructure their production and operations around digital technology. Data will become a core asset, and resource competition will gravitate towards intelligence instead.

This transformation abounds with digital dividends. It will present millions of companies with business opportunities the likes of which they have never seen. At the same time, it will raise the bar for the three pillars of digital infrastructure – devices, data pipes, and the cloud – thereby paving the road to new growth for carriers that adopt the full spectrum of ICT.

In this age of great opportunity, patience and focus are more important than ever. As we stand at the threshold of this historic transformation, we will hold fast to customer-centricity, remain focused on ICT infrastructure and smart devices, invest patiently, and collaborate openly in a relentless effort to build a Better Connected World.

Advancing the cloud, driving digital transformation

As cloud platforms integrate more seamlessly with emerging technologies like IoT, big data, and AI, they also grow in their role as the next generation of public infrastructure. Cloud platforms are engines of innovation. These platforms are rapidly penetrating a number of industries, changing the way they work and driving digitization. Meanwhile, the provision of cloud services is becoming a basic business model. In the future, everyone will use cloud services just as they use everyday utilities like water and electricity. By extension, all enterprises will need to be able to serve their customers from the cloud.

Those who move forward can adapt to change much better than those who stay in place. Going forward, Huawei will employ an All Cloud strategy. We will cloudify all of our products and solutions to enable the full digital transformation of telecom carriers and verticals, just as we did with our All IP initiative in the past. We are committed to open cloud architecture, providing a combination of cloud products, solutions, and services. This will enable carriers to fully embrace the cloud, help major industries move to the cloud faster, and deliver an optimal consumer experience through device-cloud synergy.

Enabling carriers to fully embrace the cloud: In the past, telecom carriers adopted an investment-driven approach to network construction. These days, they are gradually shifting to a value-driven approach that emphasizes user experience, service, and delivering greater value. We are joining forces with carriers to drive digital transformation, maximize ROI, and increase operating efficiency. Our goal is to set carriers on a new path to value-driven growth and prosper together as business partners. We provide our carrier customers with products and solutions that fully

cloudify their networks and digital operations systems, empowering them to serve end users from the cloud and develop their B2B business. These initiatives aim to help carriers deliver a Real-time, On-demand, All-online, DIY, and Social (ROADS) experience.

Helping industries move to the cloud faster:

Enterprises across the globe are picking up the pace of their digital transformation. As a result, ICT is evolving from a supporting role to a core production system. With open, hybrid cloud architecture, Huawei guides companies in key verticals throughout their cloud journey, serving as an enabler of digital transformation and a preferred partner along the way. We provide our enterprise customers with a variety of cloud services, including private clouds, public clouds jointly developed with carriers, and public clouds we operate ourselves. With a primary focus on public safety, government institutions, finance, and manufacturing, we help our customers go digital to achieve greater intelligence and agility.

Providing a harmonized device-cloud experience:

Built on a solid foundation of quality and services, Huawei aims to join the ranks of high-end consumer brands. We are cultivating a cloud ecosystem around user experience, and developing our strength through device-cloud synergy. Ultimately, this will set Huawei apart as a brand that consumers both like and trust.

2016: New breakthroughs, solid growth

The year 2016 saw a flock of black swans – both political and economic – sweep across the globe. Nevertheless, we maintained our strategic focus, patiently applying ourselves to making breakthroughs and creating real value for our customers. Our sales revenue rounded off the year at 521.574 billion yuan (US\$75.1 billion based on the year-end exchange rate), up 32% year-on-year.

Our carrier business, with a continued focus on digital transformation, achieved solid growth by leveraging major opportunities in cloud, video, IoT, and operations transformation. 2016 was rich with collaborative success:

- We worked closely with leading carriers like Vodafone, Telefónica, Deutsche Telekom, and China Unicom to roll out new services in smart home, smart meter, and connected vehicle domains – a massive new market anchored in over 100 billion IoT connections.
- In the video domain, we worked with China Telecom, China Mobile, China Unicom, Deutsche Telekom, Etisalat, and other carriers on a series of benchmarking projects, helping them develop video into a basic service and achieve business success.
- Together with carriers like Deutsche Telekom, Telefónica, and China Telecom, we provided public cloud services to help expand their B2B business.
- We also established strategic partnerships with a number of carriers including China Unicom Shanghai and HKT to transform their operations. Huawei's Telco OS helped them evolve their O&M systems.

Our enterprise business, working in close collaboration with our partners, focused on ICT infrastructure to assist customers in their digitization process. We attained sustainable and profitable growth in several key sectors, including public safety, government institutions, finance, and energy. The following are some highlights from 2016:

- Our Smart City solution, featuring "One Cloud, Two Networks, and Three Platforms"¹, is now used in more than 100 cities in over 40 countries.
- In the public safety space, we worked with partners to develop a one-stop Safe City solution that is open, converged, and video-enabled. This solution now serves more than 800 million people in 200+ cities across 80+ countries in Europe, Africa, and the Asia-Pacific region.
- In the finance sector, we co-innovated with a dozen top-tier financial institutions and independent software vendors around the world. Our next-generation IT infrastructure, powered by cloud and big data, is used by

more than 300 financial institutions globally, including six of the world's top ten banks.

- In the energy industry, our Better Connected Smart Grid solution now serves over 170 power companies in 65 countries.

Our consumer business provides high-tech devices with a premium user experience. The following are some noteworthy achievements from the past year:

- Huawei and Leica unveiled our dual-lens camera technology, setting a new trend in smartphone photography. The P9 series of smartphones was our first flagship device to surpass 10 million units shipped.
- The Mate 9 series was an instant hit among business users. It combines a suite of groundbreaking innovations in chipsets, user interface, dual-lens cameras, and industrial design.
- We launched Honor Magic, our first AI-powered concept phone – the product of targeted exploration in artificial intelligence. This model has won widespread acclaim from consumers around the world.

Our smartphone shipments have increased steadily over the past five years: In 2016, we shipped a total of 139 million smartphones, a 29% increase over 2015.

2017: Creating value for customers, achieving sustainable growth

In 2017, the world will face even greater political and economic uncertainties. The ICT industry will continue to transform, and our customers will face ever-increasing business pressure. In response, we have doubled down on our focus, committed to creating value for our customers and maintaining sustainable growth. We will take the following measures in business, capability, and organization development.

Maintain strategic focus and drive digital transformation. While digitization presents no small number of opportunities and challenges, Huawei will stay customer-centric, help our

¹ One Cloud: one cloud data center. Two Networks: smart city communications networks and smart city IoT. Three Platforms: a big data service support platform, IOC operations management platform, and an ICT application enabling platform.

customers succeed, and share in that success. In the carrier market, we aim to help customers deliver a ROADS experience and create new growth opportunities in markets like IoT, video, and cloud services. We will also help them enhance agility by moving their networks and operational systems to the cloud. In the enterprise market, we will make full use of cloud computing, SDN, and big data to enable digitization in a way that promotes business agility and intelligence. Our consumer business will remain committed to building a mid-range and high-end brand, creating premium products, standing out with our quality and service, and creating an ecosystem around user experience.

Align our capabilities with strategy and changes in the business to truly help customers rise above their challenges.

As they proceed through the digital transformation process, our customers expect us to change. They want to see us evolve from a network equipment provider to a business solutions provider – a business partner that works and grows with them, takes on challenges, and explores the future together. Meeting these expectations means that we must rethink our positioning and the value we create throughout the customer transformation process. It also means we must establish an organization and set of skills that better reflect their needs. We will press ahead with business transformation and organizational restructuring to better position ourselves as a business solutions provider for our carrier customers. This includes optimizing our ability to deliver business consulting and integration services, and strengthening our ability to maintain and operate increasingly complicated networks. We will rapidly optimize the structure of our workforce to support IT transformation, and deploy our capabilities around the world. Our centers of expertise for research, innovation, precision manufacturing, and risk control will be built in places where strategic resources abound.

Inspire passion across the organization to create greater value for customers.

We must keep our skills up-to-date and our teams fully engaged. To that end, more middle and senior managers and experts will head out to work in the field. In doing so, they will gain invaluable experience from hands-on practice, and develop the skills necessary to shoulder greater responsibility in the future. We will upgrade our workforce structure by bringing in

the best and the brightest talent, and refresh the organization through job rotation. Our appraisal mechanism will focus on responsibilities and results. And our principle of sharing value – what we call "Contribute and Share" – will be taken a step further, emphasizing timely incentives for the heroes among us and fast-tracking the promotion of top contributors. In doing so we can more effectively motivate our staff to go out to the field and fully unlock their potential. Outstanding talent will thus maximize contribution in their prime, fulfilling the roles that suit them best and receiving the proper reward.

Observe the law and create a favorable business environment.

As we face an increasingly complicated business environment, we must rely on the things we can be certain about to deal with those we can't. So we will leverage the certainty of legal compliance to tackle uncertainties in international politics and bridge discontinuity in the macro environment. Further development of our organization and managerial teams will help us ensure more effective oversight of risk control and operational compliance. We need to work more closely with academic institutions and members of the industry ecosystem to make solid contributions to the communities where Huawei operates. In external communications, we will remain fact-based and objective to build greater trust.

We are in an era of change, and change is opportunity. We must have strategic confidence and enhance our ability to adapt. We can't cling to what has worked or what we have gained, because past success is not a reliable indicator of the future. In the end, a long list of accomplishments might end up nothing more than an epitaph. This is a vital fact that we must recognize. Moving forward, we need to hone our skills, step up to the plate, and aim for the stars. I would like to thank our customers and partners for your ongoing trust and support. Let's keep working closely, putting our best minds together to build a Better Connected World.



Xu Zhijun
Rotating and Acting CEO

Business Highlights in 2016

Helping deliver a ROADS experience

In our carrier business, we helped grow and advance the telecom industry, with video, cloud, digitization, and operations transformation as our strategic priorities. In 2016, we:

- Worked with leading carriers including Vodafone, Telefónica, Deutsche Telekom, and China Unicom to guide and monetize future markets built on 100 billion connections.
- Created benchmark projects together with China Telecom, China Mobile, China Unicom, Deutsche Telekom, Etisalat, and other leading customers, helping them develop video into a basic service and achieve business success.
- Partnered with Deutsche Telekom, Telefónica, and China Telecom, among other carriers, in providing public cloud services, and led the transformation of their IT systems towards cloud architecture.
- Built end-to-end Telco OS showcases for China Unicom Shanghai, HKT, and other top-tier carriers, helping them transform their O&M systems and build digital operations that deliver a ROADS (i.e., Real-time, On-demand, All-online, Do-it-yourself, and Social) user experience.

Supporting digital transformation in all industries

Digital transformation is reshaping industry ecosystems. Huawei is seizing this opportunity and working with partners and customers to build Business-Driven ICT Infrastructure (BDII). We have become an enabler and a preferred partner for industries' digital transformation.

- Smart city: Our smart city solutions, which integrate one cloud, two networks, and three platforms, have been successfully deployed in over 100 cities across more than 40 countries.
- Finance: We have pursued joint innovation with more than a dozen top-tier financial institutions and independent software vendors around the world, and launched next-generation IT infrastructure based on cloud computing and big data. Our solutions now serve more than 300 financial institutions globally, including 6 of the world's top 10 banks, helping them go digital faster on three levels: platform transformation, product innovation, and channel services.
- Energy: Huawei became the only ICT solutions provider among the members of the Global

Energy Interconnection Development & Cooperation Organization (GEIDCO). The Huawei Better Connected Smart Grid Solution has been deployed in 65 countries, serving over 170 customers in the electricity sector.

Synthesizing global know-how to deliver an inspired experience

In 2016, Huawei continued to implement an ecosystem development strategy characterized by openness and collaboration. We worked with many leading global companies with a shared brand vision, including Leica, SAP, Accenture, Audi, Google, Microsoft, and Intel. With our 15 research institutes and centers around the world, we worked together to develop devices that deliver an inspired consumer experience:

- The second-generation dual-lens camera technology jointly developed by Huawei and Leica in 2016 sparked a new trend in smartphone photography.
- Global sales of the HUAWEI P9 series exceeded 10 million units, the first Huawei flagship handset to reach this milestone.
- The HUAWEI Mate 9 series became an instant hit among global consumers after its launch in November 2016.

- Flagship smartphones from the Honor brand, the Honor Magic in particular, were Huawei's explorations into what the intelligent phones of the future will look like.

Shaping the cloud with partners

As of the end of 2016, Huawei has delivered over two million virtual machines and 420 cloud data centers to customers in a number of sectors, including government, public utilities, telecom, energy, and finance. We worked with over 500 partners to provide secure, reliable, and efficient cloud computing solutions in over 130 countries and regions.

- We worked with Deutsche Telekom to launch Open Telekom Cloud, and built the world's largest science cloud for 10 top scientific research institutions, including CERN, the European Organization for Nuclear Research. This cloud helps 8,000 researchers from over 500 universities around the world to collaborate more closely.
- Huawei's financial cloud solution has been adopted by multiple Fortune Global 500 financial institutions. We innovated in collaboration with the Industrial and Commercial Bank of China (ICBC) and China Merchants Bank (CMB) to apply new technologies like precision marketing and real-time risk control in the finance sector.
- Huawei's media cloud solution has helped well-known TV stations around the world migrate their production, editing,

and broadcasting of HD video to the cloud. Customers include France's TF1, South Korea's KBS, and Italy's Mediaset. Our solutions have accelerated the transformation of the media industry towards IP-based, mobile, cloud-based omnimedia services.

- With the Huawei e-Government Cloud Solution, we built a secure and efficient e-government platform in Beijing that serves tens of millions of people. This platform has effectively reduced cyber security threats and significantly improved O&M efficiency.

Fostering 5G alliances

5G technologies will be applied in all industries. To ensure the robust global development of 5G, we need a global ecosystem that is open and collaborative, and promotes shared success. In 2016:

- We worked with our partners at 3GPP to drive 5G standardization and speed up the commercial deployment of 5G services. We were involved in the research and innovative development of Polar code, which was selected by 3GPP as the control channel encoding scheme for 5G eMBB.
- We continued to support the establishment and expansion of 5G alliances. In September 2016, Huawei teamed up with Audi, BMW, Daimler, Ericsson, Intel, Nokia, and Qualcomm to announce the establishment of the 5G Automotive

Association (5GAA). This association will push for the use of a single standard for connected vehicles worldwide.

Open collaboration accelerates technology and business innovation

Huawei seeks out partnerships with system integrators, independent software vendors, and independent hardware vendors to develop solutions for different industry customers. Working together, we aim to build joint innovation ecosystems to accelerate technology and business innovation.

- Huawei has built 13 OpenLabs around the world where we collaborate with more than 400 partners across Europe, Latin America, the Middle East, the Southern Pacific, and China. These labs enable us to efficiently develop industry-specific solutions that meet the real business needs of local customers, and to deliver ongoing value that helps them succeed.
- In November 2016, we announced X Labs, a new research program that will bring together carriers, technology providers, and vertical industry partners to form an open collaborative ecosystem. This program will enable us to jointly explore future use cases for mobile applications, to drive business and technology innovation, and to build application-centric networks.

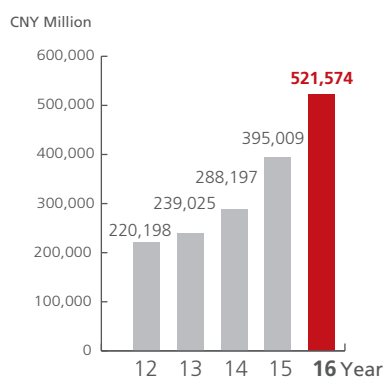
Five-Year Financial Highlights

	2016		2015	2014	2013	2012
	USD Million*	CNY Million			CNY Million	
Revenue	75,103	521,574	395,009	288,197	239,025	220,198
Operating profit	6,842	47,515	45,786	34,205	29,128	20,658
Operating margin	9.1%	9.1%	11.6%	11.9%	12.2%	9.4%
Net profit	5,335	37,052	36,910	27,866	21,003	15,624
Cash flow from operating activities	7,087	49,218	52,300	41,755	22,554	24,969
Cash and short-term investments	20,973	145,653	125,208	106,036	81,944	71,649
Working capital	16,736	116,231	89,019	78,566	75,180	63,837
Total assets	63,880	443,634	372,155	309,773	244,091	223,348
Total borrowings	6,451	44,799	28,986	28,108	23,033	20,754
Owner's equity	20,178	140,133	119,069	99,985	86,266	75,024
Liability ratio	68.4%	68.4%	68.0%	67.7%	64.7%	66.4%

*Note: Converted into United States dollar ("USD") using the closing rate on December 31, 2016 of USD1.00 = CNY6.9448.

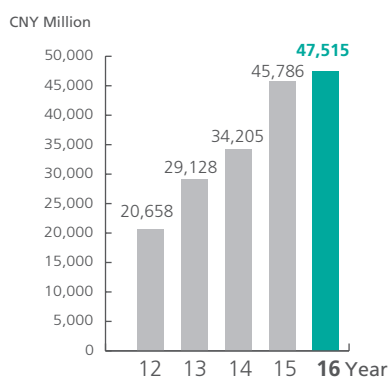
Revenue

CAGR: 24%



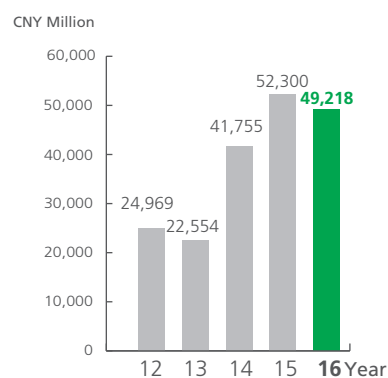
Operating profit

CAGR: 23%



Cash flow from operating activities

CAGR: 18%



Message from the Chairwoman



We will progress faster towards a better connected, intelligent world. It is difficult to imagine the depth and breadth of the changes to come. Physical connections will be everywhere, playing an integral role in society. Applications are enabling new degrees of agility and efficiency, driving business forward. Value-driven collaboration and innovation are giving rise to diverse business ecosystems. And inspired experience will enrich our emotional connections, adding a new depth of human touch to our lives. As all of these new connections drive the digital transformation process, they will reshape society, the economy, business, and the way we create.

Accelerating digital transformation

Information and communications technology is propelling humanity beyond the constraints of time and space, physical strength and intelligence, life and being – all at a faster pace than ever before.

Over the past two centuries, people have used chemical energy to reshape the physical world. Over the next several decades, however, we will see a migration from the physical world to the digital. In this world, we will see more collaboration between industries and closer integration of technology and business. There will be no clear lines between life and work. Boundaries are disappearing.

A better connected, intelligent world is on the horizon. As our world evolves in this direction, key ICT technologies like IoT, AI, and cloud computing have become the very cornerstone of society.

Forecasts by Huawei's Global Industry Vision (GIV) Project Team put the number of global

connections at 100 billion by the year 2025. At that time, 85% of enterprise applications will be deployed in the cloud, 100% of enterprises will use cloud services, and over 20% of industrial facilities will be intelligent. Ubiquitous connectivity will present industries with unlimited opportunities for digital transformation, enabling them to develop in ways that are far beyond our imagination.

Bridging the digital divide

More and more countries have come to realize that solid digital infrastructure is a key driver behind sustainable economic growth. According to Huawei's 2016 Global Connectivity Index (GCI), a one-point increase in a country's GCI rating correlates to a 2.1% increase in competitiveness, a 2.2% increase in innovation, and a 2.3% increase in productivity. This shows that digital technology can effectively drive the upgrade and transformation of industry, and can help create a more vibrant economy. It enables more people to reap digital dividends and enjoy a better digital experience, which will in turn lead to sustainable social development.

However, there is still a vast digital and technical divide between developed and developing countries. In the past year, the number of Internet users around the world increased from 3.2 billion to 3.5 billion, and Internet penetration reached 47.1%. In spite of this, 3.9 billion people are still not connected. Internet penetration in developed countries exceeds 80%, and yet it still hovers at 23.5% in the world's least developed countries and regions. The world needs to act more decisively to bridge this digital divide.

According to ITU statistics, 151 countries have mapped out national broadband network (NBN) plans. The goal of these plans is to increase home broadband penetration and deliver a better online experience. More and more telecom carriers now consider wireless broadband technology like WTTx to be an integral part of these initiatives – an effective last-mile solution for broadband access. WTTx enables quick broadband deployment in densely populated urban areas where fixed network deployment is difficult, and also more rapidly extends broadband access to rural and remote regions. At Huawei, we are committed to helping a greater number of households cross the digital divide. At the same time, by enabling smart homes and offering diverse applications, we aim to make life better for everyone.

Our ongoing commitment to operational compliance

We conduct business with integrity, observing international conventions and all applicable laws and regulations in the countries where we operate. This is the cornerstone of operational compliance at Huawei, and has long been a core principle followed by our management team. Guided by this principle, we have made an ongoing effort to strengthen operational compliance as part of our corporate culture. We require all of our worldwide subsidiaries to observe local laws and regulations. We leverage the certainty of legal compliance to tackle the uncertainty of international politics. We reinforce our compliance requirements with every employee through training, awareness programs, performance appraisals, and accountability management. In effect, we weave compliance into the very fabric of our corporate culture so that it extends to all aspects of our operations.

Huawei has established a full series of compliance policies and codes of practice, and we are committed to building greater awareness of operational compliance throughout the company. We proactively engage and collaborate with government institutions and business partners, and our compliance systems have won the recognition and support of our suppliers, customers, and business partners.

Simply put, building a constantly evolving, complete compliance system that covers all aspects of operations is one of our key development strategies. We actively communicate with all stakeholders on compliance-related concepts and practices in an open and transparent manner to increase mutual understanding and trust.

Improving corporate governance

Sound corporate governance is the cornerstone of our sustainable development. Throughout 2016, we continued to develop and optimize our corporate governance system. In addition to taking an in-depth look at our top-level design and the responsibilities of our Board of Directors, we made further progress in the delegation of authority. Specifically, we delegated more authority to field offices, and clarified the type of authority to delegate. We also defined the scope of authorization and standardized processes in key business domains. These endeavors are instrumental to ensuring the long-term stability and effectiveness of our corporate governance structure, as well as the orderly implementation of the company's governance system at the business execution level.

Fulfilling our social responsibility

In 2016, we continued to honor our commitment to growing with local communities. By leveraging our ICT expertise and management experience, we worked side-by-side with government institutions, customers, and non-profit organizations on a number of public service activities. These include supporting ICT innovation and local education, helping cultivate local ICT talent, engaging in green initiatives and traditional cultural events, helping improve living standards in local communities, and providing support to local charitable organizations and underprivileged groups.

Huawei's flagship CSR program, Seeds for the Future, has operated globally for nine years in a row. This program has helped transfer knowledge, cultivate local ICT talent, and increase people's engagement in digital society. Thus far, we have partnered with more than 280 universities in 96 countries across 5 continents. About 25,000 students have benefited from the program, including a thousand top students who were given the opportunity to study at Huawei's headquarters in China. The most outstanding participants in this program have since joined the ICT industry, and are already contributing to its development.

Our commitment to sustainable development

In recent years, there has been growing uncertainty around the world, coupled with a clear, continued downward trend in the global economy. A short-sighted mindset has become common among corporate investors and managers. In this context, however, more responsive and responsible leadership will lead to greater social progress.

Huawei focuses on long-term value creation and sharing. We have consistently invested over 10% of our annual revenue in R&D. We do not decrease investment in innovation based on fluctuations in short-term business performance or short-term financial results. Doing so would sacrifice our future. We focus on actual wealth creation, and will not transfer wealth at the expense of stakeholders. Similarly, we provide our dedicated employees with reasonable compensation and professional opportunities, because our people are the company's one true asset. Only through their ongoing dedication can we continuously create value for customers and for society.

In January 2017, sponsored by the World Economic Forum's International Business Council, over 100 leading global enterprises, including Huawei, signed *The Compact for Responsive and Responsible Leadership*, aimed at promoting sustainable investment and growth around the world. We pledge to develop a corporate strategy based on our pursuit of sustainable

value creation, and we also pledge to regularly review the status of our corporate governance, our long-term goals, and our development strategy. As Chairwoman of the Board and a signatory of the compact, I will support and supervise its execution, promote a long-term strategy, and contribute to sustainable development around the globe.

Over the next two to three decades, we will progress faster towards a better connected, intelligent world. It is difficult to imagine the depth and breadth of the changes to come. Physical connections will be everywhere, playing an integral role in society. Applications are enabling new degrees of agility and efficiency, driving business forward. Value-driven collaboration and innovation are giving rise to diverse business ecosystems. And inspired experience will enrich our emotional connections, adding a new depth of human touch to our lives. As all of these new connections drive the digital transformation process, they will reshape society, the economy, business, and the way we create. Let's work together to make this Better Connected World a reality.



Sun Yafang
Chairwoman of the Board

Industry Trends

+Intelligence

Evolving from digital transformation
to intelligent transformation



The world is going through a process of digital evolution, propelled by the rise of the Internet of Things, cloud computing, and artificial intelligence. This better connected world is now increasingly powered by intelligence, which further accelerates the pace of digital change. Industries are converging and merging at an ever-greater rate, and the process of digitization is tearing down the barriers between people, businesses, and things.

Ever-accelerating Digital Transformation

A new IT revolution is quickening the spread of digital technology. Digital technology is no longer just a consumer plaything; it is a tool for production. Robust digital infrastructure has become a key engine for sustainable economic growth, and many governments now

recognize digital technology as one of the keys to building international competitiveness in the post-crisis era. A series of digital strategies and policies have been launched: the US's Industrial Internet and Advanced Manufacturing Partnership; Industry 4.0 in Germany; Japan's New Robot Strategy; and Made in China 2025. According to Huawei's Global Connectivity Index (GCI), the world's GCI score improved by two points in 2016, a rise of 5%. The digital economy is growing at a rate of 10% every year, which is more than three times faster than the global economy as a whole.

As the World Bank writes in its *2016 World Development Report*, the rapid spread of digital technologies around the globe will create broader developmental benefits, often referred to as *digital dividends*. The worldwide adoption of digital technology will generate

enormous new opportunities. Huawei predicts that the video market will be worth hundreds of billions of dollars, and the market for enterprise digital transformation will be in the trillions. The Internet of Things will drive a tenfold increase in the number of users on communications networks.

More Sensing, More Intelligent

Humanity has always yearned to transcend time and space. Telecommunications enabled people to connect across any distance, but being connected was a temporary, specialized activity. Mobile communications made being online the new norm, making us always available in a fully connected world. Going forward, virtual reality and augmented reality will enable fully immersive, inspired experiences. The user will become a part of the virtual



world, a part of the virtual story. We will no longer just connect to the World Cup: We can be there, on the pitch with the stars. Or we can make real what was always just an abstract dream, and reproduce the feeling of gravity on the edge of a black hole. These new capabilities will unleash our imagination and creativity. But creating these virtual, immersive experiences will require connections that are broader, faster, and less costly. Huawei predicts that by 2025, 75% of homes worldwide will have broadband access, with 30% of homes connected by Gbit/s broadband.

From connecting, to always online, to immersive experience... Humankind is truly shaking off the shackles of time and space.

Artificial Intelligence Designed Around People

Computer vision and natural language processing technologies are advancing fast, and they are making it possible for us to interact with machines in a much more direct and intuitive way. The barriers to use of technology are tumbling, and access to information will become much easier. But we will need artificial intelligence to help us efficiently sift through oceans of data to find useful information and valuable content. Our AI devices will learn our habits, and recognize our behavioral patterns and the contexts in which we live and work. They

will bring smart prediction to our consumer experience, and context-sensitivity to the services we receive. Introducing intelligence to manufacturing systems will enable flexible, customized manufacturing. And companies which introduce intelligent ICT will see their ICT systems evolve from a support role to an operation system and ultimately towards decision-making capability.

The next technological revolution, the intelligence revolution, is upon us. It will be an age of “+Intelligence”, where every object, every person, and everything we do will be augmented with ever-present intelligence. In a world +Intelligence, digital technology will spread at an ever-increasing rate, human cognitive and perceptual abilities will jump to new levels, and human-machine interaction will become much more natural. This transformation of our society, powered by intelligence, will bring huge changes in every aspect of our lives. Building intelligence into our devices, networks, and industries will open up new worlds.

Device +Intelligence: From Smartphones to Intelligent Phones

The mobile Internet has grown explosively, and our phones are now the nexus for an increasing array of services. Our problem today is the problem of choice. That means that consumers will

opt for the most relevant and accurate services delivered in the shortest possible time. Artificial intelligence will be the disruptor in terms of customer experience. Fortified with artificial intelligence, smartphones will become intelligent phones, and they will be able to engage with us on a human, emotive level, through voice, video, and gesture. Artificial intelligence means that our phones will even be able to understand what we say and read what we write as another person might. They will be able to think contextually and to engage us in dialogue, to understand our needs. Then they will deliver precisely the information and services we require. Phones will evolve into personal assistants, providing friendly, expert, personalized services at every moment of the day. Huawei predicts that by 2025, over 90% of smart device users will benefit from the personalized and intelligent services of a smart personal assistant.

Artificial intelligence will disrupt the user experience, but before it can do so, we will need a quantum leap in the functionality of our smart devices, chipsets, and cloud services. Artificial intelligence will place heavy demands on computing performance, energy efficiency, and device-cloud synergy. Meeting these demands and creating a better intelligent experience will take a synthesis of capabilities across both chipsets and the cloud.

Network +Intelligence: All Cloud Intelligent Infrastructure

For telecom carriers, cloud and AI will make automated, intelligent network O&M possible. In order to build intelligent networks, carriers must first build All Cloud networks. The cloud era is here, and it brings: pooling of hardware resources for better sharing; a fully distributed software architecture, which allows for elastic resource scheduling; and fully automated operations, which eliminates the need for human intervention. Networks will adopt a data center-centric architecture, with all network functions, services, and applications based in the cloud data center. Huawei estimates that 85% of enterprise applications will be cloud-based by 2025. The move to All Cloud will enable other industries to go digital, and provide the network infrastructure that will underpin the intelligent cloud "brains" of the future.

Industry +Intelligence: Companies Creating Value Faster

The Internet of Things will generate a deluge of data, and today, data is an asset. By 2025, the world will have over 100 billion connections, and the global data produced

and stored annually will top 180 ZB, 20 times more than in 2015. Faced with these massive quantities of data, industries are redesigning their digital systems. Traditional systems, with scattered pools of data and siloed applications, will give way to cloud-based big data platforms. These will be the foundation on which intelligent industries can be built.

Intelligent cloud "brains" will deliver reliable insights to support smart decisions by individuals and businesses. Take the "Internet of elevators" for example: It collects data from the elevators in operation, and makes preventative maintenance possible. Issues can be solved before they ever cause a problem, which means a much-improved safety record. Industry intelligence will give companies real-time access both to customer needs and to the contexts which prompted these needs, enabling accurate prediction of future demand. Companies will thus be able to smartly maintain products throughout their lifecycle. Whole industries will slide from product-oriented to service-oriented, and value chains will be reconfigured. The Internet of Things will create new opportunities for carriers, because IoT platforms will be their bridgehead into other vertical sectors. If carriers can create an IoT platform that leverages their network assets

and manages connections, security, and data, then they will enable industries to roll out new digital services much faster. They will also extend their business model from the value of connections to the value of data.

In an era defined by change, boundary-breaking and constant disruption will become the new norm for many industries. Resources used to be the major competitive differentiator; but now talent will be the key factor. Intellectual capital will become more important than financial capital. This coming period will not only witness the emergence of disruptive new technologies. Huge change is also coming in the ways in which value is created, in our resources, and in the logic of industry. The only thing that never changes is change itself. +Intelligence will open up a brand new future for us all.

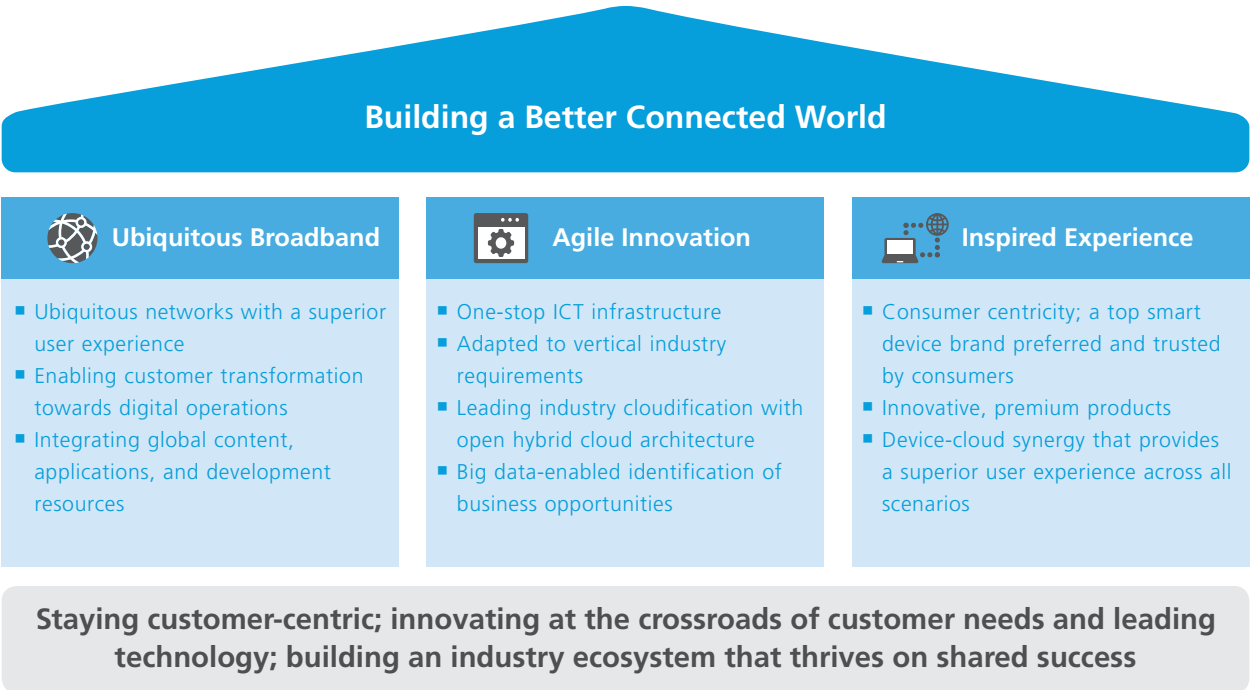
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Our Value Propositions

Information and communications technology is converging at an increasingly rapid pace. New technologies, especially cloud computing and big data, are becoming key enablers for ICT innovation and development. They are completely reshaping the CT industry, and creating enormous business opportunities through IT and CT convergence. In response to these revolutionary changes, Huawei continues to innovate around customer needs, focusing on the development of leading technology that meets those needs. Through open partnerships, we focus on providing future-oriented information pipes to build a Better Connected World and continuously create value for customers and society. Huawei aims to become a strategic partner that assists carriers in future transformation efforts, a leading enterprise ICT infrastructure provider, and a top smart device brand that consumers prefer and trust.



Ubiquitous Broadband

The Internet makes it easier to disseminate and obtain information, which in turn stimulates the desire to go online anytime, anywhere, on any device. This level of connectivity enables users to access more high-quality content and applications and enjoy the convenience of mobile offices. Enterprises are now migrating their IT systems to data centers and clouds, a trend that significantly raises network requirements. Harnessing future floods of data will require networks with greater capacity, coverage, and agility. Huawei aims to bring the benefits of greater connectivity to more and more people.

Consumer demand for network connectivity, bandwidth, reliability, and security is far from being met. In response, Huawei provides carriers with solutions that best reflect their needs at different stages of development, working together to address their business and technology challenges.

Huawei is committed to helping carriers increase network capacity and optimize network management to achieve digital operations. We continue to innovate with new architectures (such as SoftCOM) and new technologies to deliver cutting-edge products and solutions that enable seamless evolution, and help our customers build highly efficient infrastructure networks. We help carriers consolidate their IT resources, transform their networks with NFV and SDN, and expand their revenue streams through the aggregation of quality content. We also enable carrier digital operations in a way that delivers a ROADS experience and makes ubiquitous broadband readily accessible for all.

Agile Innovation

The ICT industry will continue to advance rapidly well into the future. New trends such as mobility, cloud computing, big data, and social networking are driving the industry to new frontiers. Significant digital changes are taking place in the physical world, with the Internet driving the modernization of traditional industries.

Enterprises in all industries need to rapidly identify business opportunities and leverage the collaborative potential of IT to launch new products and services faster and more effectively. IT is evolving from a support system to an operation system, and is becoming a core source of competitive strength.

Huawei is committed to providing innovative one-stop ICT infrastructure. As part of this drive, we provide All Cloud network infrastructure, cloud data center infrastructure, and digital infrastructure solutions to help customers maximize resource utilization (e.g., network, storage, and computing resources), deploy

business systems more quickly, perform O&M more easily, and manage their systems more efficiently. We provide industry solutions designed to meet the unique needs of different vertical industries. With an intelligent big data analytics system, we help our customers proactively identify new opportunities and achieve more agile business innovation. Through cooperation and innovation, we incorporate our ICT products into partners' industry solutions to better meet the requirements of various industries. Our goal is to ensure our solutions can be easily integrated into partner offerings.

Over the next 30 years, enterprises will gradually migrate from traditional data centers to hybrid clouds. Huawei will build open hybrid cloud architecture to lead the cloudification of key industries, and help carriers fully embrace the cloud. To do this, we will first cloudify Huawei and deliver our products and services to customers from the cloud.

Inspired Experience

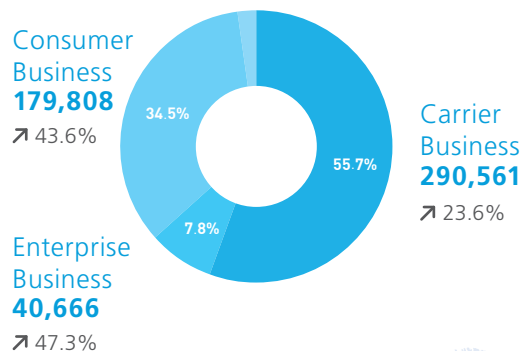
In the future, smart devices will become a more integral part of life, as they will be better at identifying user needs and developing situational and emotional awareness.

With an innovative combination of industrial design and key enabling technology, Huawei delivers premium products that are stylish, secure, and easy to use. By developing robust application and service ecosystems, Huawei offers a wide range of services, mobile phones, smart watches, and other smart devices for various scenarios (e.g., health, lifestyle, work, home, and outdoor settings). Our commitment to device-cloud synergy contributes to a superior user experience in all scenarios and creates a long-term emotional bond between Huawei and our users. We also strive to take user experience to the next level by providing users around the world with a convenient online-to-offline (O2O) purchase experience and services.

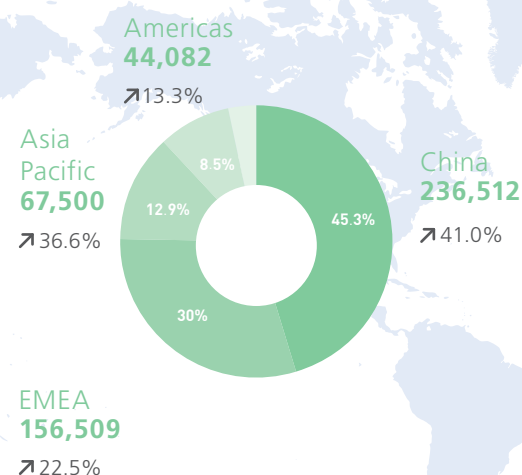
Business Review 2016

In 2016, we maintained our strategic focus, continued making breakthroughs, and created real value for our customers. Our annual revenue was CNY521,574 million, up 32.0% year-on-year.

(CNY Million)	2016	2015	YoY
Carrier Business	290,561	235,113	23.6%
Enterprise Business	40,666	27,610	47.3%
Consumer Business	179,808	125,194	43.6%
Others	10,539	7,092	48.6%
Total	521,574	395,009	32.0%



(CNY Million)	2016	2015	YoY
China	236,512	167,690	41.0%
EMEA	156,509	127,719	22.5%
Asia Pacific	67,500	49,403	36.6%
Americas	44,082	38,910	13.3%
Others	16,971	11,287	50.4%
Total	521,574	395,009	32.0%



- Based on ongoing 4G network rollout, sustained growth in the smartphone sector, and our growing capabilities in enterprise and industry solutions, Huawei earned CNY236,512 million in revenue from the Chinese market, up 41.0% year-on-year.
- Based in part on a growing share of the smartphone market, we earned CNY156,509 million in revenue from Europe, the Middle East, and Africa (EMEA), up 22.5% year-on-year.
- Due in large part to network infrastructure build-out in markets like India and Thailand, and growing share in the Japanese tablet market, Huawei maintained its growth momentum in the Asia Pacific Region and achieved CNY67,500 million in revenue, up 36.6% year-on-year.
- In the Americas, carriers in Mexico increased their investment in communications networks, enabling Huawei to earn CNY44,082 million in revenue from this region, up 13.3% over 2015.

Carrier Business

As digital transformation advances in all industries, technologies like cloud computing, IoT, and video are being used more extensively in each domain. Global carriers are leveraging their strengths to shift their business models from an investment-driven approach to one that is more value-driven. They are exploring new services and improving service quality. The aim is to deliver the ultimate ROADS (i.e., Real-time, On-demand, All-online, DIY, and Social) experience to end users, achieve new success, and serve as the cornerstone of digital transformation in all industries.

Huawei always puts customers first. We provide carriers with tailored solutions to help them go digital, increase revenue, and achieve sustainable development. We strive to be the best business partner for global carriers.

- With an eye to the future, we work closely with our partners to help carriers build All Cloud data-center-centric networks, and more agile digital operations systems. We help carriers succeed by developing video into a basic service and offering cloud services to help vertical industries go digital.
- To make the most out of existing networks, Huawei employs innovative solutions and service models to help carriers improve user experience, expand their user base, improve efficiency, and reduce costs. This will help maximize network value and lay a solid foundation for digital transformation.

In 2016, revenue from our carrier business was CNY290,561 million, up 23.6% year-on-year. We continue to move forward with our pipe strategy. With a focus on digital transformation, we have seized key opportunities arising from video, cloud, and operations transformation, and have explored the potential of new solutions and business models. We have responded to uncertainties with agility, and have worked to cultivate an ecosystem that will help drive the industry forward. These efforts have contributed to our steady growth.

Efforts in the video domain include:

- Helped leading carriers in China, Germany, Turkey, and other countries develop innovative video services.
- Worked with industry partners to build a more open, collaborative video ecosystem.
- Led the development of the video mean opinion score (video MOS) standard at ITU-T, and defined U-vMOS, a video experience measurement system focused on user experience that complies with the video MOS standard.
- Helped carriers succeed by rapidly constructing video networks that deliver an inspired experience.

We worked with carriers to expand the B2B market by offering cloud services. Specifically, we:

- Helped Chinese carriers provide e-government cloud services.
- Deployed B2B cloud services for carriers in Thailand, Chile, and other countries.
- Teamed up with multiple leading global carriers to deploy smart home, smart metering, and connected vehicle services to monetize future markets built on 100 billion connections.

We continued to flesh out our All Cloud network solutions, aimed at helping carriers go digital for more success:

- We partnered with a number of leading global carriers, guiding their transformation towards All Cloud network architecture.
- We formed strategic partnerships with carriers like China Unicom Shanghai, HKT, focusing on operations transformation. Our Telco OS digital operation system has allowed them to evolve their O&M systems and go digital. Together, we explored how to deliver the ultimate ROADS experience to end users.

Wireless Networks

As MBB applications and scenarios become more diverse, demand for greater data transmission speed has increased dramatically, from Kbps to Gbps. Requirements for latency have tightened from seconds to milliseconds. This has raised the bar for mobile network capabilities and operations.

Huawei helps carriers maximize the value of their existing networks with a broad portfolio of solutions.

In 2016, deployment of 4.5G networks became a trend in the industry. By the end of the year, we had deployed over 60 4.5G networks. We helped carriers expand their business scope beyond the traditional Business to Customer (B2C) services to also include Business to Home (B2H) and Business to Vertical (B2V) services. They have been able to increase their number of high-value connections and expand their business while delivering a better service experience to users. With 4.5G technology, Huawei is working with customers to explore new network architecture, business models, and operating models to prepare for 5G. Our 4.5G Evolution concept will help carriers further maximize the value of legacy networks and support them in the evolution towards 5G.

As the digital economy gains momentum, households are becoming the center of digital life. Huawei's wireless home broadband solution known as wireless to the x (WTTx) has been deployed by over 100 carriers in Asia-Pacific, Africa, Latin America, and Europe, among other regions, providing broadband services for more than 30 million households. Featuring faster and more cost-effective deployment, this solution is enabling a growing number of households to make the jump from digital to smart.

As one of the early advocates of the Narrowband Internet of Things (NB-IoT) radio technology standard, Huawei has continued to play a leading role in its development and deployment. We:

- Established five open NB-IoT labs in 2016.
- Partnered with GSMA to establish an NB-IoT industry alliance, which has attracted 50 key members.
- Took the lead in NB-IoT rollout. We worked with 18 carriers in China, Japan, South Korea, Europe, the Middle East, and Africa at a strategic level, and launched over 20 commercial trials.

An ecosystem is fast maturing around LTE integrated Trunked Radio Access (LiTRA), a broadband trunking communications technology developed by Huawei based on LTE. A variety of devices are now available for LiTRA, supporting applications in a range of emergency communications scenarios. Huawei is an active player in the development of LTE trunking standards, we have submitted more proposals and had more of them approved than any other company. Huawei is also the initiator and rapporteur of the 3GPP Mission Critical Push to Video Work Item.



At the Global Telecoms Business Innovation Awards 2016, Telenor Myanmar Limited and Huawei were named Global Telecoms Business Innovation award winners in the Mobile Infrastructure Innovation category for their 9-Sector Solution. Huawei and leading Philippine carrier Globe Telecom won the same award for their joint deployment of the WTTx solution.

With large-scale LTE network deployments underway, mobile video services have become a major source of traffic in the MBB pipe. Huawei offers end-to-end mobile video solutions, and is driving continuous innovation in standards for the mobile video experience and in business applications. We are meeting carriers' complex requirements for monetization, improved experience, and delivery of B2X video services across all scenarios.

Huawei is actively involved in building national broadband networks to drive global MBB development and bridge the digital divide. Our innovative Lean GU900 and multi-sector solutions have helped over 100 carriers in Southeast Asia, the Middle East, Africa, and South America maximize network value. In particular, our multi-sector solution can help increase single-site capacity by a factor of 3.5.

We led the establishment of a site alliance in the Southern Pacific. The alliance draws governments, regulators, carriers, tower operators, and property owners into a synergistic ecosystem, and enables the entire industry to cooperate and create new business opportunities. This alliance now covers over 30,000 sites.

Fixed Networks

Cloud services and video, especially 4K video, have given a strong impetus to the development of ultra-broadband networks. The year 2016 saw a boom in the growth of carrier video services.

Video is predicted to contribute approximately 75% of all traffic on carrier networks by 2020¹. All major global carriers now see video as a huge business opportunity. Huawei's video strategy incorporates consulting, cooperation, platforms, and networks. The strategy aims to help carriers build networks adapted end-to-end for video as

a basic service, deliver the best video experience, and succeed in their video business. In 2016, Huawei teamed up with Etisalat to launch the first 4K ultra-HD TV service in the Middle East and Africa.

In the video era, user experience has become an important metric guiding carrier network construction. Huawei actively seeks joint innovation with industry-leading carriers, aiming to provide users with the best possible experience:

- Huawei has deployed 4K video networks for many major carriers to deliver 4K video services.
- Huawei's Mobile Backhaul Solution ensures the best user experience in HD mobile video.
- By the end of 2016, Huawei had deployed over 190 mobile backhaul networks in over 100 countries, serving one-third of the world's population.

To develop the industry ecosystem, we joined hands with industry partners to launch the OpenLife smart home business development program, which now has over 200 partners globally. We have signed memorandums of understanding with 20 carriers around the world in an effort to build a robust smart home ecosystem.

Cloud Core Networks

With All Cloud architecture, Huawei helps carriers migrate their networks to the cloud, and leverage intelligent pipes to provide communications and connectivity services to individuals and enterprises based on their unique needs. By enabling industries to go digital, we are helping carriers to open up a huge new IoT market.

¹ Source: The Evolution of Big Video – Examining telco transformation video opportunities, a joint white paper by Huawei and Ovum

Huawei has signed more than 170 contracts relating to commercial cloud networks worldwide. Our NFV solution won the Best NFV/SDN Solution award during the 5G Asia Summit, the Best Network Virtualization Product award at the 2016 LTE Latin America Conference, and the Best Technology Enabler award at the Mobile World Congress.

Personal communications:

- Huawei Voice over LTE (VoLTE) and Voice over WiFi (VoWiFi) solutions have been deployed on 110 networks worldwide.
- We built the world's largest high-quality VoLTE network with China Mobile.
- We helped China Mobile Sichuan launch its cloud capability exposure platform.
- The Huawei Home Presence solution was awarded Best Innovative Future Comms Service over IMS at the 2016 IMS World Forum.

Enterprise communications: We have evolved from converged communications to cloud-based communications, expanding from enterprise office systems into core production systems, and are actively engaged in open innovation across industry borders:

- We now serve more than 600,000 enterprises in the finance, electricity, healthcare, and public safety industries across more than 150 countries.
- We have established a Cloud Enterprise Communications Alliance to provide more diverse solutions to our customers.
- We were honored with the Frost & Sullivan 2016 EMEA Video Conferencing Endpoints and Infrastructure Growth Excellence Leadership Award.

Smart pipes:

- Our CloudEPC solution is the leading solution for the cloud-based deployment of large-scale commercial networks.
- Our CloudMSE solution improves the video experience.

- Our forward-looking Multi-access Edge Computing (MEC) solution won the Best Edge Computing Technology award at the MEC Congress.
- Our SmartPCC solution remains a leader in the unified policy and charging control market, and won the Innovation in Policy and Charging Rules Function (PCRF) Virtualization award at the 2016 Policy Control Conference.

As a key element of Huawei's IoT strategy, Huawei launched OceanConnect, an IoT ecosystem with an IoT connection management platform at its core. OceanConnect solutions offer open interfaces to devices and applications and interconnect with third-party platforms via the cloud. By bringing together industry partners, OceanConnect creates value for customers, and makes higher-quality smart lifestyles possible.

Software

Huawei continues to create new digital enabling systems, with five key native features: ROADS-native, Ecosystem-native, Agile-native, Cloud-native, and Analytics-native. The systems behind these features help carriers go digital faster.

Our Hybrid Video Solution helps carriers succeed in their video business by developing video into a basic service and a core competency. We have continued to drive the growth of a robust video ecosystem. We released the *Best-UHD Industry Development* white paper, and together with our ecosystem partners, we are pushing the video industry forward. In 2016:

- Huawei's Hybrid Video Solution helped China Telecom Sichuan expand its IPTV subscriber base to over 10 million and add an additional 3.5 million 4K subscribers. We also helped the company improve user video experience by way of intelligent video operations.
- We helped Deutsche Telekom commercialize the first local video service that integrates fixed and mobile services. By delivering the best content and experience, Deutsche Telekom was able to set itself apart from the competition, and rapidly increase its ARPU and user base.



Huawei's uCDN solution was presented with the Best Cloud or CDN Service Delivery award at TV Connect Industry Awards 2016. Huawei and Ooredoo also jointly won the Best 4K TV Service or Solution award.

Business Enabling System (BES): The product capabilities of our BES, based on micro services and a digitized architecture that supports hierarchical decoupling, continue to improve:

- The BES was named an industry leader by Gartner and Ovum.
- We successfully launched the SaaS BES Cloud solution.
- We made significant contributions to the evolution of TM Forum Framework 16.0 in terms of processes, models, and best practices.

Universe Analytics: Our big data analytics platform Universe Analytics is a core engine for digital transformation. By providing agile, real-time, and intelligent business analytics capabilities based on the needs of carriers, the platform helps carriers improve end-to-end efficiency in delivering mainstream applications such as intelligent video operations and precision video marketing. By opening up analytics capabilities and bringing together industry partners, Universe Analytics enables carriers to monetize their data assets. It won the Best Telco Big Data Analytics Platform award at the Telco Data Analytics Summit 2016.

Digital business cloud: We have developed a leading cloud service platform for digital services, which provides carriers with cloud services like

digital content aggregation, video, and enterprise B2B. The platform has attracted over 4,000 partners, and already has over 600,000 units of digital content and applications.

IT

Based on our All Cloud strategy, we leverage our unique strengths in cloud-network synergy to help carriers build a single cloud that meets both their internal and external needs. We are helping carriers go digital in three areas: providing services for industries, improving internal IT efficiency, and reshaping telecom networks.

In 2016, our IT solutions achieved the following:

- Huawei helped Deutsche Telekom, Telefónica, and China Telecom provide convenient and secure public cloud services by engaging in joint innovation with them and supporting their operations. Their big data, IoT, and other new services are moving to the cloud faster than ever.
- Our B2B Hosting Cloud solution has helped Chinese carriers build over 50 e-government cloud platforms. It also helped carriers outside China, including True in Thailand, REDtone in Malaysia, and Entel in Chile, to tap into the new huge cloud services market for governments and enterprises.
- Our FusionCloud Unified Cloud Infrastructure Solution was adopted by over 50 carriers, including Vodafone, Orange, and MTN, to support the migration of their business, operations, and management to the cloud, and to deliver agile operations and efficient O&M for their internal IT systems.
- With its open architecture, Huawei's NFVi solution effectively helped carriers like Telefónica, América Móvil, and Singtel to migrate their telecom networks to the cloud, and build a fully open architecture and ecosystem.

Huawei is a strategic partner for carriers engaged in ICT transformation. With a tight focus on IT infrastructure, we have made sustained investments in IT. Adopting an open, collaborative approach, we work with partners to provide innovative, differentiated, leading IT products and solutions for carriers. Specifically:

- Huawei was named a leader in *Gartner Magic Quadrant for General-Purpose Disk Arrays 2016*.
- Huawei's full portfolio of storage products were procured on a large scale by Vodafone, Deutsche Telekom, Telefónica, KPN, Vodacom, and China Mobile, among other carriers.
- Our HyperMetro Active-Active Solution ensures 24/7 service continuity of the core business systems of carriers, including Hi3G and China Telecom.
- Huawei servers support efficient operations of the core business systems of many carriers, including China Mobile, Telefónica, and Telecom Italia.

Network Energy

In network energy, Huawei focuses on telecom energy, data center energy, and smart PV. The core concepts of digitization, interconnection, and intelligence inform our integration of power electronics technologies, digital technologies, communications technologies, and IoT technologies, and we provide our customers with a full portfolio of simple, efficient, and reliable network energy solutions. In 2016:

- We expanded our partnerships with China Towercom, Orange, Telenor, Telefónica, BT, Vodafone, and other carriers.
- We built a solar-powered base station on Aconcagua, the highest mountain in South America. We also constructed a cloud data center for China Unicom in Gui'an New

District, Guizhou Province, which is the largest single modular data center in Asia.

- We worked with multiple global carriers and industry organizations including ITU and DataCenterDynamics to drive the establishment of the Green ICT Alliance.
- Huawei's Site Energy Efficiency (SEE) proposal won approval by ITU-T.

To date, Huawei has deployed 2 million telecom energy systems in over 170 countries and regions, and has held the largest global market share in this segment for three consecutive years. We have received a number of awards, including:

- Global Product Innovation Leadership Award in Telecom Energy Solutions from Frost & Sullivan
- Annual Green Innovation Award from TowerXchange
- Cloud Journey of the Year award from DataCenterDynamics

Global Services

Carriers are going digital, and their networks are evolving. Huawei follows a maxim of "first changing ourselves, then serving our customers". That is why we adopted a Product + Service strategy to help maximize network value. The aim is to help customers improve user experience, increase revenue, and develop their capacity to maintain and operate the complex networks of the future.

We have continued to increase our investment in services, built an open ecosystem, and significantly optimized our ability to deliver business consulting and integration services. This has enabled us to better help carriers give priority to user experience as they transform their operations and re-architect their infrastructure, ultimately shifting towards digital business.

Our global services have helped secure steady growth in carriers' network business:

- Our Network Experience PLUS solution, Indoor Connected Solution (ICS), Customer Experience Management (CEM) solution, premium video services, and site integration services have helped customers improve the value of their networks. Our HUAWEI SmartCare® CEM solution has been adopted by 16 of the world's top 30 carriers.
- Our consulting and IT integration services have helped customers evolve towards All Cloud networks. In NFV/SDN integration services, we implemented about 130 NFV and SDN projects worldwide. We have provided integration services for over 420 cloud data centers across the globe.
- Our ICT managed services made multiple breakthroughs, helping customers improve their O&M efficiency.
- Our learning services supported the talent development of carriers in over 170 countries and regions.

We continue to improve our delivery and service management system by developing our internal platforms and capabilities, and we have delivered professional services for over 1,500 networks across over 170 countries and regions. In 2016:

- We successfully delivered over 1 million wireless sites, and supported stable network operations for over 200 key events. Our efforts have helped networks remain robust.
- As part of our commitment to openness, evolution, and innovation, Huawei launched Cloud OpenLabs – with interconnected facilities across four labs. The labs support the cloud ecosystem by offering pre-integration and pre-verification, and serve as a platform for joint innovation. In 2016, Cloud OpenLabs certified 26 partners, and completed 120 Proof of Concept (POC) projects as well as 94 commercial deployment projects. These

achievements enabled network evolution and operations transformation for carriers.

- We launched OPEN-O, an open source SDN and NFV orchestrator project, in partnership with the Linux Foundation and other organizations, and established an Open ROADS Community. These efforts bring together major carriers and industry partners to spearhead digital transformation practices.
- We launched a joint innovation project for digital transformation with HKT based on its B2B requirements, aiming to deliver a ROADS experience to end users. For this project, Huawei employed its operations transformation solutions and All Cloud solutions for infrastructure.

In 2016, our data center integration, IES integration, NFV integration, CEM, and ICT managed services won many prestigious industry awards from DataCenterDynamics, TM Forum, Global Telecoms Business, Informa, Telecoms, and other organizations. In particular, our Operation Web Services (OWS) Cloud Platform won the Cloud Innovation of the Year award from Telecoms, and the Best Managed Services Innovation Award at Informa's Managed Services World Congress 2016.

In 2017, Huawei will continue to work with carriers and partners to build more connections, drive broadband adoption, and support digital transformation in all industries. We will build an open, collaborative industry ecosystem that brings shared success, and construct ubiquitous ultra-broadband networks that deliver the best experience possible. In this way, we will help carriers continue to improve the performance of existing networks, power their sustained success and steady growth, and create Open ROADS to a Better Connected World.

Enterprise Business

In our enterprise business, Huawei's focus is on ICT infrastructure. With our partners, we help our customers succeed by addressing the challenges of digital transformation in their industries. In 2016, we achieved rapid growth in a number of industries, including public safety, energy, finance, transportation, and manufacturing. Revenue from our enterprise business was CNY40,666 million, up 47.3% year-on-year.

Digital transformation is reshaping industry ecosystems. Huawei is seizing this opportunity and working with partners and customers to build Business-Driven ICT Infrastructure (BDII). We have become an enabler and a preferred partner for industries' digital transformation, helping our customers lead the new era of ICT.

Smart city: Huawei creates a "nervous system" for cities by bringing together technology like ultra-broadband networks, cloud computing, big data, and the Internet of Things (IoT). With these types of nervous systems in place, everything in a city will gain the ability to sense, will be connected, and will become intelligent.

Our smart city solutions integrate one cloud, two networks, and three platforms. They have been deployed in smart city projects around the world and are widely recognized for their quality. Specifically:

- With the Huawei e-Government Cloud Solution, we built a secure and efficient e-government platform in Beijing that serves tens of millions of people. This platform has effectively reduced cyber security threats and significantly improved O&M efficiency.
- Huawei won the 2016 Outstanding Contribution Award for developing the Asia-Pacific smart city ecosystem, and also the Asia Pacific Leading Smart City Vendor 2016 Award from the International Data Group.
- Huawei stresses the importance of developing a smart city ecosystem. We have invested over CNY100 million in collaborative initiatives with our partners to develop solutions, market them, and cultivate talent.



At the Smart City Expo World Congress (SCEWC) 2016, Huawei called for the use of new ICT to create open platforms for vibrant, smart cities. Three Huawei customers won awards at SCEWC, highlighting their achievements in transforming their cities and delivering high-quality services to residents. In the photo, Mr. Bramwel Kisuya, Kenya's Ambassador to Spain, delivers an acceptance speech after Kenyan company MicroClinic Technologies won the Innovative Global South Award.

- Huawei has taken the lead in drafting nine national standards for smart cities in China.
- Huawei's smart city solutions have been successfully deployed in over 100 cities across more than 40 countries.

Public safety:

- We have continued to make new use of advanced ICT technologies, including cloud computing, big data, mobile broadband trunking, IoT, and artificial intelligence (AI). To help cities and the public safety sector go digital, we worked with partners to develop converged, open, one-stop Safe City solutions that are video-enabled.

- 2016 saw the official global launch of our Integrated Communication Platform. The platform breaks down barriers between different systems, enables on-site video coverage and clear communication of commands, streamlines coordination between different departments, and enables informed command decisions.
- Huawei's Safe City solutions now serve more than 800 million people in over 200 cities across over 80 countries and regions in Europe, Africa, and Asia-Pacific.

Finance: We have pursued joint innovation with more than a dozen top-tier financial institutions and independent software vendors around the world, researching next-generation IT infrastructure based on cloud computing and big data, to help financial institutions go digital faster on three levels: platform transformation, product innovation, and channel services. Specifically, we:

- Helped large Chinese commercial banks migrate their infrastructure to the cloud.
- Innovated in collaboration with the Industrial and Commercial Bank of China (ICBC) and China Merchants Bank (CMB) to apply new technologies in the finance sector, like real-time risk control and Financial Cloud.
- Developed an omnichannel customer service center for China CITIC Bank. This center supports evolution towards multimedia customer services, video-enabled customer services, and remote banking.
- Currently serve more than 300 financial institutions globally, including 6 of the world's top 10 banks.

Energy:

- Huawei became the only ICT solutions provider among the members of the Global Energy Interconnection Development & Cooperation Organization (GEIDCO).

- Based on our IoT connection management platform, we recently launched the Advanced Metering Infrastructure (AMI) 2.0 Solution, which will help to build the "nervous system" in an age of connected energy.
- The Huawei Better Connected Smart Grid Solution helped Thailand's Provincial Electricity Authority (PEA) build a secure high-speed production network. We also jointly established an Electricity Innovation Center with PEA.
- Huawei helped Nigeria build smart grids, achieving 100% success in remote daily collection of metering data and reducing line loss by 31%.
- The Huawei IP Hard Pipe Solution helped EPM, the largest public enterprise in Colombia, achieve reliable transmission of its operational data, and move towards unified O&M.
- The Huawei Better Connected Smart Grid Solution has been deployed in 65 countries, serving over 170 customers in the electricity sector.

Transportation:

- We released our Digital Urban Rail 2.0 solution, which has been applied extensively in the urban rail industry.
- We applied cloud computing and big data technology to railway operations (e.g., ticket and freight analysis) to tap into the value of railway data and improve the efficiency of railway operations and management.
- We developed a prefabricated modular data center for Dubai International Airport with our smart airport solution to meet the airport's growing IT requirements.
- We are working with over 60 industry partners, providing solutions for networks comprising over 220,000 km of railways and highways, and more than 15 airports with annual traffic of over 30 million passengers.

Manufacturing:

- Huawei and KUKA are collaborating on cloud computing, IoT, big data, and mobile technology to help manufacturing customers transform and embrace smart manufacturing.
- Huawei and ABB have teamed up to integrate Huawei's wireless IoT solution that combines broadband and narrowband technology into ABB robots and industrial automation solutions. The project involves remote wireless monitoring, management, and configuration of robots, supported by O&M, big data applications, and visualized intelligent manufacturing.
- Huawei worked with escalator and elevator manufacturers including Schindler in applying the Edge-Computing-IoT (EC-IoT) Solution to achieve the unified networking and management of millions of escalators and elevators worldwide.

Media: Huawei's media cloud solution has been extensively applied by media groups in over 10 countries in Western Europe, the Middle East, and Asia-Pacific, to help them accelerate their transformation towards IP-based, mobile, cloud-based omnimedia services. We:

- Helped France's TF1 build a converged media cloud platform for more efficient production of programs.
- Developed a media industry cloud with UAE carrier du, providing end-to-end cloud services for media customers. The solution covers the production, broadcasting, distribution, and archiving phases, and reduces O&M costs.
- Successfully delivered our media cloud solution for over 100 TV stations, including China Central Television and Shenzhen TV.

- Signed a strategic cooperation agreement with Hunan Broadcasting System to jointly develop one of China's most advanced omnimedia cloud platforms, integrating cloud with devices and supporting multiple screens.

Education:

- The Huawei Smart Campus Solution for Education has been deployed in over 200 universities in more than 70 countries and regions, including Lincoln University, Tsinghua University, and Nanjing University.
- Our High-Performance Computing (HPC) Solution helped more than 100 global universities and scientific research institutions such as the Poznan Supercomputing and Networking Center (PSNC) to apply innovative ICT to improve their research capabilities.
- Our Smart Classroom Solution has been used to facilitate elementary level education in many countries, including China, the US, Spain, Turkey, and South Africa.
- Through our Huawei Authorized Information and Network Academies (HAINAs), we have worked with over 140 colleges and universities around the world, and have trained more than 5,000 students.

Internet:

- Huawei's cloud data center SDN solution helped EVRY, one of the largest IT companies in the Nordic region, to build a future-proof SDN multi-tenant cloud data center, and begin its transformation into a cloud services provider.
- Huawei has provided optical transmission, routing, and broadband access solutions to the Amsterdam Internet Exchange (AMS-IX) and LINX in the UK to meet their need for high bandwidth, real-time data synchronization, and lossless failover.

Cloud: The cloud services developed jointly by Huawei and carriers have made significant advances in Europe, Latin America, and China. We:

- Worked with Deutsche Telekom to launch Open Telekom Cloud.
- Built the world's largest science cloud for 10 top scientific research institutions, including CERN, the European Organization for Nuclear Research.
- Partnered with Telefónica to provide high-quality cloud services in multiple countries in Latin America.
- Teamed up with China Telecom to enable cloud services for dozens of medium and large enterprises in China.

Huawei provides innovative, differentiated, leading ICT infrastructure, including both hardware and software, to support the creation of open, flexible, resilient, and secure platforms. We work with partners to help customers address the challenges of digital transformation and succeed.

IT: Huawei helps enterprises quickly migrate to the cloud and unleash their commercial potential. Huawei launched the world's first 32-socket mission critical server called KunLun, and released 31 FusionCloud services, FusionStorage 6.0, and the FusionStage PaaS platform. In 2016, Huawei's full portfolio of IT products moved

up the market rankings in reports released by Gartner, Forrester, and IDC. Huawei is now one of the world's most prominent IT vendors. Specifically:

- Huawei's OceanStor products were named a leader in *Gartner Magic Quadrant for General-Purpose Disk Arrays*.
- Huawei was named a Strong Performer by Forrester for its FusionSphere cloud OS and hyper-converged infrastructure product FusionCube.
- Our FusionServer 4-socket mission critical server was the global leader by shipments in Q3 2016 (Gartner), and moved into the Challengers quadrant in the *Gartner Magic Quadrant for Modular Servers 2016*.

As of the end of 2016, Huawei has delivered over two million virtual machines and 420 cloud data centers to customers. We worked together with over 500 partners to provide secure, reliable, and efficient cloud computing solutions across over 130 countries and regions.

Networking:

- We announced the Agile Network 2016 suite of innovative solutions and services, fulfilling our value proposition of "For the Cloud, By the Cloud".
- We unveiled two IoT solutions: Connected City Lighting Solution and Connected Elevators Solution.



Deutsche Telekom announces the launch of Open Telekom Cloud with Huawei at CeBIT 2016. The new public cloud platform provides European enterprises of all sizes with on-demand, pay-as-you-go, secure cloud services, and offers a complete suite of cloud services that includes private cloud, public cloud, and software solutions for enterprises.



In June 2016, Huawei's innovative products and solutions received three Best of Show "Grand Prix" Awards at Interop Tokyo 2016, in recognition of the quality of their technology. The Huawei KunLun 9032 Mission Critical Server received the Best of Show "Grand Prix" Award in the Server and Storage Category. The Huawei IP Hard Pipe Solution received the Best of Show "Grand Prix" Award in the Enterprise/SMB Networking Category. The Huawei NE40E-X2-M8A Universal Service Router won the Best of Show "Grand Prix" Award in the Carrier/ISP Networking Category. Huawei won the Interop ShowNet "Grand Prix" Award for best equipment vendor. In the above photo, a representative of the Interop Tokyo Committee presents the 2016 Interop Tokyo Best of Show "Grand Prix" Award to Huawei.

- We released multiple WAN solutions that restructure enterprise WANs on three levels: cloud interconnection, industrial interconnection, and cloud access.

According to reports released by IDC in Q3 2016:

- Our Ethernet switches and enterprise routers are ranked No. 2 globally in terms of market share, and are the market leader in China.
- Our data center switches are No. 3 in terms of global market share, and No. 1 in the Chinese market.
- Our WLAN products rank No. 4 globally and No. 2 in China.
- Our enterprise firewall products are ranked No. 2 both in China and globally.

Our AnyOffice solution was named a Leader in IDC's *China Enterprise Mobility 2016* report. Huawei's enterprise networking solutions have been deployed in over 100 countries and regions.

Cloud services:

- Huawei has established strategic partnerships with over 30 Chinese cities, built a cloud service resource network that covers all Chinese provinces and municipalities, and has become a leader in China's e-government cloud market.

- We have established and optimized an online sales and operations system for cloud services, and enjoyed a 10-fold increase in the number of paying users in 2016.
- Huawei's enterprise cloud services were among the first candidates to receive "Enhanced" certification in the cloud service capability evaluations by China's Ministry of Industry and Information Technology.
- In Forrester's *Public Cloud Platforms In China 2016* report, Huawei was named a Strong Performer in China's public cloud market.

In the cloud service domain, we have established many partnerships:

- Huawei and Digital China built China's largest O2O cloud ecosystem, covering both cloud and devices.
- We teamed up with Philips to build a healthcare cloud platform delivering an end-to-end suite of services.
- We worked with WuXi AppTec to launch China's first precision medicine cloud platform.
- Huawei has over 500 enterprise cloud service partners in the sectors of smart city, media and entertainment, finance, IoT, smart manufacturing, e-commerce, and healthcare, working together to drive robust development of the cloud ecosystem.

Enterprise wireless:

- Sales of our enterprise wireless products grew rapidly in the public safety industry. Our broadband trunking solution was successfully deployed in Thailand, Spain, and other countries, and our wireless smart rail transit solution has been adopted by multiple Chinese customers in the transportation industry.
- Based on 4G/4.5G technology, Huawei integrated both licensed and unlicensed spectrum in its new wireless IoT solution that combines broadband and narrowband technology. The solution has been successfully deployed to provide uninterrupted, reliable, and secure wireless networks for the electricity, port, railway, manufacturing, and smart city industries.
- As of the end of 2016, Huawei has signed 296 enterprise wireless contracts. In the meantime, the total number of members of the eLTE Industry Alliance rose to 91, further expanding the ecosystem.

Enterprise cloud communications: Huawei's enterprise communications products and solutions are used in over 150 countries and regions, and help customers improve efficiency and provide innovative services via efficient and reliable real-time audio and video communications. According to a report from IDC, in 2016 Huawei's videoconferencing products ranked first in China for the fourth consecutive year. Worldwide, Huawei has had the third largest market share in videoconferencing products for three years running.

IoT: NB-IoT technology, developed under the leadership of Huawei, was the first low-power WAN solution to achieve widespread adoption by carriers. Combined with the eLTE-IoT access solution, the WAN solution is able to meet the demand for low-power WAN access in a wide range of use cases. The PLC-IoT technology adopted in Huawei's energy IoT solution was officially initiated as an IEEE project in September 2016. In 2016, smart meters powered by PLC-IoT were in use in 10 countries. Together with carrier partners, Huawei has begun working on IoT solutions for many manufacturing customers.

Network energy: We leverage fully-integrated, modular technology to provide our customers with simple, efficient, and reliable ICT power supply solutions. In 2016, we achieved the following:

- According to statistics from IHS and Frost & Sullivan, Huawei's prefabricated modular data center and modular UPS hold the largest market share globally.
- Frost & Sullivan presented the 2016 Modular UPS Company of the Year Award to Huawei, and Huawei UPS won the 2016 Platinum Award in IT from *Data Center Insider*.
- Huawei's prefabricated modular data center and modular UPS have been deployed on a large scale in the finance, transportation, ISP, public safety, and government sectors.

Our innovative FusionSolar Smart PV Solution integrates digital technology, the Internet, and photovoltaic (PV) technologies to help PV plants achieve automated O&M around the globe. According to the latest reports from IHS and GTM Research, Huawei PV inverters are the most-shipped PV inverters globally. Huawei has established comprehensive partnerships with global top 50 PV plants.

[Huawei emphasizes customer-centricity, creates shared success, and builds a sustainable ecosystem. We have stepped up efforts to develop and invest in industry alliances, business alliances, open source communities, and developer platforms. We leverage the strengths of our partners to grow the industry as a whole, building a symbiotic, interdependent, and regenerative community of common interests.](#)

Huawei innovates in the areas of cloud computing, big data, SDN, and IoT to develop open, flexible, resilient, and secure platforms. We also work actively with customers, partners, developers, industry alliances, and standards organizations to build an interdependent ecosystem that fosters shared growth.

As of the end of 2016, we have more than 12,000 channel partners and 2,000 service partners working with us to deliver solutions to enterprises. We have over 400 solution partners, including Accenture, SAP, GE, T-Systems, Honeywell, Infosys, Siemens, Alstom, and Hexagon. In 2016, we also launched our first Enterprise Solution Partner Program (SPP).

Huawei has 13 OpenLabs worldwide, and opened five OpenLabs in Suzhou, Munich, Mexico City, Singapore, and Dubai targeting vertical industry customers. These labs have become centers for joint innovation, development, and verification, and experience centers for Huawei and our customers and partners. We have joint innovation centers with 36 industry-leading customers.

We have set clear, transparent policies for our partners, and provide strong support in the joint innovation of solutions, finance, supply chain, and IT support. We work with them to build their capabilities and drive their transformation forward to ensure mutual success.

In cloud computing and big data, we:

- Announced enterprise cloud solutions together with Accenture, offering one-stop services to help global enterprise customers cloudify their core applications.
- Partnered with ESI to provide innovative industrial manufacturing solutions for customers worldwide.
- Expanded our collaboration with Oracle to deliver better resource efficiency for key enterprise business systems.

In addition, we have actively contributed to open source communities and worked for the standardization of cloud platforms. Our role in the OpenStack Foundation continues to grow, and we are now a Platinum Member. At the end of 2016, Huawei was among the top three contributors to the Hadoop and Docker communities.

IoT: Huawei and our partners jointly launched the Edge Computing Consortium (ECC) to create a cooperative platform for the edge computing industry, and to promote openness and collaboration in the Operational Technology (OT) and ICT industries.

Huawei has also developed innovative high-end services to support the migration of enterprise data centers to cloud data centers. These end-to-end services range from consulting, planning, and design to systems integration and implementation, consolidation, migration, and O&M management. Huawei is now working with over 2,000 service partners to provide high-quality professional services to over 45,000 customers. We are gradually becoming the preferred ICT service partner for many industry customers.

Development of ICT talent: Huawei is dedicated to linking talent demand with talent supply. We are developing a large commercial training and certification system to cultivate ICT expertise amongst our customers and partners. Huawei is working with over 300 universities. We have opened over 190 network academies and 45 training centers globally, and have signed contracts with 260 training partners. Over 60,000 engineers have received Huawei certification. There are now over 2,500 Huawei Certified Internetwork Experts (HCIEs), the highest-level technical certification offered by Huawei.

Innovative ICT is now spreading from enterprise office systems into core production systems. Industry transformation is gathering momentum, which introduces new demands and unprecedented challenges for ICT infrastructure. Huawei will embrace these historic opportunities, face challenges head on, and work with our industry partners to develop open, flexible, resilient, and secure platforms. We will build sustainable ecosystems that enable shared success. With our sights set on industry changes and customer needs, we will continue to innovate, facilitate the transformation of enterprises, and create value to help our customers succeed.

Consumer Business

In 2016, Huawei's Consumer BG maintained its tight focus on consumers, and continuously improved consumer experience. We focused on meaningful innovation, and made major breakthroughs in a number of areas. We achieved new levels of industry leadership, product innovation, and global recognition as a premium brand. Our products are now loved by more consumers and supported by more partners.

In 2016, revenue from our consumer business was CNY179,808 million, up 43.6% year-on-year. We shipped 139 million smartphones throughout the year, an increase of 29% from 2015, and we achieved steady growth for the fifth consecutive year.

Breakthroughs in European high-end market; balanced, steady development worldwide

Thanks to our increasingly innovative products and growing global recognition as a premium brand, Huawei's global smartphone market share rose to 11.9%¹ in 2016, cementing our ranking as one of the top 3 players globally.

- Flagship products were more popular. The HUAWEI P9 and HUAWEI Mate 9 series were particularly well received worldwide.
- Global shipments of the HUAWEI P9 series exceeded 10 million units, the first Huawei flagship handset to reach this milestone.
- The increasing proportion of mid-range and high-end products among all Honor smartphones generated a steady increase in revenue for the Honor brand.

In 2016, Huawei's Consumer BG made major breakthroughs across the European market,

and achieved balanced, steady growth in many markets around the world:

- According to GfK, Huawei's smartphone market share is now over 15% in northeastern Europe and over 10% in western Europe.
- In some northern European countries, Huawei holds a leading market share, and our phones have gained a supportive base of dedicated fans.
- By December 2016, Huawei held a market share of over 15% in 33 countries, and over 20% market share in 22 of these countries, half of which were in Europe².

Huawei's share of Europe's high-end smartphone market rose rapidly owing to strong sales of the HUAWEI P9 series. GfK reported that Huawei's smartphone market share in the EUR500–600 price range grew by 6 percentage points in western Europe and 8 percentage points in northeastern Europe after the launch of the HUAWEI P9 series.

In China, Huawei's smartphone market share increased to 18.1% in 2016, and we are in a leading position in the CNY3,000–4,000 price range. In Latin America, Africa, the Middle East, and some other regions, Huawei has achieved over or close to a 15% market share.



Huawei and Porsche Design collaborated to introduce the limited edition Porsche Design HUAWEI Mate 9.

¹ GfK report on global smartphone market share, 2016

² GfK report on smartphone market share, December 2016

Meaningful innovation, leading new tech trends

In 2016, Huawei's Consumer BG focused on meaningful innovation. We made major breakthroughs in areas including chipsets, user interface (UI), and dual-lens camera technology. We also built new capacity for product innovation.

Chipsets: The Kirin 960 chipset is the world's first system-on-a-chip (SoC) to feature an ARM Cortex-A73 CPU and a Mali-G71 Octa-core GPU:

- Compared with its predecessor, the Kirin 960 enables 180% better graphics performance and an 18% improvement in CPU performance.
- The chipset also includes the latest UFS 2.1 storage technology. Smartphones powered by the Kirin 960 can smoothly support 3D gaming and multi-app scenarios, offering consumers a fast user experience.

UI: Our consumer business R&D team addressed the issue of Android phones slowing down over time, which has frustrated Android users for years. Led by some of the world's leading Linux experts, the team significantly optimized

the Android system, and unveiled EMUI 5.0 – software that is tightly integrated with the Kirin chipset to take full advantage of Huawei's strengths in both software and hardware. The new UI includes highly optimized system resource allocation controlled by a smart learning system.

Huawei partnered with top global brands including Leica and Porsche Design to design and develop devices that deliver a superior experience:

- Dual-lens cameras: Huawei and Leica jointly developed two generations of dual-lens cameras in 2016, sparking a new trend in smartphone photography. The two companies plan to continue joint research and development in the fields of optical systems, imaging algorithms, virtual reality, and augmented reality, to maintain a leadership position in smartphone photography.
- Industrial design: Huawei worked with Porsche Design to introduce the limited edition Porsche Design HUAWEI Mate 9.

Benefiting from these advances, the HUAWEI Mate 9 series won recognition from high-end business users and the international media after its launch. It won a best smartphone award



In 2016, Huawei and the renowned German camera brand Leica jointly designed and developed new dual-lens camera photography systems. The systems have won the acclaim of top photographers around the world, and sparked a new trend in smartphone photography. These images were shot by top photographers using the HUAWEI P9 Leica camera.

from three major German technology and media publications: Chip, Connect, and Areamobile. At the Consumer Electronics Show (CES) 2017, the HUAWEI Mate 9 was selected as a Best of CES 2017 product by many top-tier media outlets and institutions, including the *Wall Street Journal*.

Gaining stronger recognition as a premium global brand

As well as building new capacity for product innovation, Huawei's Consumer BG has worked on building a world-class brand, and consumer awareness of Huawei as a premium brand has further increased. According to a survey by Ipsos, global brand awareness of Huawei rose from 76% in 2015 to 81% in 2016. Huawei once again ranked on Interbrand's *Top 100 Best Global Brands*, this year at 72nd, and in the BrandZ *Top 100 Global Brands* at No. 50.

Huawei's Consumer BG launched several global marketing campaigns in 2016 integrating elements from fashion, photography, entertainment, and sports. We partnered with global fashion brands Vogue and GQ Magazine, and with many Fashion Week event organizers. These campaigns have helped to communicate the Huawei brand and to associate it with the lifestyles of our target consumers on an emotional level.

For the first time in Huawei's history, we ran a single, global marketing campaign for the HUAWEI P9 series with the same activities, schedule, and images worldwide. The campaign included joint marketing with 39 European carriers. This reinforced Huawei's image as a global premium brand, and helped improve the mix of consumers in our user base.

According to an analysis of Facebook user data, 58% of HUAWEI P9 users are between the ages of 18 and 34, compared with 37% for the HUAWEI P8. The share of female users is 27 percentage points higher for the HUAWEI P9 than for the HUAWEI P8.

According to an Ipsos study of consumers in markets other than China, the number of consumers considering buying a Huawei device rose 66.7% over 2015, and those who preferred the Huawei brand doubled during the same

period. "Sleek design", "stylish", and "powerfully innovative" are becoming the top-of-mind associations that consumers in markets outside China have with Huawei smartphones.

Throughout this ongoing process of growth, our consumers remain at the heart of everything we do. We have actively expanded our sales channels and service stores to enhance brand awareness and build greater recognition. In 2016:

- Our global retail network expanded.
- We built long-term stable partnerships with thousands of distributors and retailers all over the world.
- The share of revenue contributed by open market channels rose to 71%, up 13 percentage points compared to 2015.

Huawei now has service stores in 45 countries, and we have global service centers that provide hotline services to consumers in 105 countries. According to Ipsos, Huawei ranks No.1 in service satisfaction among consumers in many countries, including China, Poland, Mexico, and Egypt.

Embracing future trends and investing in core technologies for next-generation smart devices

The global smart device industry is undergoing a major transformation. Huawei's Consumer BG needs to gain insights into what consumers want, embrace and lead industry changes, and have the courage to innovate.

In 2016, Huawei actively pursued innovation geared toward the intelligent products of the future:

- In artificial intelligence, Huawei invested in intelligent sensing, intelligent cognition, and intelligent computing. We developed artificial intelligence systems that enable synergies between software and hardware, as well as between devices and cloud.
- Huawei made breakthroughs in areas such as sensor algorithms, computer vision, search engines, and natural language processing. We introduced HiBoard to deliver situation-appropriate smart services to consumers.

- In December 2016, we launched Honor Magic, which offers a glimpse of what future intelligent phones will look like. This future-proof phone demonstrates the achievements Huawei has made in its explorations into artificial intelligence.

Huawei strives to bring a smarter experience to consumers in all scenarios. We have achieved market breakthroughs in PCs, tablets, wearables, smart home, and connected vehicles. In 2016:

- Our tablet business grew dramatically despite unfavorable market conditions. We recorded strong performance in both the B2B and B2C markets. Total shipments exceeded 10 million units, up 90% year-on-year.
- With our HiLink-based smart home platform, we formed strategic partnerships with Haier, Gree, and other major home appliance manufacturers, forging a new collaborative ecosystem.
- Huawei's innovative connected vehicle products have attracted globally leading brands like Audi and Volkswagen.

To enrich the consumer experience delivered by Huawei devices and software, Huawei's Consumer BG is working to build an ecosystem of consumer cloud services.

- In China, the ecosystem has already taken shape. Over 220,000 developers have registered to be part of Huawei consumer cloud services. In 2016, our partners earned over CNY2.8 billion from these services.
- Outside China, we have put in place the infrastructure that is needed to deliver basic cloud services, and we have successfully launched multiple innovative services in over 170 countries. Huawei's basic cloud services are now global.

In 2017, our Consumer BG will maintain its tight focus on the needs of our consumers. We will continue to build capacity in channels, retail, branding, marketing, and services, and will work to make our operations and customer services more efficient and cost-effective. With bold innovation and new, future-ready intelligent products, we will continue to deliver the best user experience in every consumer scenario. We will build core competencies to lead future trends and strive to become a culturally vibrant tech brand loved by global consumers.

Research and Development

Huawei remains tightly focused on its ICT pipe strategy. To build a Better Connected World, we continue to invest in key technologies, basic engineering capabilities, network architecture, technical standards, and product development. We aim to create a better user experience by providing broader, smarter, and more reliable data pipes, with higher performance and zero wait time.

We are committed to translating leading technologies into better and more competitive products and solutions that help our customers succeed.

Wireless networks: Huawei achieved the following in 2016:

- In line with our All Cloud strategy, we released the CloudRAN and CloudAIR end-to-end mobile cloud solutions: CloudRAN redesigns wireless networks with cloud architecture, and CloudAIR revolutionizes the usage of air interface resources.
- Released our 4.5G Evolution concept and furthered LTE evolution, building on the industry-wide consensus on 4.5G and the growing number of 4.5 commercial

networks. Widely deployed our Massive MIMO technology, a key 5G technology, on existing 4G networks.

- Launched the industry's first NB-IoT chipset, the first NB-IoT communications module, and the first NB-IoT commercial release for base stations. All these efforts have helped to nurture the emerging NB-IoT ecosystem.
- Released version 2.0 of our WTTx solution, with increased data pipe capacity, fixed-mobile convergence, more efficient operations, and more support for service innovation.
- Released our indoor digital solution LampSite 3.0. This solution represents a

major breakthrough on the RF bottlenecks that have held back the industry for years. It enables a neutral host model in which the same indoor infrastructure can be shared by multiple carriers.

Carrier and enterprise networks: Huawei announced its All Cloud strategy to help carriers, enterprises, and industries go digital by enabling networks that are ubiquitous, experience-driven, agile, on-demand, and ultra-broadband.

For the telecom market, we:

- Launched our leading Flex-PON solution to overcome the challenges of smooth migration to gigabit access.
- Unveiled our PID to simplify WDM networks and overcome the challenges of the ultra-high bandwidth required by video services.
- Launched our 128 Tbit/s NE5000E 2+8 router cluster system, able to handle traffic spikes on backbone networks and provide high-speed data center interconnects.
- Released the VideoSense solution, enabling carriers to deliver visualized, manageable video services with a guaranteed experience.

For industry/enterprise customers, we accomplished the following:

- Our CloudCampus solution employs cloud technology to manage campus networks on the cloud throughout their lifecycles.

- Our CloudEPN solution helps to connect enterprises to their branch organizations and enables fast provisioning of value-added services.
- We upgraded our CloudFabric solution for DC networks. With its smart analysis system built on big data, the upgraded solution is able to locate a network fault within minutes.

All carriers and enterprises/industries are scrambling to build the strengths that they will need to compete in the cloud era. In this context, Huawei launched the Agile Controller, the industry's first unified SDN controller able to handle different customer scenarios. It enables customers to build agile, on-demand All Cloud networks that will help them succeed in their business.

Software: We focused on building competitive Digital Native software platforms. Specifically:

- We officially launched our converged video platform and began global delivery. The platform features cloud architecture, high capacity/high performance, agile operations and maintenance, and supports an inspired 4K video experience.
- Our billing solution now supports incremental delivery of suites; smooth evolution of the baseline version; and five best cloud deployment practices, including CDR cloud and Bill cloud. It delivers the best bill run performance and supports open APIs and six types of openness scenarios.



At the Global Mobile Broadband Forum held in Tokyo in November 2016, Huawei announced its Wireless X Labs plan, which aims to bring together carriers, technology providers, and vertical industry partners to jointly explore future use cases for mobile applications, drive innovation in business and technology, and promote an open industry ecosystem.

- We further advanced our platform suite strategy to enable third party developers to deliver applications as delivery service vendors (DSVs), and our open and innovative platform has drawn positive response from throughout the industry.

Cloud core networks: Huawei has remained dedicated to providing end-to-end connection and communications to any access network, and to enabling upper-layer applications through differentiated experience controls. Specifically, we:

- Released our CaaS 2.0 solution, a unified enabling platform to open our communications capabilities including real-time voice and video, data pipe functions, and user data functions. This solution delivers network capabilities as a service for application in any industry.
- Announced the OceanConnect open platform ecosystem. With the IoT connection management platform at its core, the ecosystem brings together a great range of applications and access technologies.
- Developed the concept of Big Video network that supports convergent video services for communications and industry applications across networks and geographical areas.
- Launched the world's first "six-in-one" cloud videoconferencing endpoint, the TE10. Connecting to a wide range of cloud platforms, the TE10 delivers video services for every type of business.
- Unveiled the world's first 5G end-to-end network slicing prototype and verified its multi-service slicing technology.
- Released the industry's first future-oriented Multi-access Edge Computing (MEC) solution that delivers lower network latency and a better service experience.

Network energy: Guided by our forward-looking principles of *using silicon instead of copper and using bits to manage watts*, we combined basic research in power electronics with ICT technology, and continued to provide customers

with competitive products and solutions. Specifically:

- We continued to push the boundaries of efficiency in our power supplies, and developed a smart base station power solution to help customers reduce O&M costs.
- For large cloud DCs and high-reliability enterprise applications, we launched a UPS module with efficiency of 97.5% and power density of 50 kVA/3U, able to support all of the world's power grids.
- We worked on photovoltaic (PV) power systems and grid control algorithms and rolled out our smart PV solution 3.0, with improved end-to-end efficiency and increased capacity to deliver low voltage power.

In the IT field, Huawei has innovated in many different ways on cloud applications. We have provided customers with leading servers, storage devices, networks, and other IT infrastructure and helped them create high-performance computing solutions that are efficient, accelerated, and integrated.

In cloud computing, we achieved impressive results:

- In public cloud, we have developed distinctive competitive strengths. We continuously increased the IOPS capability of our block storage service, which is now leading the industry, and launched a bare-metal server to support mounted block storage devices and automatic service provisioning.
- In private cloud, we have maintained a leading position in our SPECvirt performance, and our host replication DR mechanism delivers unmatched second-level Recovery Point Objective (RPO) performance.
- In NFV, our software switch is No. 1 in terms of forwarding performance. It provides carrier-class virtual machine reliability, enabling fault detection and protection switching within seconds in the event of a fault on the virtual or physical machine.

- In hybrid cloud, we launched the industry's leading hybrid cloud solution, which supports standard OpenStack APIs. It outperforms all other solutions in terms of automatic inter-cloud connectivity and image sharing across heterogeneous cloud environments.

In the storage field, we have accomplished the following:

- In enterprise storage, we released an enhanced version of OceanStor V3, the industry's most competitive storage equipment, to support SAN/NAS active-active failover, all-flash drives, and deduplication and compression. We also got a head start in launching the most cost-effective entry-level storage equipment that uses Huawei-made CPU. As many customers around the world continue to upgrade mechanical hard drives to solid-state drives (SSDs), we launched the next generation flash array Dorado V3, which is an industry leader for its capability to deliver 150,000 IOPS.
- In cloud storage, we released our HD video solution OceanStor 9000 to support next-generation 4K HD video production systems. Based on the concept of software-defined storage (SDS), we released FusionStorage 6.0, the industry's first enterprise solution with converged storage of distributed blocks, files, and objects. This solution enables access and storage of structured, unstructured, and semi-structured data across different platforms.
- We also began to shift from selling data storage to offering storage services, and rolled out the Storage as a Service (STaaS) solution. It is the industry's first storage solution to provide a unified data and control plane for enterprise storage, distributed storage, cloud storage, and to intelligently integrate storage with applications. Based on this solution, we led the creation of the OpenSDS Industry Alliance, which has attracted more than 10 leading providers and customers from around the globe.

Big data: We added a number of key technologies to our FusionInsight, such as unified SQL, unified search, multi-tenant, large heterogeneous environment, relational analysis, and real-time analytics on data streams to address the unique needs of telecom, finance, and security sectors. By using the Superior scheduling engine, the FusionInsight solution supports enterprise-level multi-tenant functionality in a large heterogeneous environment. FusionInsight's real-time analytics on streaming data mean that for the first time financial risk controls can be effected in real time, rather than retrospectively. In addition, building on existing industry practices, we created Apache CarbonData, a new Hadoop native file format that delivers ultimate multi-dimensional analytics on big data platforms. We also developed the ELK engine that delivers the best interactive experience.

In the server domain, we accomplished the following:

- We launched our KunLun server line at CeBIT 2016. Focused on mission critical enterprise applications, our KunLun servers are an industry breakthrough that paves the way for open-architecture computing. It incorporates Huawei-made NC chips, RAS, open design, and other innovative technologies.
- Our ES3000 V3 NVMe PCIe SSD (ES3000 SSD for short) uses Huawei-made chips and standard PCIe interfaces and can significantly improve the performance of databases and enterprise cloud services. Thanks to its superior performance, it won the Best Internet Technology Innovation Award at the Global Technology Innovation Conference in 2016.
- Our FusionCube solution has expanded from single-database scenarios to full-service cloud DC applications.
- Working with leading Independent Software Vendors (ISVs), we pursued collaborative innovation in areas such as HPC and SAP to develop mature, efficient HPC platforms for industries.

Huawei has continued to increase investment in forward-looking fundamental research and innovation, and has made great advances at the frontiers of ICT. Our aim is to drive progress in the industry and to develop successful business models via breakthroughs in technology.

5G mobile communications: Huawei, under the leadership of 3GPP, has actively promoted the formulation of unified global 5G standards, continued to invest in 5G technology research and innovation, and actively worked with carriers to perform field tests of key 5G technologies. We have also achieved important results in the development and verification of new technologies, in network architecture, and in our collaboration with industry players. These advances have helped us maintain a leading position in the industry. Specifically, we:

- Delivered a super-fast speed of 70 Gbit/s over millimeter bands using MIMO technology.
- Became the first company to release a 5G-oriented CloudRAN solution, which uses cloud technology to redefine wireless network architecture.
- Conducted the industry's first live demo of 5G end-to-end network slicing technology to support diversified 5G use cases.
- Continued to strengthen our partnerships with 5G-PPP, 5GIC, 5GVIA, IMT-2020, and other industry alliances; and established the 5GAA with several leading partner companies to jointly drive the development of unified standards for connected vehicles.

In network technology research, we:

- Launched the industry's first VR-ready network solution. This solution incorporates new technologies to provide non-blocking, deterministic low latency, and high throughput networking infrastructure, so as to address the challenges presented by future online VR video services.

- Announced the next-generation distributed router architecture that boosts cloud computing and cloud networking. The router exploits optical connections and pizza box architecture to provide more than 10 Pbit/s ultra-large system capacities. Such routers can be deployed in various scenarios including the edge of the network, the core nodes, or in DC networks.

In network theory research, we:

- Proposed the concept of the *application-driven network* with the aim of creating the most efficient network architecture so that networks can better address the great variety of demands that will be placed upon them by new service applications in the future.
- Achieved breakthroughs in models, theories, and algorithms in the areas of information consumption, network controls, and network measurement.
- Published concept white papers, built the architecture prototype, and achieved impressive results in high performance measurement. We ultimately defined a theory-based, application-driven target network that is highly automated and will satisfy the needs of the coming digital world.

In DC evolution, Huawei has continued to optimize the architecture of our DC 3.0 prototype and greatly improved its overall performance. Specifically, we:

- Released the industry's No.1 TPCx-BB solution, and played a leading role in drafting international energy testing standards for big data benchmarking.
- Released a series of models and a scale-out parallel emulation platform for typical ICT application scenarios.
- Developed an industry-leading NVM file system with innovative NVM technology.

The DC 3.0 architecture enables major architecture innovations and new software and hardware for the next-generation DCs. Huawei will be offering customers cost-effective, green DC solutions with world-leading performance.

Optical network research: Huawei proposed Optical Network 2.0 for the All Cloud era, and has made significant technological innovations in optical transmission. Specifically, we:

- Released a prototype of 320 Tbit/s OXC, the industry's largest cross-connect capacity. This resolves the capacity bottleneck caused by digital cross-connects in optical networks.
- Unveiled the industry's first all-silicon OXC chip, with 32x32 ports, to deliver ultra-low power consumption and ultra-fast switching.
- Announced a 4-port silicon photonics coherent transmission prototype, able to support Tbit/s-level transmission.

Huawei Optical Network 2.0 aims to deliver the best customer experience by providing ultra-large bandwidth, super-low latency, ultra-high energy efficiency, fast service provisioning, and IT-enabled operation and maintenance.

Artificial intelligence (AI): Huawei has focused on strategic businesses, improved the delivery efficiency and service quality of our Global Technical Service (GTS) team by using AI technologies, and realized early detection and prevention of network faults. All these efforts have helped us to continuously create value for customers. Our achievements include the following:

- Our distributed real-time stream processing system StreamSMART and online learning algorithm StreamMBT enable GTS to provide smart customer services. They have increased the accuracy of automatic fault classification to over 85% and can cover 90% of anomaly scenarios.
- Our Network Mind uses reinforcement learning to better schedule network traffic, and improves transmission efficiency by 40% across applications.
- Our Honor series smartphones are able to intelligently deliver personalized services and are helping the handset industry enter the AI era.

- The Huawei recommendation engine can build an accurate model within minutes and boosts downloads of the apps it recommends by 40%, representing a major improvement to user experience.

Batteries: We continued to focus on three features: large capacity, fast charging, and safety. Specifically, we:

- Delivered a 5V/8A high-current fast charger with new electrode material in our Honor series smartphones, which can charge to over 90% in just 30 minutes.
- Unveiled the industry's first long-life, heat-resistant, graphene-assisted Li-ion battery. The special additive in the electrolytes and doped electrode material allow Li-ion batteries to remain functional even when exposed to temperatures 10°C higher than the industry's current upper limit. This has brought about revolutionary changes for energy storage in telecom base stations in warm climates.

[Huawei works with global partners on innovation to advance technological progress at our 15 research institutes and centers, and at 36 joint innovation centers around the world.](#)

The following are some highlights from 2016:

To explore new breakthroughs and innovations in the ICT industry, the Huawei Innovation Research Program (HIRP) sponsored more than 200 innovation and research projects, including research in basic science such as mathematics, physics, and chemistry.

We worked with mathematicians from around the world, including Fields Medal and Wolf Prize winners, on projects ranging from fundamental mathematical theory to key engineering questions. We invested heavily in research into image processing, data mining, network optimization, and related areas.

We also collaborated with physicists around the world (including Nobel Prize winners and their teams) on research projects relating to next-

generation storage systems and media, such as materials science for new storage media; component modeling and simulation; and applications of new memory interface protocols. In addition, we significantly reduced the costs by using new storage media in software and hardware, and dramatically increased their lifespan. This work has boosted Huawei's research reputation in the field of next-generation storage systems.

Huawei maintains ongoing, in-depth collaboration with global universities in areas such as databases, DC power consumption, and distributed technology. In 2016, we solved the problem of slow response to parallel queries in big data environments with limited resources.

Huawei is a major contributor to ICT standards. We are actively involved in the development and promotion of major international standards. We are also active in open-source communities as part of our ongoing efforts to build out the industry and cultivate an ecosystem that promotes shared success.

In 2016, we:

- Actively participated in 5G, video, IoT, and other major industry initiatives, and promoted broader industry cooperation across multiple industry organizations.
- Worked with industry partners in the 3GPP to advance the unified 5G standards around the world. In the IETF, we committed significant effort to supporting the healthy development of IP standards and the IP ecosystem.
- In the IEEE, we focused on research into Wi-Fi and Ethernet basic technologies, and took strides toward establishing a research presence in vertical industries. In ETSI and ITU, we helped to accelerate industry upgrade by leading the development of carrier technology standards, and lobbied for more spectrum to be released for the wireless industry.
- With industry partners, we created the Green Computing Consortium, ECC, 5GAA, OPRC, and other industry alliances to build up consensus across industries and to expand the addressable market size.

- Facilitated cooperation between GSMA and OPRC, and helped to establish the Digital Maturity Model and Metrics (DMMM) working group within the TM Forum to discuss the goals of digital transformation for carriers, based on empirical business metrics.
- As a member of the Industrial Internet Consortium (IIC), we analyzed the needs and application scenarios relating to the digitization of vertical industries.
- In the Broadband Forum (BBF), we promoted the establishment of the Open Broadband Initiative (OBI), and improved industry consensus on PON convergence and networking cloudification, leading to a better and broader environment for the network industry.
- Promoted collaboration among open source communities, standards organizations, and industry alliances including ETSI NFV, OPNFV, OpenStack, and OPEN-O. Worked with partners to establish the NFV Interoperability Testing Initiative (NFV-ITI) alliance to accelerate commercialization of NFV.

As of December 31, 2016, Huawei has filed 57,632 patent applications in China and 39,613 outside China, with a total of 62,519 patents granted.

As of December 31, 2016, Huawei is a member of over 360 standards organizations, industry alliances, and open source communities, and holds more than 300 positions of responsibility within these organizations. Huawei is a board member of IEEE-SA, BBF, ETSI, TM Forum, WFA, WWRF, OpenStack, Linaro, OPNFV, and CCSA. In 2016, we submitted more than 6,000 proposals to standards organizations (over 49,000 to date).

Huawei has consistently invested over 10% of its revenue in R&D every year. In 2016, approximately 80,000 employees were engaged in R&D, comprising 45% of our total workforce. Huawei's R&D expenditures totaled CNY76,391 million in 2016, accounting for 14.6% of the company's total revenue. We have spent more than CNY313,000 million on R&D over the past decade.

Cyber Security and Privacy Protection

Our attitude

Technological innovation is accelerating in cloud computing, IoT, video, big data, and artificial intelligence, while smart devices are connecting more and more people. Against this backdrop, the scale of personal data shared and collected is growing at an unprecedented rate. Rapid technological development and globalization are constantly presenting new challenges to cyber security and presenting us with a fresh set of challenges related to privacy protection.

At Huawei, we adopt an open, transparent, pragmatic, and rigorous approach to cyber security. Huawei's commitment to cyber security will never be outweighed by its own commercial interests. Establishing and implementing an end-to-end global cyber security assurance system is one of our core development strategies. In addition to steadfast concentration on cyber security assurance, Huawei places special emphasis on user privacy, ensuring that we comply with all local laws and regulations related to privacy and personal data protection.

Our practice

Our Global Cyber Security and User Privacy Protection Committee is the company's highest organization for managing cyber security and user privacy protection, and has been operating in this capacity for many years. We have a stable and capable security workforce, and our Global Cyber Security & Privacy Officer reports directly to the CEO. All of Huawei's relevant business

units have cyber security and privacy offices. We release a large number of policies and ensure the timely and comprehensive update of all related processes. We recently published the *Huawei General Privacy Protection Policy*, which specifies the privacy-related responsibilities of Huawei's business departments and employees regarding the processing of personal data. Protecting end users' privacy and freedom of communication has been included in Huawei's *Employee Business Conduct Guidelines* (BCGs), and all Huawei employees around the world are required to learn, sign, and comply with the BCGs.

It is our belief that all stakeholders must work together, joining efforts to address the global challenge of cyber security. We have taken the initiative to share our ideas and practices and have presented a proactive voice in cyber security:

- In February 2016, Huawei Global Cyber Security & Privacy Officer John Suffolk delivered a keynote speech at the Munich Security Conference entitled *Upcoming Security Challenges and Ways to Deal with Them*. In the speech, he elaborated on Huawei's approach to cyber security, and highlighted the importance of focusing on today's cyber security issues while also reviewing tomorrow's security risks.
- In March 2016, David Francis, European Cyber Security Officer (CSO) at Huawei, delivered a keynote speech at the Commonwealth Cybersecurity Forum 2016. He explained that security should be built into devices, network architecture, and employee ethos – rather than bolted on as an afterthought.



John Suffolk delivers a keynote speech at the Munich Security Conference.



The Secretary-General at the Commonwealth Telecommunications Organisation has recognized Huawei's cyber security practices.

Francis also outlined why organizations need to take an open and cooperative approach to cyber security, to ensure product security is given the same priority as product quality. Shola Taylor, Secretary-General at the Commonwealth Telecommunications Organisation, applauded Huawei's efforts in cyber security.

- In June 2016, Huawei published its fourth cyber security white paper, entitled *The Global Cyber Security Challenge – It is time for real progress in addressing supply chain risks*. Authored by Huawei's USA CSO, Andy Purdy, the white paper was designed to inform ongoing efforts, best practices, and standards on how the global ICT industry can address supply chain security challenges. The white paper discusses how to ensure security in the global supply chain, shares best practices from supply chain experts and standards bodies as well as Huawei, and calls for all stakeholders pick up the pace of collaboration to address this common challenge.
- In November 2016, the Third Huawei MBB Cyber Security Mindshare Forum was held in Tokyo, which focused on the security challenges introduced by 5G/NFV, advocating industry-wide cooperation. A number of carriers (including Telefónica, SoftBank, Telenor, O2, and Bharti), international organizations (including 3GPP, P3, and Infineon), and Huawei's cyber security experts reached a consensus on 5G cyber security challenges and how to address them. At the event, Huawei released its second white paper on 5G cyber security entitled *5G Scenarios and Security Design*, which was well received by attendees. Huawei also released a 2016 technological cooperation initiative for

cyber security, and established technology-focused partnerships with Deutsche Telekom, Telefónica, and China Mobile.

- At Huawei, we recognize the value of connecting directly with carriers' security teams, and are committed to in-depth collaboration. As of the end of 2016, we have established direct working relationships with the Computer Emergency Response Teams (CERTs) of 31 leading global carriers. We have put in place a robust collaboration apparatus for security emergency response to reduce security risks on our customers' live networks, an initiative that has received positive recognition from our customers.

Governments, customers, industry organizations, and other stakeholders have commended Huawei's cyber security efforts, which are expected to drive closer and more pragmatic cooperation. These efforts include the following:

- In September 2016, the Open Group announced that Huawei has been accredited under the Open Trusted Technology Provider™ Standard – Mitigating Maliciously Tainted and Counterfeit Products (O-TTPS) for our Wireless Business Unit's Frequency Division Duplex (FDD) product line. The certification covers the full lifecycle from product R&D to manufacturing, transportation, maintenance, and retirement, and has stringent requirements for supply chain management. Achieving this accreditation demonstrates the maturity of Huawei's cyber security management system and our security management capabilities. Huawei is the world's first and only vendor to be accredited for both hardware and software.
- In October 2016, Huawei and REDtone were presented with the Cybersecurity Project of the Year award by CyberSecurity Malaysia in recognition of our B2B public cloud services for government and businesses. The award was an endorsement of the security of Huawei cloud services.
- After awarding the Protocol of Security Development Assurance (PSDA) stamp to several of our products in 2015, Telefónica presented this certificate to Huawei again in 2016 in recognition of our USN, UGW, and eNodeB products and our product security capabilities.

- In October 2016, our distribution centers in the Netherlands and Panama received ISO 28000 certification. All six of our supply chain distribution centers around the world have now passed ISO 28000 certification. We have established an ISO 28000 security management system to ensure the cyber security management capabilities of our supply chain and continue to earn customer trust.

While actively communicating with external parties to develop transparency and trust, we are constantly building and improving upon our end-to-end cyber security assurance system. We use a built-in approach and an ABC model (Assume nothing, Believe nobody, Check everything) to provide comprehensive cyber security assurance in the areas of strategy, processes, laws and regulations, employees, R&D, verification, supply, and audits:

- On an annual basis, we develop a strategic plan for cyber security and privacy protection, which reviews the results we achieved over the previous year, seeking to identify gaps, adjust goals, and continuously improve our end-to-end approach to cyber security and privacy above and beyond Huawei's processes, strategies, and regions.
- We provide basic and business domain-specific cyber security awareness education, training, and competency & qualification (C&Q) assessments that target all employees on an ongoing basis. In 2016, 99.4% employees studied and signed the BCGs, and the job qualification certificate system was implemented in all key countries.
- Our mature code compilation, configuration management, tool management, and traceability platforms in the R&D domain have enabled us to steadily develop our security engineering capabilities. The test automation rate of product security cases has continued to improve, and vulnerability tracing and automatic virus scanning capabilities are industry-leading. Our assessment results based on the Building Security in Maturity

Model (BSIMM) are well above industry average in all aspects. We are an industry leader in key security technologies, including trusted computing, prevention of product tampering during runtime, and anonymity/anonymization technologies. These technologies have been used to bolster the security capabilities of our products.

- We are now a leader in security technology standards with a strong team of senior technical experts. In 2016, 154 of the security proposals that we submitted to 3GPP SA3 were approved, and 60 of our proposals were approved by ETSI NFV. We hold 17 chairperson/vice chairperson positions in security standards organizations.
- Our independent verification approaches, such as the model adopted at the UK-based Cyber Security Evaluation Centre, Huawei's Internal Cyber Security Lab model, and third-party security verification models, have been recognized by numerous governments and carrier customers. Our Internal Cyber Security Lab performs independent security evaluations on products before launch to ensure products are secure prior to reaching customers. In recent years, the density of security-related issues has dropped on a yearly basis, with the average density from 2014 to 2016 going down 66% year-on-year. The number of security issues identified during external testing has also been reduced significantly, with the average number from 2014 to 2016 going down by 43% year-on-year.
- We have continued to improve the compliance levels and delivery quality of our cyber security activities throughout the service delivery process. We have effectively reduced privacy risks by using mature processes and platforms to process customer data stored on spare parts. In addition, we have enhanced the security of our managed services and Global Network Operation Centers (GNOCs) and validated all tools currently in use to improve field delivery quality and ensure security in all delivery activities.

- We have controls in place within our supply system to ensure end-to-end security. We have improved suppliers' delivery quality and compliance with security agreements and have required them to promptly provide solutions and patches for vulnerabilities in third-party software. In doing so, we have put in place a comprehensive security mechanism for managing suppliers.
- We have established a mature system for tracing supply chain components and enhanced security management through version control, reverse logistics management, and traceability. For software incorporated into configuration management, the time required to automatically identify affected products and customers after a vulnerability's disclosure has been shortened from 10 days to less than one hour.
- We have continued to conduct independent third-party cyber security and privacy protection audits from different perspectives (i.e., processes, BGs, and countries) to ensure that all of our approaches and requirements are effectively implemented and managed, risks are promptly identified, and improvements are made.

Direction of future work

Looking ahead, we need to accept that what we have done in the past will not continue to be adequate in a fully digitized, cloud, mobile, DIY world. There are many things to consider. How can we optimize our development processes to enable rapid service launch while also

continuously improving security capabilities? As 5G and IoT create a potentially global attack surface, how do we secure a world we cannot see or touch? How can we adapt evolving quality standards to meet customer requirements? How should we change our O&M models? Concerns about cyber security will shift from cyberspace security to data security.

An intelligent world is rapidly approaching. In the areas like IoT, big data, and cloud computing, cyber security assurance must ensure the security of integrated solutions, not merely individual products. As an ICT leader, Huawei has extensive experience in the technology, deployment, and management of integrated network products that cover devices, data pipes, and the cloud. We will leverage our decades of experience in CT security technology to align security products with market demand at the strategic level, and further explore and develop approaches to ensure the end-to-end security and privacy of solutions and products.

We are aware that as we progress toward an intelligent world, the industry needs to continue fleshing out its technical solutions and management methodologies for cyber security and privacy protection, and continue to raise awareness. This will underpin the sustainable development of the ICT sector. We will continue to work with all stakeholders across the industry to continuously improve cyber security and privacy capabilities, so that security and privacy will be protected to the maximum extent possible while still enabling users to enjoy the many conveniences of new technology.

Openness, Collaboration, and Shared Success

Huawei believes in the power of dissolving boundaries to work more closely with the world. Together with our partners, we are working hard to build a symbiotic business ecosystem that thrives on shared success.

Building a Better Connected World

Huawei's vision of Building a Better Connected World is one that we share with all of humanity. Our world is in the process of evolving from a digital world to an intelligent one. Historically speaking, enterprises in traditional value chains establish core competency by owning and controlling vital resources. As industries converge and consumer demand evolves, however, in-house strengths are no longer enough to maintain a competitive edge. Effective use of external resources will become increasingly important, and in order to succeed, enterprises have to become more open and flexible, future-proofing their business based on strengths derived from the industry ecosystem.

In the cloud era, ICT has grown from a single industry to an indispensable tool that enables the digital transformation of all industries. Vertical integration across the value chain is no longer a viable option, and the time is ripe for the ICT industry to establish a new, more cohesive ecosystem. Huawei aims to help build and participate in just such an ecosystem: one that is open, robust, flexible, and prosperous – an ecosystem that will enable the success of all industries as they engage in digital transformation.

Ecosystem in Practice: Three Guiding Principles

Placing special emphasis on openness, collaboration, and shared success, Huawei is ready and willing to play our part in cultivating a productive industry ecosystem. We have three guiding principles:

The first is to make the pie bigger for everyone involved. Growing the industry and enlarging the market is far more important than increasing the size of our own share.

The second is that managing cooperation is more important than managing competition. Huawei will not compete for profit with our partners, and will maintain a long-term commitment to openness, collaboration, and shared success.

Our third principle relates to benefit sharing. Through well balanced benefit sharing, Huawei aims to consolidate the strength of as many people and companies as possible to fend off uncertainties in the intelligent world to come.

Huawei contributes to ecosystem development by focusing on practical action, forming industry organizations, and actively participating in them. We establish industry alliances to grow the industry together with our technology partners. We establish strategic business alliances to ensure the business success of customers around the globe. We proactively engage in open source communities to promote collaboration and innovation. And we actively invest in enablement platforms for developers. Through these initiatives we aim to involve more players in joint innovation, thereby bringing prosperity to the ecosystem, paving the way for customer success in digital transformation, and accelerating the monetization of new technology solutions.



Today, Costa Rica is home to over 500,000 species – 25 times more than Hawaii, a group of isolated islands to the west. Bordered on the north and south by land, and the east and west by two different bodies of water, Costa Rica's ecosystem is open and dynamic, one of the most biodiverse regions in the world. At HUAWEI CONNECT 2016, we announced our plans to help cultivate an industry ecosystem just like Costa Rica's: one that is open, prosperous, diverse, and built on symbiotic relationships.

Ecosystem in Practice: What Huawei is Doing

Industry alliances

Growing the industry together

- Co-founded the 5G Vertical Industry Accelerator (5GVIA) in Munich, Germany – a large-scale testbed for testing and verifying 5G application scenarios for different verticals.
- Initiated the Edge Computing Consortium (ECC) – a platform to drive the convergence of OT and ICT in the edge computing industry.
- Proposed the NB-IoT standard for low power wide area connections, and drove the formation of the NB-IoT Industry Forum with GSMA (now with 50+ members).
- Member of the Industrial Internet Consortium (IIC) in America and the Alliance of Industrial Internet (All) in China.
- Key member of the eLTE Industry Alliance and the SDN/NFV Industry Alliance.

Strategic partnerships

Enabling customer success

- Supported Deutsche Telekom's launch of Open Telekom Cloud.
- Partnered with SAP to establish a joint innovation center and develop Industry 4.0 solutions.
- Partnered with Intel on solutions to improve network performance, including chip development and SDN.
- Founded the Max Berek Innovation Lab with Leica to support joint R&D.

Open source communities

Promoting open and integrated innovation

- Elected as OpenStack Gold Member Board Director in 2016, now a Platinum member in 2017; chosen as project team lead (PTL) for six OpenStack projects, and a core member of 21.
- Donated CarbonData format to Apache Software Foundation – an original file format designed to speed up big data queries (unanimously approved for further incubation).
- Key contributor to open source ICT communities like ONOS, OPEN-O, OPNFV, CNCF, OCI, and Docker.

Developer support

Enriching the ecosystem

- In 2015, announced a five-year Developer Enablement Plan with a one-billion-dollar budget – registered developers grew from 2,000 to 25,000+ in one year, with 230+ new solutions and 800+ new applications.
- Actively cultivating consumer cloud service ecosystem – in China, 220,000+ developers have registered for Huawei's consumer cloud, sharing CNY2.8 billion in revenue.

Dissolving Boundaries and Exchanging Ideas

Building an open ecosystem requires regular exchange of ideas with the outside world. In order to achieve this, we are actively dissolving our organizational and intellectual boundaries.

Huawei builds Centers of Expertise (COEs) in areas of concentrated resources to support the development of a more open and innovative R&D system. Through these centers, we proactively engage with external experts, scientists, international organizations, and industry associations. Our approach to open innovation is to build capacity by establishing a presence in talent hotspots. For example, we develop core competencies in places like Europe, where local innovation, design, basic research, marketing, core manufacturing, and financial resources can be effectively integrated into Huawei's global value chain.

In March of 2010, we launched the Huawei Innovation Research Program (HIRP), which funds innovative research in universities and research institutions, with whom we tackle major issues at the forefront of information and communications technology. As of late 2016, two Nobel Prize laureates, more than 100 fellows from the Institute of Electrical and Electronics Engineers (IEEE) and the Association of Computing Machinery (ACM), and thousands of expert scholars from around the world have taken part in HIRP. The program has involved over 300 universities in more than 20 countries, and has sponsored over 1,200 innovation research projects.

In the digital and intelligent world, Huawei aims to serve as the "soil and fertilizer" of the ICT ecosystem. In this role, we are committed to supporting an open, diverse, and symbiotic environment that will push the industry forward and promote ongoing social progress.

Results of Operations

Financial Performance

(CNY Million)	2016	2015	YoY
Revenue	521,574	395,009	32.0%
Gross profit	210,129	164,697	27.6%
– Gross profit margin	40.3%	41.7%	(1.4%)
Total operating expenses	(162,614)	(118,911)	36.8%
– as % of revenue	31.2%	30.1%	1.1%
Operating profit	47,515	45,786	3.8%
– as % of revenue	9.1%	11.6%	(2.5%)
Net finance expenses	(3,737)	(3,715)	0.6%
Income tax expenses	(7,006)	(5,077)	38.0%
Net profit	37,052	36,910	0.4%

Revenue in 2016 totaled CNY521,574 million, representing an increase of 32.0% year-on-year. Net profit grew by 0.4% year-on-year to CNY37,052 million. There are several reasons behind this.

- As the consumer business grew rapidly and contributed a larger share to total revenue, the company's gross profit margin dropped by 1.4 percentage points from 2015.
- As the company increased investment in building its consumer brand and consumer sales channels, total operating expenses as a percentage of revenue rose by 1.1 percentage points relative to 2015.

1. Total Operating Expenses

(CNY Million)	2016	2015	YoY
Research and development expenses	76,391	59,607	28.2%
– as % of revenue	14.6%	15.1%	(0.5%)
Selling and administrative expenses	86,442	62,281	38.8%
– as % of revenue	16.6%	15.8%	0.8%
Other (income)/expenses, net	(219)	(2,977)	(92.6%)
– as % of revenue	(0.04%)	(0.8%)	0.8%
Total operating expenses	162,614	118,911	36.8%
– as % of revenue	31.2%	30.1%	1.1%

In 2016, Huawei continued to increase its investment in research and innovation for the future. However, as a result of rapid growth in revenue and increased efficiency, R&D expenses as a percentage of revenue dropped by 0.5 percentage points.

The company increased investment in building its consumer brand and consumer sales channels for future growth, causing the rise in selling and administrative expenses as a percentage of revenue by 0.8 percentage points, and total operating expenses by 1.1 percentage points.

2. Net Finance Expenses

(CNY Million)	2016	2015	YoY
Net foreign exchange loss	5,223	4,362	19.7%
Other net finance gains	(1,486)	(647)	129.7%
Total net finance expenses	3,737	3,715	0.6%

Net finance expenses in 2016 amounted to CNY3,737 million, an increase of CNY22 million over 2015. This is attributable to a year-on-year increase of CNY861 million in exchange losses due to depreciation of currencies in emerging markets.

Financial Position

(CNY Million)	December 31, 2016	December 31, 2015	YoY
Non-current assets	88,132	70,509	25.0%
Current assets	355,502	301,646	17.9%
Total assets	443,634	372,155	19.2%
Among which: Cash and short-term investments	145,653	125,208	16.3%
Trade receivables	108,863	92,425	17.8%
Inventories	73,976	61,363	20.6%
Non-current liabilities	64,230	40,459	58.8%
Among which: Long-term borrowings	40,867	26,501	54.2%
Current liabilities	239,271	212,627	12.5%
Among which: Short-term borrowings	3,932	2,485	58.2%
Trade payables	71,096	61,017	16.5%
Owner's equity	140,133	119,069	17.7%
Total liabilities and owner's equity	443,634	372,155	19.2%

As of December 31, 2016, the balance of cash and short-term investments reached CNY145,653 million, up 16.3% year-on-year.

In 2016, Huawei's DSO was 75 days, 9 days shorter than the 84 days in 2015. Its ITO decreased by 10 days to 86 days compared with the 96 days in 2015. The company's DPO was 82 days, 13 days shorter than the 95 days in 2015.

As of December 31, 2016, total short-term and long-term borrowings amounted to CNY44,799 million, an increase of 54.6% year-on-year from CNY28,986 million in 2015.

Cash Flow from Operating Activities

(CNY Million)	2016	2015	YoY
Net profit	37,052	36,910	0.4%
Adjustment for depreciation, amortization, net foreign exchange losses and non-operating expenses, net	14,655	10,387	41.1%
Actuarial losses on defined benefit obligations	(829)	(306)	170.9%
Cash flow before change in operating assets and liabilities	50,878	46,991	8.3%
Change in operating assets and liabilities	(1,660)	5,309	(131.3%)
Cash flow from operating activities	49,218	52,300	(5.9%)

Cash flow from operating activities in 2016 decreased by 5.9% year-on-year to CNY49,218 million. This decrease was attributable to the following factors:

- Net profit grew by 0.4% year-on-year, remaining virtually even with 2015.
- Adjustments for depreciation, amortization, and non-operating losses (net) contributed an additional CNY4,268 million to cash flow from operating activities compared with 2015.
- In 2016, operating cash flow tied up in operating assets and liabilities amounted to CNY1,660 million, primarily owing to rapid growth in revenue.

Financial Risk Management

In 2016, Huawei amended and improved its financial risk management policies and processes to further enhance the Group's ability to withstand financial risks and better support its business development.

Liquidity Risk

Huawei has continuously refined its cash flow planning, budgeting, and forecasting system to better assess its short-term and mid-to long-term liquidity needs. The Group has implemented various prudent financial measures to meet its overall liquidity needs, including centralizing cash management, maintaining an adequate level of funds and proper structure of cash assets, and gaining access to adequate and committed credit facilities. As of December 31, 2016, cash and short-term investments increased by 16.3% year-on-year to CNY145,653 million. An adequate capital reserve and a stable cash flow from operating activities enabled Huawei to mitigate its liquidity and debt repayment risks.

(CNY Million)	2016	2015	YoY
Cash flow from operating activities	49,218	52,300	(5.9%)
Cash and short-term investments	145,653	125,208	16.3%
Short-term and long-term borrowings	44,799	28,986	54.6%

Foreign Exchange Risk

The Group's presentation currency is CNY. Huawei has foreign currency exposure related to buying, selling, and financing in currencies other than CNY, mainly USD and EUR. According to the Group's foreign exchange risk management policy, material foreign exchange exposures are hedged unless hedging is uneconomical due to market liquidity and/or hedging costs. The Group has developed a complete set of foreign exchange management policies, processes, and instructions. These include:

- Natural hedging: The Group structures its operations to match receivables and payables in a foreign currency, to the greatest extent possible.
- Financial hedging: For certain currencies where natural hedging does not fully offset the foreign currency position, the Group hedges using a combination of short- and long-term foreign currency loans.

In countries where local currencies depreciate sharply or in those with strict foreign exchange controls, the Group manages foreign exchange exposures via different measures, including pricing in USD, accelerating payment collection, and promptly transferring payments out of these countries.

With other conditions remaining unchanged, exchange rate fluctuations will impact the Group's net profit as follows:

(CNY Million)	2016	2015
USD depreciates by 5%	(843)	(1,269)
EUR depreciates by 5%	(56)	(319)

Interest Rate Risk

Interest rate risks arise from Huawei's long-term borrowings and long-term receivables. By analyzing its interest rate exposures, the Group uses a combination of fixed-rate and floating-rate bank loans to mitigate interest rate risks.

1. Major interest-bearing long-term financial instruments held by the Group as of December 31, 2016

	2016		2015	
	Effective Interest Rate (%)	CNY Million	Effective Interest Rate (%)	CNY Million
Fixed-rate long-term financial instruments				
Long-term borrowings	4.28	20,774	4.14	8,070
Trade and other receivables	6.87	(3,597)	6.06	(2,060)
Floating-rate long-term financial instruments				
Long-term borrowings	2.60	20,092	2.55	18,431
Trade and other receivables	0.51	(2,624)	0.40	(2,839)
Total		34,645		21,602

2. Sensitivity analysis

Assuming that the interest rate increased by 50 basis points on December 31, 2016 and other variables remained unchanged, the Group's net profit and owner's equity would decrease by CNY72 million (in 2015, the amount was CNY64 million).

Credit Risk

The company has established and implemented globally consistent credit management policies, processes, IT systems, and quantitative credit risk assessment tools. It has established dedicated credit management organizations across all regions and business units, and established centers of expertise specializing in credit management in Europe and the Asia Pacific. The company uses quantitative risk assessment models to determine customer credit ratings and credit limits. It has also set risk control points across key processes throughout the end-to-end sales cycle to manage credit risks in a closed loop. Huawei's Credit Management Department regularly assesses global credit risk exposures and develops IT tools to help field offices monitor risk status, estimate potential losses, and determine bad debt provisions as appropriate. To minimize risks, a special process is followed if a customer misses a payment or poses an unacceptably high credit risk.

Sales Financing

With its global coverage, Huawei's sales financing team maintains close contact with customers to understand their financing needs and tap into various financing resources around the world. As a bridge for communication and cooperation between financial institutions and customers, the sales financing team provides customers with professional financing solutions that contribute to ongoing customer success. To transfer risks, Huawei arranges for third-party financial institutions to provide sales financing, such as export credit facilities, leasing, and factoring. These institutions bear the associated risks and profit from these operations. Huawei has established systematic financing policies and project approval processes to strictly control financing risk exposures. Huawei only shares risks with financial institutions on certain projects, and makes provisions for risk contingencies to control business risks.

Independent Auditors' Report



Independent auditors' report on the consolidated financial statements summary to the Board of Directors of Huawei Investment & Holding Co., Ltd.

Opinion

The consolidated financial statements summary of the Huawei Investment & Holding Co., Ltd. and its subsidiaries (the Group) set out on page 56 to 95, which comprise the summary consolidated statement of financial position as at December 31, 2016, the summary consolidated statements of total comprehensive income and cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information, are derived from the audited consolidated financial statements of the Group for the year ended December 31, 2016.

In our opinion, the accompanying consolidated financial statements summary is consistent, in all material respects, with the audited consolidated financial statements, in accordance with the basis described in note 2.

Consolidated financial statements summary

The consolidated financial statements summary does not contain all the disclosures required by International Financial Reporting Standards applied in the preparation of the audited consolidated financial statements of the Group. Reading the consolidated financial statements summary is not a substitute for reading the audited consolidated financial statements of the Group.

The audited consolidated financial statements and our report thereon

We expressed an unmodified audit opinion on the audited consolidated financial statements in our report dated March 30, 2017.

Management's responsibilities for the consolidated financial statements summary

Management is responsible for the preparation of the consolidated financial statements summary in accordance with the basis described in note 2.

Auditors' responsibilities

Our responsibility is to express an opinion on whether the consolidated financial statements summary is consistent, in all material respects, with the audited consolidated financial statements based on our procedures, which were conducted in accordance with International Standard on Auditing 810 (Revised), *Engagements to Report on Summary Financial Statements*.

KPMG Huazhen LLP
Certified Public Accountants
9th Floor, China Resources Building
5001 Shennan East Road
Shenzhen 518001, China
March 30, 2017

Consolidated Financial Statements Summary and Notes

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Consolidated Financial Statements Summary

Consolidated Statement of Total Comprehensive Income

(CNY million)	Note	2016	2015
Revenue	8	521,574	395,009
Cost of sales		(311,445)	(230,312)
Gross Profit		210,129	164,697
Research and development expenses		(76,391)	(59,607)
Selling and administrative expenses		(86,442)	(62,281)
Other income, net	9	219	2,977
Operating profit before financing costs		47,515	45,786
Finance income and expenses	11	(3,737)	(3,715)
Share of associates' and joint ventures' results (post tax)		280	(84)
Profit before taxation		44,058	41,987
Income tax	12	(7,006)	(5,077)
Profit after tax		37,052	36,910
Other comprehensive income	13		
Not reclassifiable to profit or loss:			
Remeasurement of defined benefit obligations		(829)	(306)
Reclassifiable to profit or loss:			
Net change in the fair value of available-for-sale investments		(1,102)	1,152
Translation differences on foreign operations		3,671	1,044
		2,569	2,196
Total other comprehensive income		1,740	1,890
Total comprehensive income		38,792	38,800
Profit after tax attributable to:			
Equity holders of the Company		37,066	36,908
Non-controlling interests		(14)	2
Total comprehensive income attributable to:			
Equity holders of the Company		38,798	38,797
Non-controlling interests		(6)	3

Items of other comprehensive income are stated after tax and reclassification adjustments (see note 13).

The notes on pages 60 to 95 form an integral part of this consolidated financial statements summary.

Consolidated Statement of Financial Position

(CNY million)	Note	December 31, 2016	December 31, 2015
Assets			
Goodwill and intangible assets	14	4,795	2,725
Property, plant and equipment	15	49,307	35,438
Long-term leasehold prepayments	16	4,112	3,306
Interests in associates and joint ventures	17	484	528
Other investments, including derivatives	18	3,003	3,961
Deferred tax assets	19	16,933	16,900
Trade receivables	21	3,776	2,098
Other assets	22	5,722	5,553
Non-current assets		88,132	70,509
Inventories	20	73,976	61,363
Trade and bills receivable	21	107,957	93,260
Other assets	22	27,916	21,815
Other investments, including derivatives	18	22,606	14,647
Cash and cash equivalents	23	123,047	110,561
Current assets		355,502	301,646
Total assets		443,634	372,155
Equity			
Equity attributable to equity holders of the Company		140,094	119,021
Non-controlling interests		39	48
Total equity		140,133	119,069
Liabilities			
Loans and borrowings	24	40,867	26,501
Long-term employee benefits		19,652	11,533
Deferred government grants		1,534	1,965
Deferred tax liabilities	19	1,104	460
Other liabilities	26	1,073	–
Non-current liabilities		64,230	40,459
Loans and borrowings	24	3,932	2,485
Income tax payable		4,100	4,213
Trade and bills payable	25	71,134	61,017
Other liabilities	26	145,448	133,779
Provisions	27	14,657	11,133
Current liabilities		239,271	212,627
Total liabilities		303,501	253,086
Total equity and liabilities		443,634	372,155

The notes on pages 60 to 95 form an integral part of this consolidated financial statements summary.

Consolidated Statement of Cash Flows

(CNY million)	Note	2016	2015
Cash flows from operating activities			
Cash receipts from goods and services		555,918	424,413
Cash paid to suppliers and employees		(547,331)	(408,497)
Other operating cash flows		40,631	36,384
Net cash generated from operating activities		49,218	52,300
Net cash used in investing activities		(28,524)	(741)
Net cash used in financing activities		(10,851)	(19,763)
Cash and cash equivalents			
Net increase		9,843	31,796
At January 1	23	110,561	78,048
Effect of foreign exchange rate changes		2,643	717
At December 31	23	123,047	110,561

The notes on pages 60 to 95 form an integral part of this consolidated financial statements summary.

Notes to the Consolidated Financial Statements Summary

1 Reporting entity

Huawei Investment & Holding Co., Ltd. (the Company) is a limited liability company established in Shenzhen in the People's Republic of China (the PRC). The Company's registered office is at Huawei Industrial Base, Bantian Longgang, Shenzhen, PRC.

The Company and its subsidiaries (the Group) principally provide end to end Information Communication and Technology solutions. This includes the research, design, manufacture and marketing of telecom network equipment, IT products and solutions and smart devices for telecom carriers, enterprises and consumers. The principal activities and other particulars of the Company's major subsidiaries are set out in note 32(b) to the consolidated financial statements summary.

2 Preparation basis of the consolidated financial statements summary

The Group has prepared a full set of consolidated financial statements (consolidated financial statements) for the year ended December 31, 2016 in accordance with International Financial Reporting Standards (IFRSs).

The consolidated financial statements summary has been prepared and presented based on the audited consolidated financial statements for the year ended December 31, 2016 in order to disclose material financial and operational information of the Group.

3 Significant accounting policies

(a) Basis of preparation of the consolidated financial statements

The consolidated financial statements have been prepared under the historical cost basis modified for the fair valuation of financial instruments classified as available-for-sale and held-for-trading (see note 3(e)).

The preparation of consolidated financial statements in accordance with IFRSs requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets, liabilities, income and expenses. Estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed regularly and revised when required. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Judgements made by management in the application of IFRSs that have significant effect on the consolidated financial statements and major sources of estimation uncertainty are discussed in note 5.

(b) Functional and presentation currency

All financial information in the consolidated financial statements summary is presented in millions of Renminbi (CNY), which is the Company's functional currency.

(c) Consolidation

The financial statements consolidate the results, assets, liabilities and cash flows of all subsidiaries which the Group controls.

Subsidiaries are consolidated from the date that control commences until the date that control passes. Intra-group balances, transactions and cash flows and any unrealised profits arising from intra-group transactions are eliminated in full.

The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights are considered.

The Group uses the acquisition method to account for business acquisition. The difference between the fair value of the consideration paid and the fair value of assets, liabilities and contingent liabilities acquired is recorded as goodwill. Transaction costs incurred in an acquisition are included in operating costs.

Non-controlling interests represent the carrying value of the net assets of subsidiaries attributable to non-controlling shareholders.

When the Group loses control of a subsidiary, it is accounted for as a disposal of the entire interest in that subsidiary, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former subsidiary at the date when control is lost is recognised at fair value or, when appropriate, the cost on initial recognition of an investment in an associate or a joint venture (see note 3(d)).

(d) Associates and joint ventures

An associate is an entity in which the Group has significant influence, but not control or joint control, over its management, including participation in the financial and operating policy decisions.

A joint venture is an arrangement whereby the Group and other parties contractually agree to share control of the arrangement, and have rights to the net assets of the arrangement.

An investment in an associate or a joint venture is accounted for in the consolidated financial statements using the equity method.

Unrealised profits and losses resulting from transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the investee, except where unrealised losses provide evidence of an impairment of the asset transferred, in which case they are recognised immediately in profit or loss.

(e) Financial instruments

(i) Recognition and derecognition

Financial instruments, comprising financial assets and financial liabilities are recognised in the consolidated statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or where it neither transfers nor retains substantially all of the risks and rewards of ownership and loses control. When control is retained, the Group continues to recognise the financial asset to the extent of its continuing involvement.

The Group derecognises a financial liability when its contractual obligations are discharged, cancelled, or expire.

Financial assets and financial liabilities are offset and the net amount presented in the consolidated statement of financial position when, and only when, the Group currently has a legally enforceable right to set off the recognised amounts and intends either to settle them on a net basis or to realise the asset and settle the liability simultaneously.

(ii) Classification and measurement

All financial assets and liabilities are initially recognised at fair value, which is usually the transaction price including, where appropriate, transaction costs. Subsequently, measurement depends on their classification as follows:

- Financial assets at fair value through profit or loss
Financial assets are classified as at fair value through profit or loss if they are classified as held-for-trading or are designated as such on initial recognition, and remeasured to fair value at each reporting period. Gains and losses arising from remeasurement are taken to profit or loss, as are transaction costs.
- Loans and receivables
Loans and receivables including trade receivables are measured at amortised cost using the effective interest method including a reduction for any impairment losses (see note 3(k)). Interest income is included in finance income.
- Available-for-sale financial assets
Available-for-sale financial assets are non-derivative financial assets that are not classified in any of the above categories of financial assets and are recognised initially at fair value plus any directly attributable transaction costs. At the end of each reporting period the fair value is remeasured, with any resultant gain or loss being recognised in other comprehensive income and accumulated separately in equity in the available-for-sale reserve except for the foreign exchange gain or loss which is recognised in finance income or expenses. When these assets are derecognised or impaired (see note 3(k)), the cumulative gain or loss is reclassified from equity to profit or loss.

Available-for-sale financial assets that do not have a quoted price in an active market and whose fair value cannot be reliably measured are measured at cost less any impairment losses (see note 3(k)) at the end of each reporting period.

Interest income on available-for-sale financial assets is recognised in finance income using the effective interest method. Dividends on available-for-sale equity securities are recognised in finance income when the right to receive dividends has been established.

- Financial liabilities
Financial liabilities are stated at amortised cost using the effective interest method. Interest is included in finance expenses unless capitalised into property, plant and equipment (see note 3(g)).

(f) Investment property

Investment properties are land and buildings which are owned or held under a leasehold interest (see note 3(j)) to earn rental income and/or for capital appreciation.

Investment properties are stated at cost less accumulated depreciation (see note 3(g)(ii)) and impairment losses (see note 3(k)). Rental income from investment properties is accounted for as described in note 3(q)(ii).

(g) Other property, plant and equipment

(i) Cost

Items of property, plant and equipment are stated at cost less accumulated depreciation and impairment losses (see note 3(k)). Cost includes expenditure that is directly attributable to the acquisition of the assets including for self-constructed assets, the cost of materials, direct labour, the initial estimate, where relevant, of the costs of dismantling and removing the items and restoring the site on which they are located, and an appropriate proportion of production overheads and borrowing costs.

Borrowing costs that are directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of that asset. Other borrowing costs are expensed in the period in which they are incurred.

Construction in progress is transferred to other property, plant and equipment when it is ready for its intended use.

Gains or losses arising from the retirement or disposal of an item of property, plant and equipment are determined as the difference between the net disposal proceeds and the carrying amount of the item and are recognised in profit or loss on the date of retirement or disposal.

(ii) Depreciation

Depreciation is calculated to write off the cost of items of property, plant and equipment, less their estimated residual value, if any, using the straight line method over their estimated useful lives as follows:

- Buildings 30 years
- Machinery, electronic equipment and other equipment 2 to 10 years
- Motor vehicles 5 years
- Decoration and leasehold improvements 2 to 5 years

Where components of an item of property, plant and equipment have different useful lives, the cost or valuation of the item is allocated on a reasonable basis between the parts and each part is depreciated separately. Both the useful life of an item of property, plant and equipment and its residual value, if any, are reviewed annually.

Freehold land and construction in progress are not depreciated.

(h) Long-term leasehold prepayments

Long-term leasehold prepayments represent land premium paid, resettlement fees and related expenses incurred in obtaining the relevant land use rights, less accumulated amortisation and impairment losses (see note 3(k)).

Amortisation is charged to profit or loss on a straight-line basis over the period of the rights generally no more than 50 years.

(i) Goodwill and intangible assets

(i) Goodwill

Goodwill represents the excess of the fair value of consideration paid to acquire a subsidiary over the acquisition date fair value of the acquiree's identifiable assets acquired less liabilities, including contingent liabilities, assumed as at the acquisition date, less impairment losses (see note 3(k)).

Where the fair value of the assets acquired less liabilities assumed exceeds the consideration paid, the excess is recognised immediately in profit or loss as a gain.

Goodwill is not amortised but subject to impairment testing (see note 3(k)) annually.

(ii) Other intangible assets

Other intangible assets that are acquired by the Group are stated at cost less accumulated amortisation and impairment losses (see note 3(k)).

(iii) Amortisation

Amortisation of other intangible assets with finite useful lives is charged to profit or loss on a straight-line basis over the assets' estimated useful lives. The following intangible assets with finite useful lives are amortised from the date they are available for use and their estimated useful lives are as follows:

- Software 3 years
- Royalties 2 to 15 years
- Patents 3 to 22 years
- Trademark and others 2 to 20 years

Both the period and method of amortisation are reviewed annually and revised when necessary.

(iv) Research and development

Research and development costs comprise all costs that are directly attributable to research and development activities or that can be allocated on a reasonable basis to such activities. The nature of the Group's research and development activities is

such that the criteria for the recognition of such costs as assets are generally not met until late in the development stage of the project when the remaining development costs are immaterial. Therefore most expenditure on research and development activities is recognised as an expense in the period in which it is incurred.

(j) Leased assets

Most of the Group's leases are operating leases which do not transfer substantially all the risks and rewards of ownership to the Group.

Payments made under the leases are charged to profit or loss in equal instalments over the accounting periods covered the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the leased asset. Lease incentives received are recognised in profit or loss as an integral part of the aggregate net lease payments made. Contingent rentals are charged to profit or loss in the accounting period in which they are incurred.

(k) Impairment of assets

(i) Impairment of financial assets

Loans and receivables, available-for-sale securities and cash and cash equivalents are reviewed at the end of each reporting period to determine whether there is objective evidence of impairment. Objective evidence of impairment includes observable data that comes to the attention of the Group about one or more of the following loss events:

- significant financial difficulty of the debtor or issuer;
- a breach of contract, such as a default or delinquency in contractual payments;
- it becoming probable that the debtor or issuer will enter bankruptcy or other financial reorganisation;
- significant changes in the technological, market, economic or legal environment that have an adverse effect on the debtor or issuer;

- a general decline in the ability of a group of financial assets to make payments when due; and
- a significant or prolonged decline in the fair value of an investment in an equity instrument below its cost.

Assets are tested for impairment individually and collectively. Where there is objective evidence that a financial asset or a group of financial assets is impaired, the Group recognises an impairment loss using an allowance account representing the difference between the carrying amount and the present value of estimated future cash flows, discounted at the financial asset's original effective interest rate. When assets are assessed collectively, they are grouped on the basis of similar credit characteristics.

Impairment losses are subsequently reversed if in a subsequent period the amount of an impairment loss decreases and the decrease can be linked objectively to an event occurring after the impairment loss was recognised.

Where an available-for-sale debt security is deemed to be impaired, cumulative fair value losses recognised in the available-for-sale reserve are reclassified to profit or loss. Losses are reversed if a subsequent increase in fair value can be objectively related to an event occurring after the impairment loss was recognised.

Available-for-sale equity securities are impaired where there has been a significant or prolonged decline in their fair value below cost and then the cumulative loss is reclassified to profit or loss. Impairment losses are not reversed.

(ii) Impairment of other assets

Internal and external sources of information are reviewed at the end of each reporting period to identify indications that non-financial assets, including property, plant and equipment, long-term leasehold prepayments, intangible assets and other long-term assets may be impaired.

Goodwill is tested for impairment at least annually. For the purposes of impairment testing, goodwill is allocated to each cash generating unit, or groups of cash generating units, that is expected to benefit from the synergies of the acquisition. Where impairment testing is of a cash generating unit (or group of units), an impairment loss is recognised in profit or loss where the recoverable value is less than the carrying value of the unit (or group of units) and the impairment loss recognised is allocated first to reduce the carrying amount of any goodwill allocated to the unit (or group of units).

Other assets are impaired and an impairment loss is recognised in profit or loss where the recoverable value of the asset is less than its carrying amount, and reversed where there has been a favourable change in the recoverable amount. Impairment of goodwill is not reversed.

The recoverable amount of an asset or group of assets is the greater of its fair value less costs of disposal and value in use. Value in use is the total estimated future cash flows from the asset or, where the asset does not generate independent cash flows independent of other assets, a group of assets, discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

(l) Inventories

Inventories are carried at the lower of cost and net realisable value.

Cost is based on the standard cost method with periodic adjustments of cost variance to arrive at the actual cost, which approximates to weighted average cost. Cost includes expenditures incurred in acquiring the inventories and bringing them to their present location and condition. The cost of manufactured inventories and work in progress includes an appropriate share of overheads based on normal operating capacity.

The Group estimates losses for obsolescence and adjustment to net realisable value of the inventories periodically. Net realisable value is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale.

When inventories are sold, the carrying amount of those inventories is recognised as an expense in the period in which the related revenue is recognised. Any write-down of inventories to net realisable value and all losses of inventories are recognised as an expense in the period the write-down or loss occurs.

(m) Cash and cash equivalents

For the purposes of the cash flow statement, cash and cash equivalents comprise cash at bank and on hand, demand deposits with banks and other financial institutions, demand deposits with third party merchants, and short-term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Bank overdrafts that are repayable on demand and form an integral part of the Group's cash management are also included as a component of cash and cash equivalents for the purpose of the consolidated statement of cash flows.

(n) Employee benefits

(i) Short-term employee benefits, contributions to defined contribution retirement plans and other long-term employee benefits

Salaries, profit-sharing and bonus payments, paid annual leave and contributions to defined contribution retirement plans and the cost of non-monetary benefits are accrued in the year in which the associated services are rendered by employees. Where payment or settlement is deferred and the effect would be material, these amounts are stated at their present values.

(ii) Defined benefit obligations

The Group's obligation in respect of defined benefit plans is calculated separately for each plan by estimating the total amount of future benefit that employees have earned in return for their service in the current and prior periods which is then discounted to present value. The calculation is performed by management using the projected unit credit method.

Service cost and interest cost on the defined benefit obligations and any curtailment gains and losses are recognised in profit or loss.

Remeasurements arising from changes in assumptions regarding the amounts of future benefits are recognised immediately in other comprehensive income and shall not be reclassified to profit or loss in a subsequent period.

(o) Income tax

Income tax for the year comprises current tax and movements in deferred tax assets and liabilities. Current tax and movements in deferred tax assets and liabilities are recognised in profit or loss except to the extent that they relate to items recognised in other comprehensive income or directly in equity, in which case the relevant amounts of tax are recognised in other comprehensive income or directly in equity, respectively.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences, representing the difference between the carrying amounts of assets and liabilities for financial reporting purposes and their tax bases. Deferred tax assets also arise from unused tax losses and unused tax credits.

Deferred tax assets are recognised to the extent that it is probable that future

taxable profits will be available against which the asset can be utilised. Future taxable profits that may support the recognition of deferred tax assets arising from deductible temporary differences include those that will arise from the reversal of existing taxable temporary differences, provided those differences relate to the same taxation authority and the same taxable entity, and are expected to reverse either in the same period as the expected reversal of the deductible temporary difference or in periods into which a tax loss arising from the deferred tax asset can be carried back or forward. The same criteria are adopted when determining whether existing taxable temporary differences support the recognition of deferred tax assets arising from unused tax losses and credits, that is, those differences are taken into account if they relate to the same taxation authority and the same taxable entity, and are expected to reverse in a period, or periods, in which the tax loss or credit can be utilised.

No deferred tax is recognised on:

- the initial recognition of goodwill;
- the initial recognition of assets or liabilities that affect neither accounting nor taxable profit (provided they are not part of a business combination); and
- temporary differences relating to investments in subsidiaries to the extent that, in the case of taxable differences, the Group controls the timing of the reversal and it is probable that the differences will not reverse in the foreseeable future, or in the case of deductible differences, unless it is probable that they will reverse in the future.

The amount of deferred tax recognised is measured based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period. Deferred tax assets and liabilities are not discounted.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and is reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow the related tax benefit to be utilised. Any such reduction is reversed to the extent that it becomes probable that sufficient taxable profits will be available.

Current tax balances and deferred tax balances, and movements therein, are presented separately from each other and are not offset. Current tax assets are offset against current tax liabilities, and deferred tax assets against deferred tax liabilities, if the Group has legally enforceable rights to set off current tax assets against current tax liabilities and the following additional conditions are met:

- in the case of current tax assets and liabilities, the Group intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously; or
- in the case of deferred tax assets and liabilities, if they relate to income taxes levied by the same taxation authority on either:
 - the same taxable entity; or
 - different taxable entities, which, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered, intend to realise the current tax assets and settle the current tax liabilities on a net basis or realise and settle simultaneously.

(p) Provisions and contingent liabilities

Provisions are recognised for liabilities of uncertain timing or amount when the Group has a legal or constructive obligation arising as a result of a past event, it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can

be made. Where the time value of money is material, provisions are stated at the present value of the expenditure expected to settle the obligation.

Where it is not probable that an outflow of economic benefits will be required, or the amount cannot be reliably estimated, disclosure is made of the contingent liability, unless the probability of outflow of economic benefits is remote. Possible obligations, whose existence will only be confirmed by the occurrence or non-occurrence of one or more future events are also disclosed as contingent liabilities unless the probability of outflow of economic benefits is remote.

The main types of provisions are as follows:

(i) Provision for warranties

The Group provides warranty on its products for a period typically covering 12 to 24 months. The Group estimates the costs that may be incurred under its warranty obligations and records a liability in the amount of such costs when revenue is recognised. Warranty costs generally include spare parts, labour costs and service centre support. Factors that affect the Group's warranty liability include the number of installed units, historical and anticipated rates of warranty claims. The Group periodically reassesses its warranty liabilities and adjusts the amounts as necessary.

(ii) Provision for onerous contracts

A provision for onerous contracts is recognised when the expected benefits to be derived by the Group from a contract are lower than the unavoidable cost of meeting its obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Group recognises any impairment loss on the assets associated with that contract.

(iii) Provision for product sales

The Group may provide rebates to customers and other sales based incentives based on contractual agreements or specific incentive programmes. The provisions for such incentives are estimated, and regularly reviewed, based on various factors including, but not limited to, contractual terms, customary business practices, expected take up rates, experience of similar contracts, and historical experience.

The Group also provides sales incentives in the form of discounts when eligible purchases exceed a defined value or volume and may be either for a fixed or variable amount depending on the nature of the contractual agreement. These provisions are estimated, and regularly reviewed, based on several factors, including but not limited to, expected purchase volumes, contractual terms, customary business practices and historical experience.

(q) Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable. Where it is probable that the economic benefits will flow to the Group and the revenue and costs, if applicable, can be measured reliably, revenue is recognised in profit or loss as follows:

(i) Sale of goods and provision of services

Revenue from sale of goods is recognised when the significant risks and rewards of ownership of goods have been transferred to the buyer. Revenue from the provision of services is recognised at the time when the services are provided. No revenue is recognised if there are significant uncertainties regarding the recovery of the consideration due, associated costs or the return of goods. Revenue excludes value added tax or other sales taxes and is after deduction of any trade discounts, sales rebates and incentives.

(ii) Rental income from operating leases

Rental income receivable under operating leases is recognised in profit or loss in equal instalments over the periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the use of the leased asset. Lease incentives granted are recognised in profit or loss as an integral part of the aggregate net lease payments receivable. Contingent rentals are recognised as income in the accounting period in which they are earned.

(r) Government grants

Government grants are recognised only when there is reasonable assurance that they will be received and that the Group will comply with the conditions attaching to them. Grants that compensate the Group for expenses incurred are recognised as other income in profit or loss on a systematic basis in the same periods in which the expenses are incurred. Grants that compensate the Group for the cost of an asset are recognised as deferred income and consequently are effectively recognised in profit or loss on a systematic basis over the useful life of the asset.

(s) Translation of foreign currencies

(i) Foreign currency transactions

Foreign currency transactions during the year are translated to the respective functional currencies of group entities at the foreign exchange rates ruling at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated to the functional currency at the foreign exchange rates ruling at the end of the reporting period. Exchange gains and losses are recognised in profit or loss.

Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the foreign exchange rates ruling at the transaction dates. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are translated using the foreign exchange rates ruling at the dates the fair value was measured.

(ii) Foreign operations

The results of foreign operations, except for foreign operations in hyperinflationary economies, are translated into the presentation currency of the Group (CNY) at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions. Statement of financial position items are translated into CNY at the closing foreign exchange rates at the end of the reporting period. The resulting exchange differences are recognised in other comprehensive income and accumulated separately in equity in the translation reserve. If the operation is a non-wholly-owned subsidiary, then the relevant proportionate share of the translation difference is allocated to the non-controlling interests.

The results and financial position of foreign operations in hyperinflationary economies are translated to CNY at the exchange rates ruling at the end of the reporting period. Prior to translating the financial statements of foreign operations in hyperinflationary economies, their financial statements for the current year are restated to account for changes in the general purchasing power of the local currencies. The restatement is based on relevant price indices at the end of the reporting period.

When a foreign operation is disposed of in its entirety or partially such that control, significant influence or joint control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal.

4 Changes in accounting policies

The IASB issued a number of amendments to existing standards which came into effect in the current year. None of these led to a change in the Group's significant accounting policies.

5 Accounting judgements and estimates

Note 14 contains information about the assumptions and their risk factors relating to valuation of goodwill impairment. Other key sources of estimation uncertainty are as follows:

(a) Revenue recognition

Revenue from sale of goods and provision of services are recognised when the criteria set out in note 3(q) are met. Management judgement is applied relating to, inter alia, conformance with acceptance criteria and if transfer of risks and rewards to the customer has taken place to determine if revenue should be recognised in the current year and the customer credit standing to assess whether payment is likely or not to justify revenue recognition.

(b) Impairment of receivables

The credit risk of customers is regularly assessed with focus on the customers' current ability to pay, historical payment records and taking into account information specific to the customer as well as pertaining to the country and economic environment in which the customer operates. If the financial condition of customers were to deteriorate or improve, additional allowances or reversals may be required in future periods.

(c) Net realisable value of inventories

The net realisable value of inventories is the estimated selling price in the ordinary course of business, less the estimated costs of completion and the estimated costs necessary to make the sale. These estimates are based on the current market condition and the historical experience of

distributing and selling products of similar nature. It could change significantly as a result of competitor actions in response to severe industry cycles or other changes in market condition. Management will reassess the estimations at the end of each reporting period.

(d) Depreciation and amortisation

Property, plant and equipment are depreciated on a straight-line basis over the estimated useful lives, after taking into account the estimated residual value. Intangible assets with finite useful life are amortised on a straight-line basis over the estimated useful lives. Both the period and method of depreciation and amortisation are reviewed annually. The depreciation and amortisation expense for future periods is adjusted if there are significant changes, such as operational efficiency or changes in technologies, from previous estimates.

(e) Impairment losses of long-lived assets

The carrying amounts of long-lived assets (including goodwill) are reviewed periodically in order to assess whether the recoverable amounts have declined below the carrying amounts. In order to determine the recoverable amount, the Group uses assumptions and develops expectations, which requires significant judgement. The Group uses all readily available information in determining an amount that is a reasonable approximation of recoverable amount, including estimates based on reasonable and supportable assumptions and projections of production volume, sales price, amount of operating costs, discount rate and growth rate.

(f) Income tax

The Group is subject to income taxes in various jurisdictions. Significant judgement is required in determining the Group provision for income taxes. There are many transactions and computations for which the ultimate tax determination is uncertain during the ordinary course of business. The Group recognises liabilities based on estimates of whether additional taxes will

eventually be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will impact current and deferred tax liabilities and the taxation charge for the year.

(g) Provision for warranties

As explained in note 27, the Group makes provision for warranties in respect of its products, taking into account the Group's recent claim experience and anticipated claim rates for its products. As the Group is continually upgrading its product designs and launching new models, it is possible that the recent claim experience is not indicative of future claims that it will receive in respect of past sales. Any increase or decrease in the provision would affect profit or loss in future years.

(h) Other provisions

The Group makes provisions for onerous contracts, product sales, outstanding litigations and claims based on project budgets, contract terms, available knowledge and past experience. The Group recognises provisions to the extent that it has a present legal or constructive obligation as a result of a past event; that it is probable that an outflow of resources will be required to settle the obligation; and that the amount can be reliably estimated. Judgement is required in making such estimates and the ultimate outcome may be different.

(i) Deferred tax asset

The Group considers the key source of estimation uncertainty lies in recognition of deferred tax assets from unused tax losses and deductible temporary differences. As explained in note 3(o), all deferred tax assets to the extent that it is probable that future taxable profits will be available against which they can be utilised, are recognised. It is possible that adverse changes to the operating environment or the Group's organisation structure could result in a future write-down of the deferred tax assets recognised.

6 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended December 31, 2016

The IASB has issued a number of new standards and amendments which will affect the financial statements in subsequent accounting periods. Those most relevant to the Group are set out below.

	<i>Effective for accounting periods beginning on or after</i>
IFRS 15, <i>Revenue from contracts with customers</i>	January 1, 2018
IFRS 9, <i>Financial instruments</i>	January 1, 2018
IFRIC 22, <i>Foreign currency transactions and advance consideration</i>	January 1, 2018
IFRS 16, <i>Leases</i>	January 1, 2019
Amendments to IAS 7, <i>Statement of cash flows: Disclosure initiative</i>	January 1, 2017
Amendments to IAS 12, <i>Recognition of Deferred Tax Assets for Unrealised Losses</i>	January 1, 2017

The main changes and expected impacts are:

- **IFRS 15, *Revenue from contracts with customers***

IFRS 15 is a comprehensive framework for recognising revenue from contracts with customers, replacing IAS 18, *Revenue*, IAS 11, *Construction contracts* and IFRIC 13 *Customer Loyalty Programmes*. The overall requirement is to identify the performance obligations in a contract with a customer and allocate the transaction price of the contract to each identified performance obligation and recognise revenue as each of the performance obligation is satisfied. The Group is currently assessing the impacts of adopting IFRS 15 on its financial statements, including on transition.

- i. **Timing of revenue recognition**

The Group's existing revenue recognition policies are disclosed in note 3(q); generally revenue arising from the provision of services is recognised over the period that the services are provided and revenue from the sale of goods is recognised when the risks and rewards of ownership have passed to the customers.

Under IFRS 15, revenue will be recognised when the customer obtains control of the promised good or service in the contract. Further analysis is required to determine whether and how this new requirement with its focus on the transfer of control will materially impact the financial statements.

- ii. **Variable consideration**

The Group currently recognises revenue from the sale of goods at the fair value of the consideration received or receivable, adjusted for returns, trade discounts and volume rebates provided the level of expected return of goods and amount of trade discounts and volume rebates can be estimated reliably. Under IFRS 15, such adjustments are included in the estimate of variable consideration and will be included in the transaction price to the extent that it is highly probable that there will be no significant reversal when any uncertainties are resolved. Further analysis is required to determine whether and how this new requirement on variable consideration will impact the financial statements.

iii. Stand-alone selling prices

IFRS 15 requires that the transaction price of a contract with a customer should be allocated to each performance obligation in proportion to its stand-alone selling price. The Group is assessing whether and how this allocation method will affect the timing of revenue recognised compared to its current allocation methodologies.

■ IFRS 9, *Financial instruments*

IFRS 9 will replace the current standard on accounting for financial instruments, IAS 39, *Financial Instruments: Recognition and Measurement*.

i. Classification and measurement of financial assets

Under IFRS 9 all financial assets have to be assessed to establish whether their terms give rise to payments that are solely payments of principal and interest which is a return for the time value of money, credit risk and a lender's margin. All other financial assets, with the exception of equity investments as described below, must be held at fair value with gains and losses on re-measurement included in profit or loss.

Where assets give rise to payments that are solely for the payment of principal and interest, a further assessment is made of the business model in which the assets are held. The business model is the lowest level at which the financial assets are managed.

Where assets are held in a business model which is to mainly collect cash flows of principal and interest with limited sales, they are held at amortised cost with interest income, impairment and any gains or losses on disposal included in profit or loss. Where assets are held in a business model to which both collecting cash flows

of principal and interest and selling are integral, they are measured at fair value with gains and losses on re-measurement included in other comprehensive income. Interest income, foreign exchange gain or loss, impairment and gains and losses on disposal are included in profit or loss. Where the business model requires frequent sales, such as when the assets are held for trading, they are held at fair value through profit or loss.

All equity securities are held at fair value through profit or loss unless designated at fair value through other comprehensive income. In this case, cumulative gains and losses are not transferred to profit or loss on disposal and nor are they considered for impairment.

Based on its current assessment, the Group expects most accounts receivable will continue to be carried at amortised cost after the adoption of IFRS 9, although some may be held at fair value through other comprehensive income.

Financial investments currently classified as available for sale under IAS 39, the contractual terms of which solely give rise to payments of principal and interest, will be reclassified as either amortised cost or fair value through other comprehensive income.

ii. Impairment of financial assets

Under IFRS 9, credit loss recognition is on an expected loss basis not an incurred loss basis on all financial assets held at amortised cost. The expected loss basis reflects all credit losses that the Group expects to incur based on the probability that customers or issuers will default within 12 months of the balance sheet date, or where there has been a significant deterioration in the credit quality since the initial recognition, over the lifetime of the financial asset.

For all accounts receivable, the Group will recognise lifetime expected losses from the date of original recognition.

The Group expects that IFRS 9 will lead to earlier credit loss recognition for accounts receivable.

- **Transition to IFRS 9 and IFRS 15**

The Group currently plans to adopt IFRS 15 using the modified retrospective method and IFRS 9 on January 1, 2018 and will not restate comparative figures for 2017.

- **IFRIC 22, *Foreign currency transactions and advance consideration***

IFRIC 22 clarifies that non-monetary foreign currency consideration received in advance is not re-measured to the rate ruling on the date that revenue is recognised. This could affect the Group's revenue recognition practices in countries where prepayments are taken in the normal course of business.

- **IFRS 16, *Leases***

IFRS 16 replaces IAS 17, *Leases* and will affect how the Group accounts for leasing transactions as lessee. The main change is that the Group will recognise an asset in respect of the right to use assets held under operating leases, and a liability for its obligations to make payments under such leases.

7 Segment information

Operating segments are determined based on the types of customers, products and services provided, as well as the Group's organisation structure, management requirement and reporting system. The Group divides its business into three operating segments:

- **Carrier Business**

The Carrier Business provides a series of products, services and business solutions encompassing wireless network, fixed network, cloud core network, carrier software, IT infrastructure, network energy, professional services, and network rollout services, for global telecom carriers.

- **Enterprise Business**

The Enterprise Business builds a digital infrastructure platform by using new ICT technologies such as cloud computing, software-defined networking, big data and Internet of Thing to provide products and services that help industries (such as government, public utilities, finance, energy, transport, and manufacturing) go digital.

- **Consumer Business**

The Consumer Business provides smartphones, tablets, wearable devices, converged home devices, as well as the applications on these devices for consumers and businesses.

There are no inter-segment transactions. The financial information of the different segments is regularly reviewed by the Group's most senior executive management for the purpose of resource allocation and performance assessment.

Revenue information in respect of business segments

(CNY million)	2016	2015
Carrier	290,561	235,113
Enterprise	40,666	27,610
Consumer	179,808	125,194
Unallocated items	10,539	7,092
Total	521,574	395,009

Revenue information in respect of geographical segments

(CNY million)	2016	2015
China	236,512	167,690
Europe, the Middle East and Africa (EMEA)	156,509	127,719
Asia Pacific	67,500	49,403
Americas	44,082	38,910
Others	16,971	11,287
Total	521,574	395,009

8 Revenue

(CNY million)	2016	2015
Sale of goods and provision of services	521,428	394,922
Rental income (note 28(b))	146	87
	521,574	395,009

9 Other income, net

(CNY million)	2016	2015
Factoring expenses	(1,064)	(639)
Government grants	1,295	2,076
Impairment loss on intangible assets and goodwill (note 14)	(154)	(45)
Net loss on disposal of property, plant and equipment and intangible assets	(89)	(222)
Others	231	1,807
	219	2,977

Government grants

During the year ended December 31, 2016, the Group received unconditional government grants of CNY476 million (2015: CNY539 million) in respect of its contributions to the development of research and innovation in the PRC. These grants were directly recognised as other income.

During the year ended December 31, 2016, the Group received government grants of CNY388 million (2015: CNY846 million) which were conditional upon completion of certain research and development projects. These grants were initially recognised in the consolidated statement of financial position as deferred government grants and are amortised through the consolidated statement of total comprehensive

income on a systematic basis in the same periods in which the related research and development expenses are incurred. During the year ended December 31, 2016, conditional government grants of CNY819 million (2015: CNY1,537 million) were recognised in profit or loss.

10 Personnel expenses

(CNY million)	2016	2015
Salaries, wages and other benefits	94,179	80,214
Time-based unit plan (TUP)	13,076	8,923
Post-employment plans		
– Defined benefit plan	3,408	2,451
– Defined contribution plans	11,209	9,246
	14,617	11,697
	121,872	100,834

TUP

TUP is a profit-sharing and bonus plan based on employee performance for all eligible employees (recipients) in the Group. Under TUP, time-based units (TBUs) are granted to recipients for a period of five years which entitle them to receive an annual cash incentive based on an annual profit-sharing amount and a cumulative end-of-term appreciation amount. Both the annual profit-sharing and the end-of-term appreciation amount are determined at the discretion of the Group. Recipients will receive the pay-out of the annual profit-sharing amount in each of the next fiscal year during the five-year period. TBUs expire either at the end of the five-year period or on the date recipients leave the Group's employment, when the end-of-term appreciation amount will be paid.

Defined contribution plans

The Group contributes to defined contribution retirement plans for eligible employees. The plans are managed either by the government in the countries where the employees are employed, or by independent trustees. Contribution levels are determined by the relevant laws and regulations concerned.

11 Finance income and expenses

(CNY million)	Note	2016	2015
Interest income		2,823	2,868
Gain on disposal of available-for-sale financial assets stated at fair value	13(b)	1,364	331
Gain from other financial assets		40	17
Dividend income		101	1
Finance income		4,328	3,217
Interest expense		(2,271)	(1,536)
Net foreign exchange loss		(5,223)	(4,362)
Bank charges		(100)	(638)
Interest cost on defined benefit obligations		(288)	(396)
Loss on disposal of other financial assets		(184)	–
Impairment reversed on loan receivables and equity securities		1	–
Finance expenses		(8,065)	(6,932)
Net finance expenses		(3,737)	(3,715)

No borrowing costs were capitalised during the year ended December 31, 2016 (2015: Nil).

12 Income tax in the consolidated statement of total comprehensive income

Charge for the year

(CNY million)	2016	2015
Current tax		
Provision for the year	5,644	7,880
Under/(over)-provision in respect of prior years	291	(515)
	5,935	7,365
Deferred tax	1,071	(2,288)
	7,006	5,077

13 Other comprehensive income

(a) Tax effects relating to each component of other comprehensive income

(CNY million)	2016			2015		
	Before-tax amount	Tax benefit	Net-of-tax amount	Before-tax amount	Tax benefit/(expense)	Net-of-tax amount
Remeasurement of defined benefit obligations						
– The Group	(865)	36	(829)	(361)	55	(306)
Net change in the fair value of available-for-sale investments						
– The Group	(1,489)	385	(1,104)	1,548	(396)	1,152
– Share of associates and joint ventures	2	–	2	–	–	–
	(1,487)	385	(1,102)	1,548	(396)	1,152
Translation differences on foreign operations						
– The Group	3,681	–	3,681	1,050	–	1,050
– Share of associates and joint ventures	(10)	–	(10)	(6)	–	(6)
	3,671	–	3,671	1,044	–	1,044
	1,319	421	1,740	2,231	(341)	1,890

(b) Components of other comprehensive income, including reclassification adjustments

(CNY million)	2016	2015
Available-for-sale investments:		
Changes in fair value recognised during the year	(123)	1,879
Reclassification adjustments for amounts transferred to profit or loss:		
– Gain on disposal (note 11)	(1,364)	(331)
– Net deferred tax credit/(charged) to other comprehensive income	385	(396)
Net movement in the available-for-sale reserve during the year	(1,102)	1,152

(CNY million)	2016	2015
Translation differences on foreign operations:		
Recognised during the year	3,713	1,044
Reclassification adjustments for amounts transferred to profit or loss:		
– Disposal of subsidiaries	(42)	–
Net movement in the translation reserve during the year	3,671	1,044

14 Goodwill and intangible assets

(CNY million)	Goodwill	Software	Patents	Royalties	Trademark and others	Total
Cost:						
At January 1, 2015	3,718	2,615	2,326	–	89	8,748
Exchange adjustments	143	(22)	20	–	(71)	70
Reclassification	–	(533)	78	–	455	–
Additions	–	196	467	–	150	813
Acquisition of subsidiaries	101	–	27	–	7	135
Disposals	–	(254)	(346)	–	(122)	(722)
At December 31, 2015	3,962	2,002	2,572	–	508	9,044
At January 1, 2016	3,962	2,002	2,572	–	508	9,044
Exchange adjustments	285	63	29	37	10	424
Additions	–	327	508	2,068	21	2,924
Acquisition of subsidiaries	87	247	–	–	–	334
Disposals	–	(192)	(17)	–	(57)	(266)
At December 31, 2016	4,334	2,447	3,092	2,105	482	12,460
Amortisation and impairment:						
At January 1, 2015	3,411	1,547	1,142	–	51	6,151
Exchange adjustments	145	(17)	16	–	(1)	143
Reclassification	–	–	(187)	–	187	–
Amortisation for the year	–	243	143	–	94	480
Impairment loss (note 9)	10	–	–	–	35	45
Disposals	–	(155)	(321)	–	(24)	(500)
At December 31, 2015	3,566	1,618	793	–	342	6,319
At January 1, 2016	3,566	1,618	793	–	342	6,319
Exchange adjustments	291	59	25	17	7	399
Amortisation for the year	–	314	180	510	25	1,029
Impairment loss (note 9)	154	–	–	–	–	154
Disposals	–	(190)	(9)	–	(37)	(236)
At December 31, 2016	4,011	1,801	989	527	337	7,665
Carrying amount:						
At December 31, 2016	323	646	2,103	1,578	145	4,795
At December 31, 2015	396	384	1,779	–	166	2,725

(i) The amortisation charge for the year is allocated to "cost of sales", "research and development expenses", "selling expenses" and "administrative expenses" in the consolidated statement of total comprehensive income based on the use of the related assets. Impairment losses are included in "other expenses".

(ii) Goodwill impairment testing

Goodwill is allocated to the Group's cash-generating units (CGU) or group of CGUs, which is not larger than an operating segment and is expected to benefit from the synergies of the acquisition.

For impairment test purposes, the recoverable amounts of the CGUs are based on value-in-use calculations by using a discounted cash flow model. The calculations use cash flow projections based on financial budgets approved by management covering a five-year period, based on industry knowledge. Cash flows beyond the five-year periods are extrapolated using an estimated growth rate which does

not exceed the long-term average growth rate for the business in which the CGU or group of CGUs operates. Cash flows are discounted using pre-tax discount rates that reflect specific risks relating to respective CGU or group of CGUs.

During the year ended December 31, 2016, due to technology development and market change, the Group's expectation for the future growth and profitability of the acquired software business related to Beijing Huawei Longshine Information Technology Company Limited (Beijing Huawei Longshine) is significantly below previous estimates. Therefore impairment loss of CNY154 million was recorded against for the goodwill allocated to Beijing Huawei Longshine.

As at December 31, 2016 and 2015, all of the carrying amount of goodwill is allocated across multiple CGUs and the amount so allocated to each unit is not significant.

(iii) As at December 31, 2016 and 2015, the Group did not hold any intangible assets whose title is restricted nor pledged as security for liabilities.

15 Property, plant and equipment

(CNY million)	Freehold land	Buildings	Machinery, electronic equipment and other equipment	Motor vehicles	Construction in progress	Investment property	Decoration and leasehold improvements	Total
Cost:								
At January 1, 2015	143	12,176	22,612	529	5,589	100	8,093	49,242
Exchange adjustments	1	(65)	(334)	(16)	1	–	(46)	(459)
Additions	–	–	7,288	87	6,217	–	304	13,896
Transfer from construction in progress	–	1,742	1,656	–	(4,406)	–	1,008	–
Transfer to construction in progress	–	(212)	(83)	–	77	–	(1)	(219)
Disposals	–	(344)	(2,012)	(86)	–	–	(482)	(2,924)
At December 31, 2015	144	13,297	29,127	514	7,478	100	8,876	59,536
At January 1, 2016	144	13,297	29,127	514	7,478	100	8,876	59,536
Exchange adjustments	(20)	(90)	196	(2)	19	–	16	119
Additions	–	75	11,541	128	10,466	–	50	22,260
Transfer from construction in progress	–	1,953	2,599	–	(6,043)	–	1,491	–
Acquisition of subsidiaries	–	–	4	–	–	–	2	6
Transfer to construction in progress	–	(532)	(89)	–	185	–	(59)	(495)
Disposals	–	–	(1,527)	(75)	(151)	–	(268)	(2,021)
At December 31, 2016	124	14,703	41,851	565	11,954	100	10,108	79,405
Accumulated depreciation and impairment:								
At January 1, 2015	–	3,107	13,147	340	–	84	5,316	21,994
Exchange adjustments	–	1	(189)	(10)	–	–	(30)	(228)
Transfer to construction in progress	–	(139)	(78)	–	–	–	(2)	(219)
Depreciation charge for the year	–	345	3,523	64	–	1	1,042	4,975
Disposals	–	(165)	(1,774)	(80)	–	–	(405)	(2,424)
At December 31, 2015	–	3,149	14,629	314	–	85	5,921	24,098
At January 1, 2016	–	3,149	14,629	314	–	85	5,921	24,098
Exchange adjustments	–	(10)	88	2	–	–	10	90
Transfer to construction in progress	–	(351)	(85)	–	–	–	(59)	(495)
Depreciation charge for the year	–	407	6,226	68	–	1	1,148	7,850
Disposals	–	–	(1,111)	(71)	–	–	(263)	(1,445)
At December 31, 2016	–	3,195	19,747	313	–	86	6,757	30,098
Carrying amount:								
At December 31, 2016	124	11,508	22,104	252	11,954	14	3,351	49,307
At December 31, 2015	144	10,148	14,498	200	7,478	15	2,955	35,438

As at December 31, 2016 and 2015, the Group did not hold any property, plant and equipment as collateral for liabilities or contingent liabilities.

Investment property

The fair value of investment property as at December 31, 2016 is estimated by management to be CNY143 million (2015: CNY147 million).

The fair value of investment property is determined by the Group internally with reference to market conditions and discounted cash flow forecasts, taking into account current lease agreements on an arm's-length basis. The fair value measurement is categorised into level 3 of the fair value hierarchy as defined in IFRS 13, *Fair value measurement*.

16 Long-term leasehold prepayments

(CNY million)	2016	2015
At January 1	3,306	3,349
Additions	890	37
Amortisation for the year	(84)	(80)
At December 31	4,112	3,306

17 Interests in associates and joint ventures

(CNY million)	Associates		Joint ventures		Total	
	2016	2015	2016	2015	2016	2015
Share of net assets	277	424	166	78	443	502
Goodwill	44	43	15	–	59	43
Subtotal	321	467	181	78	502	545
Less: impairment loss	(18)	(17)	–	–	(18)	(17)
Total	303	450	181	78	484	528

All associates and joint ventures are accounted for using the equity method in the consolidated financial statements.

Particulars of material associate and joint venture, all of which are unlisted corporate entities whose quoted market price is not available, are set out below:

Name of associate or joint venture	Form of business structure	Place of incorporation and business	Proportion of ownership interest		Principal activities
			2016	2015	
<i>Associate</i>					
TD Tech Holding Limited ("TD Tech")	Incorporated	Hong Kong, PRC	49%	49%	Research and development, production and sale of TD-SCDMA telecommunication products.
<i>Joint venture</i>					
Huawei Marine Systems Co., Ltd. ("Huawei Marine")	Incorporated	Hong Kong, PRC	51%	51%	Construction and operation of submarine fibres.

Summarised financial information of the material associate, reconciled to the carrying amounts in the consolidated financial statements, is as follow:

(CNY million)	TD Tech	
	2016	2015
<i>Gross amounts of the associate's</i>		
Current assets	2,069	1,557
Non-current assets	53	67
Current liabilities	(1,378)	(1,022)
Equity	744	602
Revenue	6,329	4,747
Profit (note a)	138	125
Other comprehensive income	4	–
Total comprehensive income (note a)	142	125
<i>Reconciled to the Group's interest in the associate</i>		
Gross amounts of net assets of the associate	744	602
Group's effective interest	49%	49%
Group's share of net assets of the associate	365	295
Elimination of unrealised profit	(125)	(208)
Carrying amount in the consolidated financial statements summary	240	87

Note a: As the issuance date of the Group's consolidated financial statements is ahead of TD Tech's audit report date, the Group applies the equity method to account for its investment in TD Tech based on unaudited financial information contained in TD Tech's management accounts, which may differ from TD Tech's audited results. The differences are to be accounted for in the Group's next financial period.

Summarised financial information of the material joint venture, reconciled to the carrying amount in the consolidated financial statements, is as follow:

(CNY million)	Huawei Marine	
	2016	2015
<i>Gross amounts of the joint venture's</i>		
Current assets	1,046	729
Non-current assets	60	31
Current liabilities	(676)	(519)
Non-current liabilities	(29)	(14)
Equity	401	227
Included in the above assets and liabilities:		
Cash and cash equivalents	332	176
Revenue	1,420	1,259
Profit	174	94
Other comprehensive income	(22)	(9)
Total comprehensive income	152	85
Included in the above profit:		
Depreciation and amortisation	(4)	(1)
Interest income	11	–
Income tax expense	(17)	(2)
<i>Reconciled to the Group's interest in the joint venture</i>		
Gross amounts of net assets of the joint venture	401	227
Group's effective interest	51%	51%
Group's share of net assets of the joint venture	205	116
Elimination of unrealised profit	(89)	(83)
Carrying amount in the consolidated financial statements summary	116	33

Aggregate carrying amounts and summarised financial information of individually immaterial associates and joint ventures are as follows:

(CNY million)	Associates		Joint ventures	
	2016	2015	2016	2015
Aggregate carrying amount	63	363	65	45
Aggregate amount of the Group's share of those associates' and joint ventures'				
Profit/(loss)	32	84	(1)	(1)
Other comprehensive income	2	(1)	(1)	(1)
Total comprehensive income	34	83	(2)	(2)

For the years ended December 31, 2016 and 2015, no dividend was declared or paid by associates or joint ventures.

18 Other investments, including derivatives

(CNY million)	Note	2016	2015
Investment funds	(i)	4,500	2,823
Debt securities		10,017	5,930
Equity securities – unlisted		254	393
Equity securities – listed		281	1,752
Forward exchange contracts		24	11
Fixed deposits		10,550	7,719
		25,626	18,628
Less: Impairment allowance	(ii)	(17)	(20)
		25,609	18,608
Non-current portion		3,003	3,961
Current portion		22,606	14,647
		25,609	18,608

(i) Investment funds comprise short-term investments in wealth management products and money market funds.

(ii) As at December 31, 2016 and 2015, certain of the Group's other investments were individually determined to be impaired on the basis of a material decline in value and adverse changes in the market in which the investees operated. This indicated that the carrying amount of these investments may not be recovered in full and impairment losses were recognised in profit or loss in accordance with the policy set out in note 3(k).

As at December 31, 2016 and 2015, the Group did not hold any other investments pledged as collateral for liabilities or contingent liabilities.

19 Deferred tax assets and liabilities

(a) Components of recognised deferred tax assets/(liabilities)

(CNY million)	2016	2015
Accruals and provisions	8,615	9,791
Depreciation of property, plant and equipment	(269)	341
Provision for impairment losses	1,394	1,075
Unrealised profit	4,002	4,081
Tax losses	447	309
Undistributed profits of subsidiaries	(893)	(149)
Fair value adjustments on acquisition of subsidiaries	(77)	(26)
Others	2,610	1,018
Total	15,829	16,440

Reconciliation to the consolidated statement of financial position

(CNY million)	2016	2015
Net deferred tax assets recognised in the consolidated statement of financial position	16,933	16,900
Net deferred tax liabilities recognised in the consolidated statement of financial position	(1,104)	(460)
	15,829	16,440

(b) Deferred tax assets not recognised

In accordance with the accounting policy set out in note 3(o), as at December 31, 2016 and 2015, deferred tax assets were not recognised in relation to certain unused tax losses and deductible temporary differences.

Unused tax losses of CNY6,705 million have not been recognised as deferred tax assets as at December 31, 2016 (2015: CNY3,371 million). The expiry dates of unrecognised unused tax losses are analysed as follows:

(CNY million)	2016	2015
Expiring in:		
2016	–	11
2017	1	9
2018	1	70
2019	841	679
2020	957	744
2021 and afterwards or no expiring period	4,905	1,858
	6,705	3,371

In addition, deductible temporary differences amounting to CNY17,080 million have not been recognised as deferred tax assets as at December 31, 2016 (2015: CNY9,411 million).

20 Inventories

(a) Analysis of inventories

(CNY million)	2016	2015
Raw materials	17,229	10,916
Manufacturing work in progress	11,138	5,765
Finished goods	18,321	16,045
Contract work in progress	24,275	27,892
Other inventories	3,013	745
	73,976	61,363

As at December 31, 2016 and 2015, the Group did not hold any inventories pledged as collateral for liabilities or contingent liabilities.

(b) Amount of inventories recognised as an expense and included in profit or loss:

(CNY million)	2016	2015
Carrying amount of inventories sold	248,739	177,399
Reversal of provision for inventory	(590)	(538)
	248,149	176,861

21 Trade and bills receivable

(CNY million)	Note	2016	2015
Trade receivables			
Trade receivables from third parties		108,508	92,030
Trade receivables from related parties	31	355	395
		108,863	92,425
Bills receivable			
Bank acceptance bills		1,603	1,101
Commercial acceptance bills		218	735
Letters of credit receivable		1,049	1,097
		2,870	2,933
		111,733	95,358
Non-current portion		3,776	2,098
Current portion		107,957	93,260
		111,733	95,358

(a) Ageing analysis

At the end of the reporting period, the ageing analysis of trade receivables from third parties is as follows:

(CNY million)	2016	2015
Not past due	81,031	67,100
Less than 90 days past due	19,933	19,588
90 days to 1 year past due	10,661	8,857
1 year and above past due	4,275	3,658
	115,900	99,203
Less: Allowance for doubtful debts	(7,392)	(7,173)
	108,508	92,030

(b) Impairment of trade receivables from third parties

Impairment losses in respect of trade receivables from third parties are recorded using an allowance account unless the Group is satisfied the possibility of recovery is remote, in which case the receivables are written off (see note 3(k)).

The movement in the allowance for doubtful debts in respect of trade receivables from third parties during the year is as follows:

(CNY million)	2016	2015
At January 1	7,173	5,067
Exchange adjustments	159	(263)
Impairment loss (reversed)/recognised	(425)	1,932
Collection of previously written-off debtors	1,112	900
Uncollectible amounts written-off	(627)	(463)
At December 31	7,392	7,173

As at December 31, 2016, the impairment allowance includes allowance of CNY3,616 million (2015: CNY2,143 million) on individually assessed receivables from third parties of CNY4,396 million (2015: CNY3,143 million) relating to customers who are in financial difficulties and the likelihood of recovery is expected to be in doubt. Apart from receivables that have been provided for specifically, general allowances were estimated by management based on the risk portfolio and ageing analysis of the remaining receivable balances.

(c) Trade receivables from third parties that are not impaired

The analysis of trade receivables from third parties that are neither individually nor collectively considered to be impaired is as follows:

(CNY million)	2016	2015
Neither past due nor impaired	79,987	64,283

Receivables that are neither past due nor impaired relate to a wide range of customers for whom there was no objective evidence of impairment, such as default.

Receivables that are past due but not impaired are immaterial.

(d) Trade receivables from related parties

The Group monitors the trade receivables from related parties on an ongoing basis considering their financial results, position, payments and other factors. As at December 31, 2016, allowance for doubtful debts in respect of trade receivables from related parties was CNY7 million (2015: CNY8 million).

(e) Transferred trade receivables that are not derecognised in their entirety

As at December 31, 2016, the Group's trade receivables with the carrying amount of CNY2,791 million (2015: CNY2,443 million) have been transferred to a bank to receive financing of CNY2,791 million (2015: CNY2,443 million). As these transactions are with recourse against the Group in the event of subsequent default, the Group has retained substantially all the risks and rewards and therefore continues to recognise these trade receivables and the relevant financing as loans and borrowings (note 24).

As at December 31, 2016, the Group's trade receivables with the carrying amount of CNY1,054 million (2015: nil) have been transferred to a bank. These trade receivables are covered by insurance policies issued by a third party export credit agency with the transferee as the insurance beneficiary right holder. In these transactions, the Group retains risk and damage not covered by the insurance, therefore the Group has neither transferred nor retained substantially all the risk and rewards in relations to the trade receivables and the Group is considered to have retained control of these trade receivables as the transferee has no practical ability to sell these trade receivables without the Group's consent. As such, the Group continued to recognise the transferred trade receivables of CNY238 million and the associated liabilities of CNY263 million to the extent of its continuing involvement. The associated liabilities are included in other liabilities.

(f) Collateral

Except as disclosed in Note 21(e), as at December 31, 2016 and 2015, the Group did not hold any other trade and bills receivable pledged as collateral for liabilities or contingent liabilities.

22 Other assets

(CNY million)	Note	2016	2015
Advance payments to suppliers		3,349	3,384
Prepayment for acquisition of long-term leasehold land		190	–
Tax related assets		16,662	10,638
Pledged deposits with a bank		2,091	1,898
Other receivables from third parties		9,780	10,497
Other receivables from related parties	31	694	401
Dividend receivables		–	2
Other long-term deferred assets		872	548
		33,638	27,368
Non-current portion		5,722	5,553
Current portion		27,916	21,815
		33,638	27,368

23 Cash and cash equivalents

(CNY million)	2016	2015
Cash on hand	9	10
Deposits with banks and other financial institutions	72,315	72,442
Highly liquid short-term investments	50,622	38,109
Deposits with third party merchants	101	–
	123,047	110,561

As at December 31, 2016, the Group had short-term investments of CNY50,622 million (2015: CNY38,109 million). These short-term investments were highly liquid, readily convertible into known amounts of cash and were subject to an insignificant risk of changes in value, including wealth management products purchased from commercial banks with maturities of less than three months or with maturities of less than one year which can be redeemed at any time without any interest penalty, and money market funds that comprise investments in short-term debt securities which have constant net asset values.

As at December 31, 2016, cash and cash equivalents of CNY703 million (2015: CNY653 million) were held in countries where exchange controls or other legal restrictions are applicable.

At December 31, 2016, the Group held CNY10,684 million (2015: CNY15,312 million) of cash in two multicurrency pooling arrangements used to meet its day to day cash requirements and also to economically hedge foreign exchange rate movements arising from foreign currency cash flows. The facilities allow participating subsidiaries to place deposits and borrow funds from the counterparty banks, in substance to hold long and short positions, in any freely convertible currency subject to the overall balance on the pools being positive.

As at December 31, 2016 and 2015, the Group did not hold any cash and cash equivalents pledged as collateral for liabilities or contingent liabilities.

24 Loans and borrowings

Contractual terms of the Group's loans and borrowings are summarised below.

(CNY million)	2016	2015
Short-term loans and borrowings:		
– Intra-group guaranteed	601	568
– Unsecured	1,397	1,299
	1,998	1,867
Long-term loans and borrowings:		
– Intra-group guaranteed	16,925	15,534
– Trade receivables financing (note 21(e))	2,791	2,443
– Unsecured	821	1,150
– Corporate bonds	22,264	7,992
	42,801	27,119
	44,799	28,986
Non-current portion	40,867	26,501
Current portion	3,932	2,485
	44,799	28,986

Intra-group guaranteed loans are borrowings which have been issued by one group entity but contractual payments of principal and interest are guaranteed by another group entity.

Terms and repayment schedule

A summary of the main terms and conditions of outstanding loans and borrowings are as follows:

(CNY million)		Interest rate	Total	1 year or less	1 to 5 years	over 5 years
Intra-group guaranteed bank loans:						
Euro (EUR)	variable	0.73% ~ 1.50% p.a.	3,651	–	3,651	–
Indian Rupee	variable	7.90% p.a.	148	148	–	–
Nepalese Rupee	fixed	7.50% p.a.	73	73	–	–
Russian Ruble	variable	11.15% ~ 11.30% p.a.	380	380	–	–
United States dollar (USD)	variable	1.96% ~ 2.32% p.a.	12,168	–	12,168	–
CNY	variable	4.41% ~ 4.90% p.a.	1,106	196	546	364
			17,526	797	16,365	364
Trade receivables financing:						
USD	variable	4.54% ~ 5.14% p.a.	2,791	47	1,015	1,729
Unsecured bank loans:						
Hungarian Forint	fixed	4.36% p.a.	107	–	–	107
CNY	variable	4.41% ~ 4.60% p.a.	715	96	381	238
USD	variable	1.40% ~ 2.20% p.a.	1,396	1,396	–	–
			2,218	1,492	381	345
Corporate bonds:						
CNY	fixed	4.55% p.a.	1,596	1,596	–	–
USD	fixed	4.125% p.a.	20,668	–	–	20,668
			22,264	1,596	–	20,668
			44,799	3,932	17,761	23,106

Certain of the Group's banking facilities are subject to compliance with covenants relating to certain statement of financial position ratios. In the event of breach, the drawn down facilities would become payable on demand. The Group regularly monitors its compliance with these covenants. As at December 31, 2016 and 2015, none of the covenants relating to drawn down facilities had been breached.

Corporate bonds

On May 6, 2016, Proven Honour Capital Limited (Proven Honour), a wholly-owned subsidiary of the Company, issued a corporate bond with a principal amount of USD2,000 million with ten years maturity at an annual interest rate of 4.125%. On May 19, 2015, Proven Honour issued a corporate bond with a principal amount of USD1,000 million with ten years maturity at an annual interest rate of 4.125%. On September 17, 2014, Proven Honour issued a corporate bond with a principal amount of CNY1,600 million with three years maturity at an annual interest rate of 4.55%.

All the corporate bonds are fully guaranteed by the Company.

25 Trade and bills payable

(CNY million)	Note	2016	2015
Trade payables			
Trade payables to related parties	31	814	1,099
Trade payables to third parties		70,282	59,918
		71,096	61,017
Bills payable			
Bank acceptance bills		28	–
Letters of credit payable		10	–
		38	–
		71,134	61,017

26 Other liabilities

(CNY million)		2016	2015
Interest payable		1,099	626
Advances received		31,650	40,116
Accrued expenses			
– Staff related		52,797	46,352
– Suppliers related		26,502	18,486
Other taxes payable		7,713	9,327
Due in relation of property, plant and equipment and intangible assets		4,960	2,209
Others		21,800	16,663
		146,521	133,779
Non-current portion		1,073	–
Current portion		145,448	133,779
		146,521	133,779

27 Provisions

(CNY million)	Note	2016	2015
Provision for warranties	(b)	7,028	5,283
Onerous contracts		1,602	1,862
Provision for product sales		2,668	1,841
Other provisions	(c)	3,359	2,147
		14,657	11,133

(a) Movement in provisions during the year is shown as below:

(CNY million)	Provision for warranties	Onerous contracts	Provision for product sales	Other provisions	Total
At January 1, 2016	5,283	1,862	1,841	2,147	11,133
Exchange adjustments	153	–	36	1	190
Provisions made	6,126	1,595	6,004	1,379	15,104
Provisions utilised	(4,534)	(1,855)	(5,213)	(168)	(11,770)
At December 31, 2016	7,028	1,602	2,668	3,359	14,657

(b) Provision for warranties

The provision for warranties relates mainly to products sold during the year and is determined based on estimates made from historical warranty data associated with similar products and anticipated rates of warranty claims for the products. Most claims are expected to be settled within one year.

(c) Other provisions

Other provisions are mainly for outstanding tax cases.

28 Operating leases

(a) As lessee

As at December 31, 2016 and 2015, the total future minimum lease payments under non-cancellable operating leases are payable as follows:

(CNY million)	2016	2015
Within 1 year	2,777	2,082
After 1 year but within 5 years	3,797	2,339
After 5 years	690	268
	7,264	4,689

The Group leases a number of warehouses, factory facilities, office premises and staff apartments under operating leases. These leases typically run for an initial period of one to five years. None of the leases includes contingent rental payments.

During the year ended December 31, 2016, CNY4,204 million was recognised as an expense in the consolidated statement of total comprehensive income in respect of operating leases (2015: CNY3,539 million).

(b) As lessor

The Group leases out certain of its properties under operating leases (see note 8 and note 15). As at December 31, 2016 and 2015, the Group's total future minimum lease payments under non-cancellable operating leases are receivable as follows:

(CNY million)	2016	2015
Within 1 year	18	17
After 1 year but within 5 years	28	45
	46	62

During the year ended December 31, 2016, CNY146 million was recognised as rental income in the consolidated statement of total comprehensive income (2015: CNY87 million).

29 Capital commitments

Acquisition and construction of property, plant and equipment and intangible assets

Capital commitments of the Group in respect of acquisition and construction of property, plant and equipment and intangible assets outstanding at December 31, 2016 and 2015 not provided for in the consolidated financial statements were as follows:

(CNY million)	2016	2015
Contracted for	11,563	6,756
Authorised but not contracted for	7,559	13,888
	19,122	20,644

30 Contingencies

On July 24, 2012, Technology Properties Limited LLC (TPL) filed a complaint with the United States International Trade Commission (the USITC or Commission), requesting the Commission to commence an investigation under Section 337 of the Tariff Act of 1930 into certain wireless consumer electronics devices and components manufactured by thirteen companies and their affiliates by reason of alleged patent infringement and requested for issuance of an exclusion order and cease and desist order in relation to the electronic products concerned. Huawei Technologies Co., Ltd. (Huawei Tech) was named as one of the thirteen companies. On August 21, 2012, the USITC decided to institute Section 337 investigation in relation to the electronic products concerned. TPL also filed another complaint before the United States District Court for the Northern District of California for the same reason. On September 6, 2013, the Administrative Law Judge of the USITC issued an initial determination that the Group did not infringe the asserted patent. On February 19, 2014, the USITC issued a final determination that the Group did not infringe the asserted patent. TPL did not appeal the final determination within the statutory period, as a result, the USITC investigation formally terminated. With the termination of the investigation, the suit before the United States District Court for the Northern District of California was reopened. On November 9, 2015, the Group received a favorable claim construction ruling from the district court and now is expecting a decision from the US Court of Appeals for the Federal Circuit where TPL appealed the claim construction ruling. At this stage, the Group is unable to predict the outcome of the suit.

31 Related parties

Transactions with associates and joint ventures

(CNY million)	2016					
	Sales	Purchases and processing expenses	Service income	Rental income	Service expenses	Rental expenses
TD Tech	1,469	595	4	–	51	–
Huawei Marine	230	848	51	3	–	–
JV“Broadband Solutions” LLC	3	–	–	–	–	–
Tianwen Digital Media Technology (Beijing) Co., Ltd.	–	–	1	–	–	–
Chinasoft International Technology Services Ltd.	–	–	–	–	225	–
iSoftStone Technology Service Company Limited	–	–	–	–	739	6
	1,702	1,443	56	3	1,015	6

(CNY million)	2015					
	Sales	Purchases and processing expenses	Service income	Rental income	Service expenses	Rental expenses
TD Tech	786	517	29	–	86	–
Huawei Marine	258	877	25	8	–	–
Chinasoft International Technology Services Ltd.	–	–	–	–	1,758	–
iSoftStone Technology Service Company Limited	–	–	–	–	1,483	37
	1,044	1,394	54	8	3,327	37

Balances with associates and joint ventures

(CNY million)	December 31, 2016			
	Trade receivables	Other receivables	Trade payables	Other payables
TD Tech	313	596	430	3
Huawei Marine	42	98	384	110
	355	694	814	113

(CNY million)	December 31, 2015			
	Trade receivables	Other receivables	Trade payables	Other payables
TD Tech	254	360	392	1
Huawei Marine	141	41	346	13
Chinasoft International Technology Services Ltd.	–	–	182	–
iSoftStone Technology Service Company Limited	–	–	179	–
	395	401	1,099	14

32 Group enterprises

(a) Parent and ultimate controlling party

The Group's ultimate controlling party is the Union.

(b) Major subsidiaries

Name of subsidiaries	Place of incorporation and business	Proportion of ownership interest		Principal activities
		2016	2015	
Huawei Tech	PRC	100%	100%	Development, manufacture and sale of telecommunication and related products and provision of support and maintenance services.
Huawei Machine Co., Ltd.	PRC	100%	100%	Manufacture of telecommunication products.
Shanghai Huawei Technologies Co., Ltd.	PRC	100%	100%	Development and sale of telecommunication products and ancillary services.
Beijing Huawei Digital Technologies Co., Ltd	PRC	100%	100%	Development and sale of telecommunication products and ancillary services.
Huawei Tech. Investment Co., Limited	Hong Kong	100%	100%	Distribution of telecommunication products.
Huawei International Co. Limited	Hong Kong	100%	100%	Distribution of telecommunication products.
Huawei International Pte. Ltd.	Singapore	100%	100%	Distribution of telecommunication products.
PT. Huawei Tech Investment	Indonesia	100%	100%	Development and sale of telecommunication products and ancillary services.
Huawei Technologies Japan K.K.	Japan	100%	100%	Development and sale of telecommunication products and ancillary services.
Huawei Technologies Deutschland GmbH	Germany	100%	100%	Development and sale of telecommunication products and ancillary services.
Huawei Device Co., Ltd.	PRC	100%	100%	Development, manufacture and sale of mobile communication products and ancillaries.
Huawei Device (Dongguan) Co., Ltd.	PRC	100%	100%	Development, manufacture and sale of mobile communication products and ancillaries.

Name of subsidiaries	Place of incorporation and business	Proportion of ownership interest		Principal activities
		2016	2015	
Huawei Device (Hong Kong) Co., Limited	Hong Kong	100%	100%	Sale and related services of mobile communication products and ancillaries.
HUAWEI TECHNICAL SERVICE CO., LTD.	PRC	100%	100%	Installation and maintenance of telecommunication products and ancillaries, including consultancy.
Huawei Software Technologies Co., Ltd	PRC	100%	100%	Development, manufacture and sale of telecommunication software and related products and services.
HiSilicon Technologies Co., Ltd.	PRC	100%	100%	Development and sale of semiconductors.
HiSilicon Optoelectronics Co., Ltd.	PRC	100%	100%	Development, manufacture and sale of optoelectronic products related to information technology.
Huawei Technologies Coöperatief U.A.	Netherlands	100%	100%	Intermediate parent company for certain overseas subsidiaries.
Huawei Global Finance (UK) Limited	United Kingdom	100%	100%	Treasury and risk management.
Proven Honour Capital Limited	British Virgin Islands	100%	100%	Financing.
Futurewei Technologies, Inc.	United States	100%	100%	Technology research and development.
Proven Glory Capital Limited	British Virgin Islands	100%	100%	Financing.

33 Subsequent events

On February 9, 2017, Proven Glory Capital Limited (Proven Glory), a wholly-owned subsidiary of the Company, established a USD5,000 million Medium Term Note Programme (the EMTN Programme).

On February 21, 2017, Proven Glory issued a USD1,500 million dual-tranche corporate bond offering off its EMTN Programme. The USD1,000 million 5-year tranche carries an annual interest rate of 3.25%. The USD500 million 10-year tranche carries an annual interest rate of 4.00%. Both of these tranches are fully guaranteed by the Company.

34 Comparative figures

The presentation of certain prior year comparative figures has been adjusted to reflect current year presentation requirements. None of these changes were considered material.

Risk Factors

All risk factors listed in this Annual Report, particularly those covered in this section, refer to key future uncertainties that could influence the company's business objectives. These are risk factors that have been identified to exist in Huawei's strategic plans, business models, external environment, and financial system. Major risk factors refer to events that could significantly impact the company's competitiveness, reputation, financial position, operating results, and long-term prospects over the coming 18 months. The major risk factors faced by Huawei are outlined below.

Huawei's Risk Management System

Based on the COSO framework, and with reference to ISO 31000 risk management standards, Huawei has developed for its organizational structure and operating model an ERM system, released ERM policies and processes, continuously refined its ERM organizations and operating mechanisms, and promoted risk management assessments. Huawei's ERM system plays the following major roles:

- Finance Committee (FC): With the authorization of the Board of Directors, the FC acts as the decision-maker for risk management, coordinates company-wide risk management activities, and makes decisions on major corporate-level risks.
- Risk Management Committee under the FC: With the authorization of the FC, this committee fulfills risk management responsibilities and manages the company's routine risks.

- Business managers: As primary risk management owners in their respective business domains, business managers proactively identify and manage risks to keep them at an acceptable level.

At Huawei, risk management factors are incorporated into strategic planning and business planning processes: Each business domain and region systematically identifies and assesses risks during strategic planning, lists out countermeasures in annual business plans, and monitors and reports on high-agenda risks during routine operations. Huawei ensures uninterrupted business operations by identifying major risk factors in strategic decision-making and planning coupled with measures to control risks in business planning and execution.

Strategic Risks

From a technology perspective, we will have entered an intelligent world within two to three decades. The world around us will undergo a seismic shift, the depth and breadth of which we can hardly imagine. But one thing is very clear: The transformation of the ICT industry will introduce greater uncertainty to technology, business, and transaction models.

Looking to the future, we will remain dedicated to our pipe strategy, and to building a technical architecture that achieves synergy between devices, data pipes, and the cloud in the intelligent world. We will invest more heavily in research into technology and business models where development is uncertain, remain focused on our goals,

and make concentrated investments along multiple paths in multiple waves. At the same time, we will strive to stay ahead of industry trends, and identify, understand, and satisfy the diverse requirements of our customers. To maintain and increase our competitive strengths and continuously improve our operating performance, we will continue to launch better products and services while reducing the total cost of ownership for our customers. Going forward, we will continue to invest in the future, developing advantages in technologies and the industry ecosystem and striving to become a strategic partner trusted by our customers.

External Risks

Macro environment: Black swan events occur frequently around the globe, and many countries around the world face deep-seated economic strife. Financial and geopolitical risks are on the rise. Therefore, Huawei also has an increased likelihood of facing additional risks, both internally and externally. We will continue to focus on the impact that ever-evolving risks have on our business and promptly adjust our strategies accordingly.

Legal risks: Adherence to business ethics, respect for international conventions, and observance of local laws and regulations are the foundations of Huawei's global operations. They are also a core set of principles followed by Huawei's management team. The legal environment in some regions where Huawei operates is complex. We strive to fully comply with all local laws and regulations; but negative impacts might still occur. Huawei will continue as always to proactively assess

risks and take preventative measures to address them. The certainty of legal compliance is our best bulwark against the uncertainties of international politics.

Trade risks: The growth of global trade has lagged behind global economic growth for five consecutive years. The overall trade environment is becoming increasingly complex and challenging. Many countries have expressed their intention to pursue trade policies aimed at bolstering economic development and employment. As a global company, Huawei supports global trade rules and pledges to place trade compliance above its own commercial interests.

As a representative of global ICT multinationals, Huawei became a member of the World Customs Organization's Private Sector Consultative Group (PSCG) in June 2016. As a member of the PSCG, Huawei provides policy recommendations to the World Customs Organization on trade and customs issues, helps overcome global trade challenges, and promotes the development of customs policies and trade facilitation.

Natural disasters: Earthquakes, floods, epidemics, and other natural disasters could impact certain portions of Huawei's business operations. Supporting stable network operations is our mission and primary social responsibility. We have a robust set of mechanisms to respond to natural disasters and continue to improve our capabilities in this regard. This has helped us ensure business continuity, and has also helped support the business operations of our customers.

Country-specific risks: Huawei currently operates in more than 170 countries and regions worldwide. The complex international economic and political landscape could expose Huawei to particular risks in certain countries and regions. These risks include civil unrest, economic and political instability, sharp exchange rate fluctuations, foreign exchange controls, sovereign debt crises, regulations on local business operations, and labor issues. In particular, tensions between regions, civil wars, sanctions, or local unrest could greatly hinder Huawei's business operations and development. To address these risks, Huawei must possess exceptional risk management and response capabilities. We must closely monitor possible risks and changes in the environment, and employ prompt countermeasures to minimize any potential business impacts.

Operational Risks

Business continuity: With today's highly globalized division of labor, Huawei must rely on third parties (including companies and agencies) for manufacturing, logistics, and services. Therefore, third party business discontinuity could directly or indirectly compromise Huawei's operations and business performance.

To ensure business continuity, Huawei has established a business continuity management system in procurement, manufacturing, supply, global technical services, and other domains. This system covers end-to-end processes from suppliers to Huawei and on to our customers. As part of this system, we have developed and

established effective measures to ensure business continuity, including management organizations, emergency response and business continuity plans, training, drills, employee awareness efforts, and improvements to emergency response capabilities.

We also strive to avoid procuring from a single supplier and aim to select suppliers of key components that have multiple manufacturing sites. In terms of product design, we prepare alternative solutions for key components, in order to minimize impact on product supply and delivery if a supplier suspends delivery or provides substandard products. We will continue to regularly assess and audit our suppliers, assess and identify material supply risks as early as possible, and take preventative measures to minimize supply risks and ensure supply continuity. Preventative measures include component substitutions, solution redesigns, maintaining reserve inventory, and expanding production capacity.

Information security and IPR: While Huawei has adopted stringent information security measures to protect its IPR, it is impossible to completely prevent other companies from improperly using our information, patents, and licenses. Even when we are able to resort to litigation to protect our IPR, we may still suffer losses from improper usage.

Financial Risks

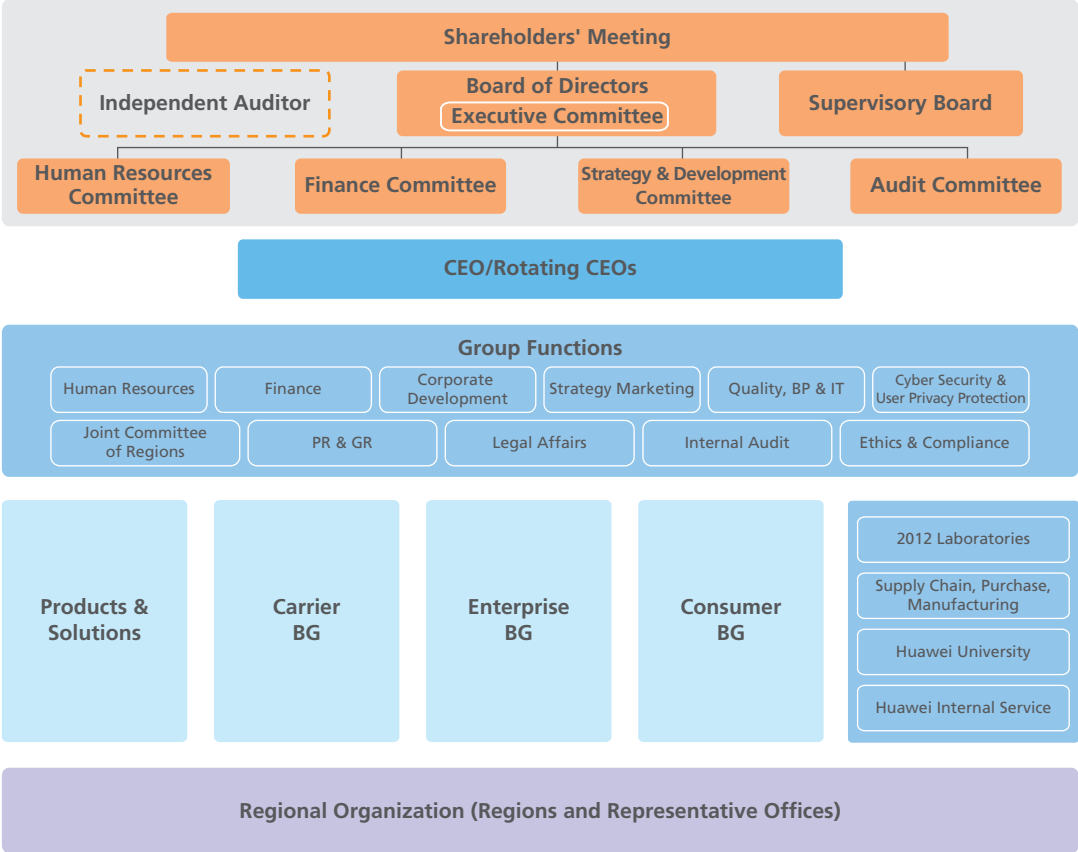
For further information on financial risks, see "Financial Risk Management" on pages 52 to 54 of this Annual Report.

Corporate Governance Report

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By staying customer-centric and inspiring dedication, we have sustained long-term growth by continuously improving our corporate governance structure, organizations, processes, and appraisal systems.



Shareholders

Huawei Investment & Holding Co., Ltd. (the "Company" or "Huawei") is a private company wholly owned by its employees. Huawei's shareholders are the Union of Huawei Investment & Holding Co., Ltd. (the "Union") and Mr. Ren Zhengfei.

Through the Union, the company implements an Employee Shareholding Scheme (the "Scheme"), which involved 81,144 employees as of December 31, 2016. The Scheme effectively aligns employee contributions with the company's long-term development, fostering Huawei's continued success.

Mr. Ren Zhengfei is the individual shareholder of the Company and also participates in the Scheme. As of December 31, 2016, Mr. Ren's investment accounts for nearly 1.4% of the Company's total share capital.

The Shareholders' Meeting and the Representatives' Commission

The Shareholders' Meeting is the highest authority within the Company, and comprises two shareholders: the Union and Mr. Ren Zhengfei.

The Company's major issues, which involve the decisions of the Union as a shareholder of the Company, shall be primarily reviewed and decided on by the Representatives' Commission (the "Commission"). The Commission consists of all representatives of shareholding employees ("Representatives") and exercises rights on behalf of all shareholding employees. In 2016, the Commission held two meetings, at which it reviewed and approved proposals on annual profit distribution, capital increases, and long-term incentives, and also voted in a new Supervisory Board.

The Representatives and Alternate Representatives are elected by the active shareholding employees with a term of five years. In the event that there is a vacancy in the body of Representatives, the Alternate Representatives shall take up the vacancy in a predetermined sequence.

At present, current members of the Commission are Ms. Sun Yafang, Mr. Guo Ping, Mr. Xu Zhijun, Mr. Hu Houkun, Mr. Ren Zhengfei, Mr. Xu Wenwei, Mr. Li Jie, Mr. Ding Yun, Ms. Meng Wanzhou, Ms. Chen Lifang, Mr. Wan Biao, Mr. Zhang Ping'an, Mr. Yu Chengdong, Mr. Liang Hua, Mr. Ren Shulu, Mr. Tian Feng, Mr. Deng Biao, Mr. Zhou Daiqi, Mr. Cai Liqun, Mr. Jiang Xisheng, Mr. Yin Xuquan, Mr. Yao Fuhai, Mr. Zha Jun, Mr. Li Yingtao, Ms. Ji Ping, Mr. Tao Jingwen, Mr. Zhang Shunmao, Mr. Ding Shaohua, Mr. Li Jin'ge, Mr. Wang Shengli, Mr. Wang Kexiang, Mr. Lv Ke, Mr. Yang Kaijun, Mr. Jiang Yafei, Ms. He Tingbo, Mr. Sun Ming, Mr. Wu Kunhong, Mr. Zhao Yong, Ms. Yan Weimin, Mr. Tang Xiaoming, Mr. Wang Jiading, Mr. Wei Chengmin, Mr. Xiong Lening, Mr. Li Shanlin, Mr. Xu Chi, Mr. Song Liuping, Mr. Zhou Hong, Ms. Chen Jun, Mr. Hui Chun, Mr. Peng Zhongyang, and Mr. Li Gang.

Board of Directors and Committees

The Board of Directors (BOD) is the decision-making body for corporate strategy and management. The BOD guides and oversees the overall business operations and makes decisions on significant issues regarding strategy and operations. The BOD has established the Human Resources Committee, the Finance Committee, the Strategy & Development Committee, and the Audit Committee, which operate as authorized by the BOD.

The main responsibilities of the BOD are to:

- Decide on the company's strategic directions; and approve and monitor the execution of the company's medium-to-long-term development plan.
- Provide advice and guidance to management regarding significant issues, including major crises and market changes.
- Review the company's business operations, organization, and processes; and approve major organizational restructurings, business transformations, and process transformations.
- Approve the company's major financial policies, financial arrangements, and business transactions.
- Approve the company's operating results, financial results, and financial statements.
- Establish the company's monitoring mechanisms and oversee their execution.
- Establish the company's governance structure and organize its optimization and deployment.
- Decide on the selection, appraisal, and compensation of the Chief Executive Officer; and approve the appointment and compensation of other members of senior management.
- Approve the corporate-level HR planning and major HR policies.

In 2016, the BOD held 11 meetings. At the meetings, the BOD reviewed and approved matters such as the company's medium-to-long-term development plan, annual business plan and budget, BOD committee operations, long-term incentives, annual profit distribution, capital increases, and financing.

Currently, the BOD has 17 members, who were elected by all Representatives.

- Chairwoman: Ms. Sun Yafang.
- Deputy Chairmen: Mr. Guo Ping, Mr. Xu Zhijun, Mr. Hu Houkun, and Mr. Ren Zhengfei.
- Executive Directors: Mr. Xu Wenwei, Mr. Li Jie, Mr. Ding Yun, and Ms. Meng Wanzhou.
- Directors: Ms. Chen Lifang, Mr. Wan Biao, Mr. Zhang Ping'an, Mr. Yu Chengdong, Mr. Li Yingtao, Mr. Li Jin'ge, Ms. He Tingbo, and Mr. Wang Shengli.

The BOD has established the Executive Committee, which acts as the executive body of the BOD while it is adjourned. Members of the Executive Committee include Mr. Guo Ping, Mr. Xu Zhijun, Mr. Hu Houkun, Mr. Xu Wenwei, Mr. Li Jie, Mr. Ding Yun, and Ms. Meng Wanzhou. In 2016, the Executive Committee held 12 meetings.

Human Resources Committee

The Human Resources Committee (HRC) manages and optimizes core corporate elements such as organization, talent, incentives, and culture. It operates under the BOD to develop, determine, and oversee the implementation of key policies and transformation initiatives relating to HR management. The committee aligns HR policies with the company's HR management philosophy and core concepts to ensure policy consistency. These policies also reflect the business characteristics and management models of departments at all levels to support business development.

The main responsibilities of the HRC are to:

- Manage HR initiatives for key managers and talent (including succession planning, deployment, appointments/removals, performance appraisals, compensation, and incentives).
- Set policies for incentives, benefits, the compensation structure, and job matching.
- Set policies for organizational development and optimization; and manage HR budgets and staffing for each budgetary unit.

- Set policies for and provide guidance on learning and development.
- Set policies for employee discipline and oversee disciplinary action for major violations.
- Set policies for and provide guidance on health and safety.
- Manage HR strategic planning and key HR transformation initiatives.

The HRC holds monthly meetings. Business and HR executives and experts are invited to attend as non-voting participants.

The committee met 12 times in 2016, and did the following:

- In accordance with the positioning and responsibilities set forth by the BOD, and with careful consideration of changes in the environment and business needs, developed strategic insights for the management of our organization, talent, and incentives.
- Formulated and implemented policies to facilitate the delegation of authority to field teams, and drove HQ to transition from a role of management and control, to one of support and service.
- Further optimized the company's talent management framework, clarified the company's view on talent, established an open talent structure, and gradually carried out talent planning activities in all departments to address challenges associated with attracting and retaining talent in new business environments.
- Further solidified the "Contribute & Share" incentive philosophy and its application, piloted differentiated compensation management, increased the attractiveness of compensation-related incentives, and sharpened the company's competitive edge in attracting and retaining talent.
- Reaffirmed our commitment to building a customer-centric culture, and explored potential HR policies to more effectively promote this cultural climate.

The HRC comprises 15 members, including BOD members, senior business executives, and senior HR experts.

- Chairman: Mr. Hu Houkun.
- Members: Mr. Guo Ping, Mr. Xu Zhijun, Mr. Xu Wenwei, Mr. Li Jie, Mr. Ding Yun, Ms. Meng Wanzhou, Mr. Liang Hua, Mr. Li Yingtao, Mr. Li Jin'ge, Mr. Zou Zhilei, Mr. Yan Lida, Mr. Yi Xiang, Mr. Wang Tao, and Mr. Ma Qingqing.

Finance Committee

The Finance Committee (FC) is the company's overall enterprise value integrator. It operates under the BOD to exercise macro-control over the company's business operations, investment activities, and enterprise risks, helping to strike a dynamic balance between opportunities and resources to facilitate the company's long-term sustainable growth.

The main responsibilities of the FC are to:

- Align resources with business needs based on the company's resources and resource acquisition capabilities.
- Set financial objectives for the growth and investment projects of the company and each responsibility center; and determine the standards, structure, and pace for resource investments.
- Measure the monetary value of key strategies, conduct forward-looking forecasts and analysis, and submit proposals to the BOD; and review the company's annual budget plan, approve the annual budget for each responsibility center, and ensure closed-loop management of corporate-level planning, budgeting, accounting, and assessment.
- Review the capital structure plan; and propose major financing activities, the asset structure, and profit distribution.
- Review the company's key financial policies, annual financial statements, and related information disclosures.
- Review capital investment and strategic cooperation projects, submit proposals to the BOD, and periodically assess the execution of such projects.

- Review the company's risk management framework, and provide advice on operational compliance and business continuity management.

The FC holds monthly meetings and convenes special sessions as necessary. In 2016, the FC held 12 regular meetings and one special session. Based on business needs and BOD's requirements, the FC reviewed such key items as the company's medium-to-long-term development plan, annual budget plan, operational management, capital investment projects, capital structure, enterprise risk management, and subsidiary and joint venture management. The FC then discussed and established financial policies and systems, reviewed and decided on key initiatives, and monitored their execution.

The FC comprises 15 members, including BOD members and various experts.

- Chairman: Mr. Guo Ping.
- Members: Mr. Xu Zhijun, Mr. Hu Houkun, Mr. Xu Wenwei, Mr. Li Jie, Mr. Ding Yun, Ms. Meng Wanzhou, Mr. Liang Hua, Mr. Yi Xiang, Mr. Zou Zhilei, Mr. Yan Lida, Mr. Yao Fuhai, Mr. Song Liuping, Mr. Peng Qiu'en, and Mr. Jiang Xisheng.

Strategy & Development Committee

The Strategy & Development Committee (SDC) develops, sets, and executes the company's strategic directions. The SDC gains insight into major industry and technological trends, and changes in customer needs; and identifies opportunities and paths for the company's development. Through macro-management of industrial investments, technologies, business models, and transformations, the SDC ensures that concerted efforts are made to sustain the company's growth.

The main responsibilities of the SDC are to:

- Manage the company's medium-to-long-term strategic planning, key initiatives, and major objectives of the year.
- Manage the company's brand strategy, brand architecture, and brand attributes, as well as publicity strategy and direction.

- Manage the company's strategy for strategic partnerships and alliances, as well as the selection of strategic partners and alliances.
- Manage the company's business portfolios and scope.
- Manage the company's pricing policies, commercial authorization principles, and actual pricing of key strategic products.
- Manage the company's medium-to-long-term technology development planning, industry development strategy, standards and patent strategy, and major technology investments.
- Manage the company's medium-to-long-term business transformation strategy, process and management system structures, quality policies, etc.
- Review the company's business portfolios to ensure investments are made in strategic domains.

The SDC held 12 regular meetings and one special session in 2016. In accordance with the positioning and responsibilities set forth by the BOD, the SDC pushed the enterprise business to further focus on five vertical industries and become an enabler of their digital transformation. The SDC also pushed the carrier business to expand total addressable market, focus on creating customer value, support customer success in video business, and enable the All Cloud and operations transformation of telecom carriers. The SDC also facilitated the consumer business in developing a global mid-to-high-end brand. On this basis, the SDC continued to strengthen strategy execution and resolutely invest in the future to support the company's long-term development.

The SDC comprises 15 members, including BOD members, senior business executives, and various senior experts.

- Chairman: Mr. Xu Zhijun.
- Members: Mr. Guo Ping, Mr. Hu Houkun, Mr. Xu Wenwei, Mr. Li Jie, Mr. Ding Yun, Ms. Meng Wanzhou, Mr. Yu Chengdong, Mr. Li Yingtao, Mr. Liang Hua, Mr. Zou Zhilei, Mr. Yan Lida, Mr. Wang Tao, Mr. Wang Shengqing, and Mr. Zhang Shunmao.

Audit Committee

The Audit Committee (AC) operates under the BOD to oversee internal controls, including the internal control system, internal and external audits, corporate processes, legal compliance, and adherence to the BCGs.

The main responsibilities of the AC are to:

- Approve the annual internal audit plan, and review its scope, required resources, and audit outputs.
- Approve corporate policies for internal controls; approve the corporate development plan for internal controls and the plan's key milestones; and regularly assess the company's internal control status.
- Evaluate the effectiveness of the ethics and compliance function, legal compliance, and adherence to corporate policies.
- Approve the selection of the external auditor, notify the BOD of any proposed change to the external auditor for approval, approve related budgets, and evaluate the work of the external auditor.
- Supervise the completeness, accuracy, and legal compliance of the company's financial statements; and review compliance with and application of accounting policies and all financial disclosures.
- Approve internal control Key Performance Indicators (KPIs), and instruct Global Process Owners (GPOs) and business executives to report internal control results.

The AC holds quarterly meetings and convenes special sessions as necessary. Business executives and various experts are invited to attend as non-voting participants.

The committee held six meetings in 2016. Focusing on topics such as risk management, the development of the internal control system, and anti-corruption, the committee:

- Reviewed and approved the company's annual internal audit plan and annual plan for internal controls over global processes.

- Received reports on Internal Control Maturity trends, SACAs (including internal controls over financial reporting), regions' internal control improvements, Business Process Architecture (BPA) and process management, and progress in resolving top internal control issues.
- Improved employee compliance with the BCGs through anti-corruption education and publicity of major audit findings and non-compliance cases.
- Arranged discussions between the committee Chairman and the external auditor on management improvement proposals.

The AC comprises 10 members, including Supervisory Board members, BOD members, and various experts.

- Chairman: Mr. Liang Hua.
- Members: Mr. Zhou Daiqi, Mr. Ren Shulu, Mr. Li Jianguo, Mr. Yin Xuquan, Mr. Tian Feng, Mr. Song Liuping, Mr. Yi Xiang, Mr. Li Jin'ge, and Mr. Hui Chun.

Supervisory Board

Pursuant to the requirements of the *Company Law of the People's Republic of China*, Huawei has established a Supervisory Board. The key responsibilities of the Supervisory Board include overseeing internal and external compliance, examining the company's financial and operational status, monitoring the responsibility fulfillment of BOD members and senior management, as well as the legitimacy of BOD operations. Members of the Supervisory Board attend BOD meetings as non-voting participants.

The Supervisory Board held six meetings in 2016. At the meetings, it evaluated the company's financial position, received reports from the company's supervisory functions and oversight-oriented boards of overseas subsidiaries, discussed the supervision of the company's legal compliance, and assessed the responsibility fulfillment of the members of the BOD and supervisory board in 2015. Throughout the year, members of the Supervisory Board attended 11 meetings of the BOD as non-voting

participants, supervising the matters for BOD decision making and the legitimacy of BOD operations.

Members of the Supervisory Board are elected by all Representatives.

- Chairman: Mr. Liang Hua.
- Executive members: Mr. Zhou Daiqi, Mr. Ren Shulu, and Mr. Yin Xuquan.
- Members: Mr. Song Liuping, Mr. Tian Feng, Mr. Yi Xiang, Mr. Yao Fuhai, Mr. Peng Zhongyang, and Mr. Li Jian.

The Supervisory Board has established the Executive Committee, which acts as authorized by the Supervisory Board. Members of the Executive Committee are Mr. Liang Hua, Mr. Zhou Daiqi, Mr. Ren Shulu, and Mr. Yin Xuquan. In 2016, the Executive Committee held two meetings.

Rotating CEOs

Huawei implements the rotating CEO system under the BOD's leadership. As the primary owner of the company's operations and crisis management during the tenure, the Rotating and Acting CEO is responsible for the company's survival and development.

The Rotating and Acting CEO convenes and chairs the company's EMT meetings. During routine management decision making, the Rotating and Acting CEO promptly notifies BOD and Supervisory Board members of responsibility fulfillment.

Three Deputy Chairmen take turns to act as the Rotating and Acting CEO for a tenure of six months. In 2016, the acting tenures for the three rotating CEOs are as follows:

- Mr. Guo Ping: October 1, 2015 – March 31, 2016.
- Mr. Hu Houkun: April 1, 2016 – September 30, 2016.
- Mr. Xu Zhijun: October 1, 2016 – March 31, 2017.

Members of the Board of Directors, the Supervisory Board, and the BOD Committees



From the left in the first row: Mr. Li Jin'ge, Mr. Guo Ping, Ms. Meng Wanzhou, Mr. Xu Zhijun, Mr. Ren Zhengfei, Mr. Hu Houkun, Ms. He Tingbo, and Mr. Li Jie

From the left in the second row: Ms. Chen Lifang, Mr. Wan Biao, Mr. Zhang Ping'an, Ms. Sun Yafang, Mr. Xu Wenwei, Mr. Yu Chengdong, Mr. Ding Yun, Mr. Li Yingtao, and Mr. Wang Shengli

Members of the Board of Directors

Ms. Sun Yafang

Ms. Sun joined Huawei in 1989, and had served as an engineer in the Marketing & Sales Dept, Director of the Training Center, President of the Procurement Dept, General Manager of the Wuhan Office, President of the Marketing & Sales Dept, Chair of the Human Resources Committee, Chair of the Business Transformation Executive Steering Committee (BT-ESC), Chair of the Strategy and Customer Standing Committee, and President of Huawei University. Since 1999, Ms. Sun has served as the Chairwoman of the Board.

Prior to joining Huawei, Ms. Sun worked as a technician at the state-owned Xinxiang Liaoyuan Radio Factory in 1982, a teacher at China Research Institute of Radio Wave Propagation in 1983, and an engineer at Beijing Research Institute of Information Technology in 1985.

Ms. Sun was born in 1955, and graduated in 1982 with a bachelor's degree from Chengdu University of Electronic Science and Technology.

Mr. Guo Ping

Born in 1966, Mr. Guo holds a master's degree from Huazhong University of Science and Technology. Mr. Guo joined Huawei in 1988 and has served as R&D Project Manager, General Manager of Supply Chain, Director of Huawei Executive Office, Chief Legal Officer, President of the Business Process & IT Mgmt Dept, President of the Corporate Development Dept, and Chairman and President of Huawei Device. Currently, Mr. Guo serves as Deputy Chairman of the Board, Rotating CEO, and Chairman of the FC.

Mr. Xu Zhijun (Eric Xu)

Born in 1967, Mr. Xu holds a doctorate degree from Nanjing University of Science & Technology. Mr. Xu joined Huawei in 1993 and has served as President of the Wireless Network Product Line, Chief Strategy & Marketing Officer, Chief Products & Solutions Officer, and Chairman of the Investment Review Board. Currently, Mr. Xu serves as Deputy Chairman of the Board, Rotating CEO, and Chairman of the SDC.

Mr. Hu Houkun (Ken Hu)

Born in 1968, Mr. Hu holds a bachelor's degree from Huazhong University of Science and Technology. Mr. Hu joined Huawei in 1990 and has served as President of the Marketing & Sales Dept in China, President of the Latin America Region, President of the Global Sales Dept, Chief Sales & Service Officer, Chief Strategy & Marketing Officer, Chairman of the Global Cyber Security and User Privacy Protection Committee (GSPC), Chairman of the BOD of Huawei USA, Deputy Chairman of the Board, Rotating CEO, and Chairman of the HRC.

Mr. Ren Zhengfei

Born on October 25, 1944 into a rural family where both parents were school teachers, Mr. Ren Zhengfei spent his primary and middle school years in a remote mountainous town in Guizhou Province. In 1963, he studied at the Chongqing Institute of Civil Engineering and Architecture. After graduation, he was employed in the civil engineering industry until 1974 when he joined the military's Engineering Corps as a soldier tasked to establish the Liao Yang Chemical Fiber Factory. Subsequently, Mr. Ren had taken positions as a Technician, an Engineer, and was lastly promoted as a Deputy Director, which was a professional role equivalent to a Deputy Regimental Chief, but without military rank. Because of his outstanding performance, Mr. Ren was invited to attend the National Science Conference in 1978 and the 12th National Congress of the Communist Party of China in 1982. Mr. Ren retired from the army in 1983 when the Chinese government disbanded the entire Engineering Corps. He then worked in the logistics service base of the Shenzhen South Sea Oil Corporation. As he was dissatisfied with his job, he decided to establish Huawei with a capital of CNY21,000 in 1987. He became the CEO of Huawei in 1988 and has held the title ever since.

Mr. Xu Wenwei (William Xu)

Born in 1963, Mr. Xu holds a master's degree from Southeast University. In 1991, Mr. Xu joined Huawei's Research & Development, taking charge of chips, general technology, and research. He has also served as President of the International Technical Sales & Marketing Dept, President of the European Area, Chief Strategy & Marketing Officer, Chief Sales & Service Officer, President of the Joint Committee of Regions, and CEO of the Enterprise BG. Mr. Xu is currently Huawei's Chief Strategy Marketing Officer.

Mr. Li Jie (Jason Li)

Born in 1967, Mr. Li holds a master's degree from Xi'an Jiaotong University. Mr. Li joined Huawei in 1992 and has served as Regional President, President of the Global Technical Service Dept, President of the Human Resource Mgmt Dept, and President of the Joint Committee of Regions.

Mr. Ding Yun (Ryan Ding)

Born in 1969, Mr. Ding holds a master's degree from Southeast University. Mr. Ding joined Huawei in 1996 and has served as Product Line President, President of the Global Solution Sales Dept, President of the Global Marketing Dept, CEO of the Carrier Network BG, and President of Products & Solutions.

Ms. Meng Wanzhou (Sabrina Meng)

Ms. Meng holds a master's degree from Huazhong University of Science and Technology. Ms. Meng joined Huawei in 1993 and has held the positions of Director of the International Accounting Dept, CFO of Huawei Hong Kong, and President of the Accounting Mgmt Dept. Ms. Meng now serves as CFO and Executive Director of Huawei.

In 2003, Ms. Meng established Huawei's globally unified finance organization, and developed the standardized and unified organizational structure, financial processes, financial systems, and IT platforms.

Since 2005, Ms. Meng has led the founding of five shared service centers around the world, and she also promoted the completion of the Global Payment Center in Shenzhen, China. These centers have boosted Huawei's accounting efficiency and monitoring quality, providing accounting services to sustain the company's rapid overseas expansion.

Since 2007, Ms. Meng has been in charge of the Integrated Financial Services (IFS) Transformation Program, an eight-year partnership between Huawei and IBM. This transformation program helped Huawei develop its data systems and rules for resource allocation, operating efficiency improvement, process optimization, and internal controls. IFS also took Huawei's financial management to a new level, creating new DNA for the company's sustainable growth.

Ms. Chen Lifang

Born in 1971, Ms. Chen graduated from Northwest University in China. Ms. Chen joined Huawei in 1995 and has served as Chief Representative of the Beijing Representative Office, Vice President of the International Marketing Dept, Deputy Director of the Domestic Marketing Management Office, President of the Public Affairs and Communications Dept, and Corporate Senior Vice President.

Mr. Wan Biao

Born in 1972, Mr. Wan holds a bachelor's degree from the University of Science and Technology of China. Mr. Wan joined Huawei in 1996 and has served as Director for the UMTS RAN System, President of the UMTS Product Line, President of the Wireless Network Product Line, CEO of Huawei Device, President of the Russia Region, and President of the Mobile Broadband and Home Device Product Line.

Mr. Zhang Ping'an (Alex Zhang)

Born in 1972, Mr. Zhang holds a master's degree from Zhejiang University. Mr. Zhang joined Huawei in 1996 and has served as Product Line President, Senior Vice President, Vice President of Strategy & Marketing, Regional Vice President, Vice President of the Global Technical Service Dept, CEO of Huawei Symantec, COO of the Enterprise BG, and President of the Carrier Software Business Unit. Currently, Mr. Zhang serves as President of the Software Product Line.

Mr. Yu Chengdong (Richard Yu)

Born in 1969, Mr. Yu holds a master's degree from Tsinghua University. Mr. Yu joined Huawei in 1993 and has served as 3G Product Director, Vice President of the Wireless Technical Sales Dept, President of the Wireless Network Product Line, President of the European Area, Chief Strategy & Marketing Officer, Chairman of Huawei Device, and CEO of the Consumer BG.

Mr. Li Yingtao

Born in 1969, Mr. Li holds a doctorate degree from Harbin Institute of Technology. Mr. Li joined Huawei in 1997 and has served as Chief of the Sweden Research Center, Director of the Product Mgmt Dept of Wireless Marketing, Director of the Research Dept of Products & Solutions, Director of the General Technology Office of Products & Solutions, President of the Central Research & Development Unit, President of the 2012 Laboratories, Director of the Integrated Technology Management Team, member of the HRC and SDC, and Secretary-General of the Thought Research Institute.

Mr. Li Jin'ge

Born in 1968, Mr. Li holds a bachelor's degree from Beijing University of Posts and Telecommunications. Mr. Li joined Huawei in 1992 and has served as Regional Vice President, Regional President, President of the Global Technical Sales Dept, President of the Sub-Saharan Area, member of the Joint Committee of Regions, member of the FC, and President of the Asia Pacific Area.

Ms. He Tingbo (Teresa He)

Born in 1969, Ms. He holds a master's degree from Beijing University of Posts and Telecommunications. She joined Huawei in 1996 and has since served as Chief ASIC Engineer, and R&D Director of HiSilicon. Currently, she serves as President of HiSilicon and Vice President of the 2012 Laboratories.

Mr. Wang Shengli (Victor Wang)

Born in 1963, Mr. Wang holds a master's degree from Wuhan University. Mr. Wang joined Huawei in 1997 and has served as General Manager of the Harbin Office, General Manager of the Thailand Representative Office, President of the Asia Pacific Region, and President of the Asia Pacific Area. Currently, Mr. Wang serves as President of the European Area, executive member of the Management Team of the Joint Committee of Regions, and Chairman of the Board of Huawei Technologies Coöperatief U.A.

Members of the Supervisory Board



From the left in the first row: Mr. Yin Xuquan, Mr. Zhou Daiqi, Mr. Liang Hua, and Mr. Ren Shulu

From the left in the second row: Mr. Peng Zhongyang, Mr. Yi Xiang, Mr. Song Liuping, Mr. Tian Feng, Mr. Yao Fuhai, and Mr. Li Jian

Mr. Liang Hua (Howard Liang)

Born in 1964, Mr. Liang holds a doctorate degree from Wuhan University of Technology. Mr. Liang joined Huawei in 1995 and has served as President of Supply Chain, CFO of Huawei, President of the Business Process & IT Mgmt Dept, President of the Global Technical Service Dept, Chief Supply Chain Officer, and Chairman of the Audit Committee.

Mr. Zhou Daiqi

Born in 1947, Mr. Zhou graduated from Xidian University. Mr. Zhou joined Huawei in 1994 and has served as ATM Product Manager, Chief Engineer and General Manager of the Multimedia Dept, Director of the Hardware Dept, Chief of the Xi'an Research Center, and Director of the HR Branch of Products & Solutions. Currently, Mr. Zhou serves as Chief Ethics & Compliance Officer, Director of the Corporate Committee of Ethics and Compliance, and member of the Audit Committee.

Mr. Ren Shulu (Steven Ren)

Born in 1956, Mr. Ren holds a bachelor's degree from Yunnan University. Mr. Ren joined Huawei in 1992 and has served as President of Shenzhen Smartcom Business Co., Limited, Chairman of the Capital Construction Investment Management Committee, and Chairman of the Internal Service Management Committee. Currently, Mr. Ren serves as Huawei's Chief Logistics Officer.

Mr. Yin Xuquan

Born in 1964, Mr. Yin holds a master's degree from Xi'an Jiaotong University. Mr. Yin joined Huawei in 1995 and has served as President of the Southern Africa Region, Vice President of the Turnkey Business Dept, President of the Optical Network Product Line, HR Director of Sales & Services, and Vice President of the Procurement Qualification Mgmt Dept.

Mr. Song Liuping

Born in 1966, Mr. Song completed his postdoctoral research at Beijing Institute of Technology. Mr. Song joined Huawei in 1996 and has served successively as Manager of the Product Strategy Planning Dept, Director of the IPR Dept, Director of the External Cooperation Dept, PSST member, President of the Legal Affairs Dept, Chief Legal Officer, President of the Patent Review Board, Director of the Trade and Customs Compliance Committee, member of the Disciplinary and Supervisory Sub-committee of the HRC, and member of the AC and FC.

Mr. Tian Feng

Born in 1969, Mr. Tian holds a bachelor's degree from Xidian University. Mr. Tian joined Huawei in 1995 and has served as EVP of the Middle East and Northern Africa Area, President of the Middle East Region, President of the China Region, CEO of Huawei Agissson, Vice President (acting) of the Human Resource Mgmt Dept, EVP of Huawei University, Director of the Institute of Education of Huawei University, Director of the Disciplinary and Supervisory Sub-committee of the HRC, and executive member of the Management Team of the Joint Committee of Regions.

Mr. Yi Xiang (Steven Yi)

Born in 1975, Mr. Yi holds a bachelor's degree from Wuhan University. Mr. Yi joined Huawei in 1998 and has served as General Manager of the Pakistan Representative Office, President of the Middle East Region, President of the Middle East and Africa Area, President of the Sales & Delivery Mgmt Dept, and Deputy CFO of Huawei. Currently, Mr. Yi serves as President of the Regions Mgmt Dept, and member of the FC and HRC.

Mr. Yao Fuhai

Born in 1968, Mr. Yao holds a bachelor's degree from the University of Electronic Science and Technology of China. Mr. Yao joined Huawei in 1997 and has served as Director of the Pricing Center, Vice President of the Business Process & IT Mgmt Dept, Vice President of the Strategy Cooperation Dept, Vice President of the Global Technical Sales Dept, and President of the Global Technical Service Dept. Currently, Mr. Yao serves as President of the Procurement Qualification Mgmt Dept, Director of the Group Procurement Management Committee, and member of the FC.

Mr. Peng Zhongyang

Born in 1968, Mr. Peng holds a bachelor's degree from Huazhong University of Science and Technology. Mr. Peng joined Huawei in 1997 and has served as Technical Service Engineer of the South China Area, Transmission Project Manager and Development Engineer of the Russia Representative Office, General Manager of the Yemen Representative Office, Assistant to President of the Middle East and Northern Africa Region, and President of the Northern Africa Region. Currently, Mr. Peng serves as President of the China Region.

Mr. Li Jian

Born in 1973, Mr. Li holds a master's degree from Xidian University. Mr. Li joined Huawei in 2001 and has served as General Manager of the Nigeria Representative Office, General Manager of the Ghana Representative Office, President of the Western Africa Region, Special Assistant to President of Sales & Services, President of the Accounts & Regions Business Support Dept, President of the CEE & Nordic European Region, member of the HRC, and member of the Management Team of the Joint Committee of Regions. Currently, Mr. Li serves as Vice President of the Joint Committee of Regions, executive member of the Management Team of the Joint Committee of Regions, Global Process Owner of LTC, and President of the Latin America Area.

Committee Members

Only committee members not listed in "Members of the Board of Directors" or "Members of the Supervisory Board" are included in this section. (The order is based on the number of strokes needed to complete the Chinese character that corresponds to the member's surname.)

Mr. Ma Qingqing

Born in 1973, Mr. Ma holds a master's degree from Northwestern Polytechnical University. Mr. Ma joined Huawei in 1997 and successively held the positions of Deputy General Manager of the Research Plan Office, Marketing Director of the Latin America Region, and HR Director of the Strategy & Marketing Dept. Currently, Mr. Ma serves as Director of the Human Resource Dept of the Consumer BG and member of the HRC.

Mr. Wang Shengqing (Ken Wang)

Born in 1972, Mr. Wang holds a master's degree from Huazhong University of Science and Technology. Mr. Wang joined Huawei in 1997 and has served as Deputy Director of the Mobile Technical Sales Dept in China, Deputy Director (acting) of the Technical Sales Dept in the Asia Pacific Area, Deputy General Manager of the Indonesia Representative Office, Director of the Telefonica Account Dept, and President of the Marketing & Solution Sales Dept of the Carrier BG.

Mr. Jiang Xisheng

Born in 1966, Mr. Jiang holds a bachelor's degree from Xidian University. Mr. Jiang joined Huawei in 1989 and has served as Vice President of the Marketing & Sales Dept, General Manager of the General Procurement Dept, Vice President and CFO of Huawei Electric, Director of the Investment Mgmt Dept, and Vice President of Finance. Currently, Mr. Jiang serves as Chief Secretary of the Board of Directors and member of the FC.

Mr. Li Jianguo

Born in 1964, Mr. Li holds a master's degree from Huazhong University of Science and Technology. Mr. Li joined Huawei in 1993 and has served as an R&D engineer, Deputy Manager of the Development and Pilot (D&P) Dept, Manager of the Manufacturing Dept, Production Director/Procurement Director/Executive Vice President of Huawei Electric, Director of the Assembly Business Dept, Deputy Director of the Supply Chain Mgmt Dept, Director of the Board Design Engineering Dept under the Central Research & Development Unit (CRDU), Director of the PDT/TDT Leaders Mgmt Dept under the CRDU, President of the Manufacturing SBG, and executive member of Huawei's Supervisory Board. Currently, Mr. Li serves as Chairman of the Board of Directors of Huawei Machine, President of the Manufacturing Dept, and member of the AC.

Mr. Zou Zhilei

Born in 1971, Mr. Zou holds a bachelor's degree from Hefei University of Technology. Mr. Zou joined Huawei in 1998 and has served as General Manager of the Xi'an Representative Office, General Manager of the Guangzhou Representative Office, President of the Northern Africa Region, President of the Global Sales Dept under the Enterprise BG, and President of the Global Sales and Service Dept under the Enterprise BG. Currently, Mr. Zou serves as President of the Carrier BG, and member of the FC, SDC, and HRC.

Mr. Wang Tao (David Wang)

Born in 1972, Mr. Wang holds a master's degree from Xi'an Jiaotong University. Mr. Wang joined Huawei in 1997 and has served as Wireless R&D Manager, Director of the Packet Core Network Product Line, Director of the Technical Sales Dept of the European Region, Managing Director of Huawei Italy and Switzerland, President of the Wireless Network Business Unit, President of the Wireless Network Product Line, and President of the Network Product Line.

Mr. Zhang Shunmao (Patrick Zhang)

Born in 1966, Mr. Zhang holds a master's degree from Fudan University. Mr. Zhang joined Huawei in 1992 and has served as Director of the Switch Business Dept of the Central Research Dept, Vice President of the Technical Support Dept, Corporate Senior Vice President, EVP of the Marketing Dept, President of the Fixed Network Product Line, President of the Wireless Network Product Line, EVP of the Latin America Area, President of the Northern Latin America Region, and President of the Enterprise Business Marketing & Solutions Dept. Currently, Mr. Zhang serves as President of the Marketing and Solution Dept under Products and Solutions.

Mr. Yan Lida

Born in 1970, Mr. Yan holds a bachelor's degree from Tsinghua University. Mr. Yan joined Huawei in 1997 and has served as Vice President of the European Region, General Manager of the Japan Representative Office, and President of the East Asia Region. Currently, Mr. Yan serves as President of the Enterprise BG, and member of the FC, SDC, and HRC.

Mr. Peng Qiu'en (Ted Peng)

Born in 1971, Mr. Peng holds a master's degree from Zhongnan University of Economics and Law. Mr. Peng joined Huawei in 1997 and has served as Director of the Budget & Cost Mgmt Section, Director of the Financial Planning & Analysis Dept, Vice President of the Sales & Delivery Finance Mgmt Dept, CFO of the India Region, and President of the Operation Mgmt Dept. Currently, Mr. Peng serves as CFO of the Consumer BG and member of the FC.

Mr. Hui Chun (Clark Hui)

Born in 1963, Mr. Hui holds a master's degree from Huazhong University of Science and Technology. Mr. Hui joined Huawei in 1989 and has served as President of the Procurement Qualification Mgmt Dept, Vice President of Finance & President of the Business Control Dept, and Vice President of the Business Process & IT Mgmt Dept. Currently, Mr. Hui serves as Director of the Engineering Inspection Dept, member of the Audit Committee, and Acting Deputy Director of the Executive Steering Committee (ESC).

Independent Auditor

An independent auditor is responsible for auditing a company's annual financial statements. In accordance with applicable accounting standards and audit procedures, the independent auditor expresses an opinion as to whether the financial statements are true and fair.

The scope of the financial audit and the annual audit results are subject to review by the Audit Committee. Any relationship or service that may potentially affect the objectivity and independence of the independent auditor can be discussed with the Audit Committee. The independent auditor may discuss any issues identified or any difficulties encountered during the course of the financial audits with the Audit Committee.

KPMG has been Huawei's independent auditor since 2000.

Business Structure

The company has established a business structure that focuses on three dimensions: customers, products, and regions. All organizations jointly create value for customers, and are responsible for the company's financial results, market competitiveness, and customer satisfaction.

The Carrier BG and the Enterprise BG manage and support solution marketing, sales, and services that target carrier customers and enterprise/industry customers respectively. The two BGs provide innovative, differentiated, and advanced solutions based on the business characteristics and operational patterns of different customers while continuously improving the company's industry competitiveness and customer satisfaction.

The Consumer BG focuses on serving device consumers and deals with all aspects of the consumer domain. This BG is responsible for business performance, risk controls, market competitiveness, and customer satisfaction in the consumer business.

Products & Solutions is an organization that provides integrated ICT solutions to carriers and enterprise/industry customers. In addition to product planning, development, and delivery, this organization is also responsible for developing product competitiveness in order to deliver a better user experience and support the company's business success.

Regional organizations are the company's regional operations centers. They are responsible for developing and effectively leveraging regional resources and capabilities, and also for the execution of corporate strategy in their regions. The company has continuously

optimized regional organizations and accelerated the delegation of authority to field offices. Command and on-site decision making authority has gradually been delegated to representative offices. While establishing closer partnerships with customers and helping them achieve business success, regional organizations will continue to support the company in achieving profitable and sustainable growth.

Group Functions provide business support, services, and supervision. They are positioned to offer accurate, timely, and effective services to field offices and strengthen supervision while delegating sufficient authority to them.

Improving the Management System

Our global management system enables us to promote our corporate culture company-wide and effectively manage our businesses. Our aim is to:

- Remain customer-centric and contribute to customer success.
- Control risks and ensure business continuity.
- Adopt CSR to promote sustainable social development.

Huawei's management system is based on ISO 9001 (an international standard for quality management systems) and TL 9000 (an international standard for quality management systems in the telecom industry). Empowered by continued evolution, Huawei frequently conducts self-assessments and makes improvements to meet the requirements and expectations of customers and other stakeholders.

In the past year, we:

- Fulfilled the requirements of our management system in accordance with our corporate strategy; and continued to develop our customer-oriented management system. Based on integrated business processes, the system effectively ensured business development and continuous improvement.
- Consolidated excellent business practices to develop an end-to-end process system composed of operating, enabling, and supporting processes. The process system incorporated requirements for quality, internal controls, cyber security, information security, business continuity, Environment, Health, and Safety (EHS), CSR, and sustainability into multiple business domains, including marketing, R&D, delivery and service,

supply chain, and procurement.

- Optimized our business systems through leadership development, total employee participation, Six Sigma, quality measurements, and internal and external assessments and audits.



At Huawei, many experienced technicians have exhibited a spirit of craftsmanship by staying focused, diligently pursuing new knowledge, and always endeavoring to do still better. They are stationed onsite long-term, are dedicated to continuous improvement, and take an attitude of doing things right the first time and never letting any problem slide. By working hand-in-hand with machines, these technicians have supported Huawei in its efforts to meet the Six Sigma quality standards and guarantee the high quality of the company's products and services.

To ensure that Huawei products and services are effective and reliable, our management system has been certified by multiple independent third parties, including ISO 9001/TL 9000 (quality), ISO 14001 (environment), OHSAS 18001 (occupational health and safety), ISO 27001 (information security), and ISO 28000 (supply chain security), as well as SA 8000 (CSR) and ISO/TS 16949 (automotive-sector quality) in the device domain.

Our company has passed comprehensive audits, as well as regular assessments and reviews conducted by 30 of the world's top 50 carriers, and by major enterprise/industry customers. These audits and assessments covered a wide range of items, including financial robustness, quality management, delivery, supply chain management, knowledge management, project management, information and cyber security, risk management, EHS, CSR, sustainability, and business continuity management. Huawei has obtained full and extensive recognition from its customers in these key domains, as evidenced by their choice of Huawei as a strategic partner.

We have continued to entrust professional third-party market survey companies to conduct customer satisfaction surveys among our three major customer groups worldwide: carriers, enterprise/industry customers, and consumers. Based on customer feedback, we identified and consolidated key issues for improvements, and managed all issues in a closed loop to continuously improve customer satisfaction.

From Strategy Development to Execution

Beginning from strategic issues, our Develop Strategy to Execute (DSTE) management system enables us to identify future uncertainties and develop strategies for the company and business units based on our insights into the environment, the industry, customers, and technological development. These strategies serve as drivers for annual business planning, budgeting, and performance appraisals. This management system ensures that the strategic objectives of the company and business units are incorporated

into annual plans and budgets, so that all business units are well coordinated to ensure the effective management of corporate investments and help the company achieve its strategic and business objectives.

During the company's annual business planning and budgeting, we stressed the role of budgets and HR in supporting strategies and guided our organization to invest in medium-to-long-term opportunities and capability development. We used the Balanced Scorecard as a tool to manage our organizational performance, break down our corporate strategy, and turn the company's strategic objectives into organizational performance objectives of departments at all levels. We further strengthened our internal and external strategic communication to obtain more effective feedback and support.

Management Transformation

In 2016, our management transformation continued to focus on efficiency improvements. With the company's rapid growth, we also began to consider how to transition from a centralized decision-making model to a demand-driven model that allows people closest to the action to call for support. Looking ahead to future challenges, we have made it clear that the company is committed to delivering a Real-time, On-demand, All-online, DIY, and Social (ROADS) user experience and to improving internal efficiency and financial results. We are also working to make it easier and more secure for customers and partners to do business with Huawei, so as to improve customer satisfaction.

In 2016:

- We further implemented IPD+, a major business process transformation based on market innovation. The company maximized per-capita earnings through ongoing improvements to the competitiveness of portfolio planning and the financial results of product investments. The new process made customers' transactions with Huawei simpler, shortened the time-to-market perceivable to customers, and improved operating efficiency.

We continuously improved the quality and efficiency of solution delivery. We developed a cloud service business management system to support the execution of cloud service business strategy. We also developed core software capabilities to effectively support the shift of value towards software and the growth of revenue from software. As part of the company's open source and industry development strategies, we leveraged open source and developer ecosystems to accelerate innovation and promote shared success.

- We continuously promoted CRM+, a customer-facing business process transformation that follows dual paths of streamlining major business processes and improving business capabilities. We further developed our capabilities in marketing, sales, services, and channels.
 - We implemented the Lead to Cash (LTC) process globally to connect virtually all transaction channels. In addition, the "fast connectivity" solution developed by the German and Philippines representative offices enabled them to support field elite teams through local digital operating platforms.
 - The Integrated Service Delivery Platform (ISDP) reached all representative offices globally, with essentially full connectivity of delivery processes, and significant improvements to delivery efficiency and quality.
 - The Market to Lead (MTL) process helped us continuously improve marketing capabilities and define market segments. We established the Marketing Execution Team (MET) to support the expansion of total addressable market.
 - By setting up an operational organization and optimizing processes, the Manage Client Relationship (MCR) process improved customer satisfaction and the operating capabilities of Customer Centric 3 (CC3), a project-based core team that supports the work of team leaders and the attainment of BG strategic objectives.
- We implemented ISC+, a transformation that focused on three major targets: improving customer experience and field office efficiency, shifting towards a digital supply chain, and developing a light-weight IT architecture. We established an online customer collaboration platform to improve customer experience, achieving true customer-specific customization. The platform has enabled model-based product selection, changing models into application cases that are differentiated with merchandise codes. This has streamlined the transaction flow at the customer interface, and enabled the company's integrated internal operations to concentrate on product cases, expansion packs, and spare parts. In relation to shifting towards a digital supply chain, we established a unified data platform, separating business services from data services. We also established a light-weight IT architecture to make business design more agile. Through flexible packaging of services, we are able to rapidly launch applications to users, so as to provide elite teams with a digital toolkit.
- Targeted integration enabled representative offices to gradually transition from a mindset of "having to change" to one of "wanting to change". The representative offices proactively planned and implemented a transformation that focused on making it easier, faster, and more secure for customers to do business with Huawei, on improving internal efficiency and financial results, and on delivering satisfactory financial reports. Company HQ shifted from a role of management and control to one of support and service. Representative offices preliminarily established an integration and operations management system, laying the foundation for future elite team operations.

Organizational Capabilities

We continued to optimize our organizational structures and operating models, and streamlined organizations and increased efficiency. Externally, we embraced change and supported new capability development. Internally, we employed a variety of means to invigorate the organization and prevent it from becoming rigid, overstaffed, or complacent.

- In response to strategic requirements to transform towards integrated ICT solutions and offer new services like cloud, we implemented bottom-up regional pilot projects to explore viable organizational forms and operating models for our businesses.
- We streamlined the organization, clarified the boundaries of accountabilities, delegated more authority to field offices, and gradually changed the role of HQ from management and control to support and service. With all of our efforts directed to field operations and business success, we continuously improved our operating efficiency and organizational effectiveness.
- As part of pilot programs aimed at regional organization optimization, we delegated authority to field offices to match their responsibilities. This made process operations within field offices simpler and more efficient. We further strengthened project-centered organizational operations, enabling team leaders to assume responsibility for project operations, employee motivation, and organization building. We also developed an oversight system to ensure proper authorization, oversight, resource allocation, and information availability to tangibly achieve the strategic objective of supporting elite team operations through a large platform.
- We established the Strategic Reserve and its Steering Committee, and further developed our Centers of Expertise (COEs). By updating skill sets and developing talent, the Strategic Reserve invigorated our organizational structure and motivated our experts and managers, achieving a structural change to our organizational capabilities and supporting the attainment of our strategic objectives.

Improving the Internal Control System

Huawei continued to design and implement an internal control system based on its organizational structure and operating model. The internal control framework and its management system apply to all business and financial processes of the company and its subsidiaries and business units. The internal control system is based on the five components of the COSO framework: Control Environment, Risk Assessment, Control Activities, Information

& Communication, and Monitoring. It also covers internal controls of financial statements to ensure their truthfulness, integrity, and accuracy.

Control Environment

A control environment is the foundation of an internal control system. Huawei is committed to a corporate culture of integrity, business ethics, and compliance with laws and regulations. Huawei has issued the *BCGs* to identify acceptable business conduct. The *BCGs* must be observed by all employees, including senior executives. Regular training programs are offered, and all employees are requested to sign the *BCGs* to ensure that the *BCGs* have been read, understood, and observed.

Huawei has implemented a mature governance structure, with clearly defined authorization and accountability mechanisms. The governance structure comprises the BOD, its committees, group functions, and multi-level management teams.

Huawei clearly defines the roles and responsibilities of its organizations to ensure the effective separation of rights and responsibilities. The CFO of Huawei is in charge of internal controls. The business control department reports to the CFO for any possible defects and improvements already made in terms of internal controls, and assists the CFO in building the internal control environment. The internal audit department independently monitors and assesses the status of internal controls for all business operations.

Risk Assessment

Huawei has a department dedicated to internal controls and risk management to regularly assess risks to the company's global business processes. This department identifies, manages, and monitors significant risks, forecasts potential risks caused by changes to the internal and external environments, and submits risk management strategies along with risk mitigation measures for decision making. All process owners are responsible for identifying, assessing, and managing business risks and taking necessary internal control measures. Huawei has instituted a mechanism for improving internal controls and risk controls to efficiently manage critical risks.

Control Activities

Huawei has established the Global Process Management System and the Business Transformation Management System, released the global BPA, and appointed GPOs in line with the BPA. Responsible for building processes and internal controls, GPOs:

- Identify key control points and the Separation of Duties Matrix for each process, and apply these to all regional offices, subsidiaries, and business units.
- Conduct monthly compliance tests on key control points and issue test reports to ensure continuous and effective monitoring of internal controls.
- Optimize processes and internal controls based on business pain points and key requirements for financial statements. The aim is to improve operating efficiency and financial results, ensure operational compliance and the accuracy and reliability of financial statements, and help achieve business objectives.
- Perform SACAs to assess the overall process design and the effectiveness of process execution by each business unit, and then report the results to the AC.

Information & Communication

Huawei has developed multi-dimensional information and communication channels to ensure the timely acquisition of external information from customers, suppliers, and other parties. It has also created formal channels for transferring internal information, and offered an online space, *Xinsheng Community*, for employees to freely communicate their thoughts and ideas. Corporate management holds regular meetings with departments at all levels to effectively communicate management orientation to employees and ensure effective implementation of management decisions.

All business policies and processes are available on the company's Intranet. Managers and process owners regularly organize training programs on business processes and internal controls to ensure that up-to-date information is made available to all employees. The company has established a mechanism for process owners at all levels to regularly communicate with each other, review the execution of internal controls, follow up on internal control issues, and implement improvement plans.

Monitoring

Huawei has established an internal complaint channel, an investigation mechanism, an anti-corruption mechanism, and an accountability system. The *Agreement on Honesty and Integrity* that Huawei has signed with its suppliers clearly stipulates that suppliers may report improper conduct by Huawei employees through the channels stipulated in the *Agreement* to assist the company in monitoring the integrity of its employees. The internal audit department independently assesses the overall status of the company's internal controls, investigates any suspected violations of the *BCGs*, and reports the audit and investigation results to the AC and senior management.

Huawei has also implemented a mechanism for internal control appraisals of GPOs and regional managers, holding them accountable and pursuing impeachment when and where necessary. The AC and the CFO regularly review the company's internal control status, and receive reports on action plans for improving internal controls, if necessary, and on plan execution progress. Both have the authority to request the relevant GPOs or business executives to explain their internal control issues and take corrective actions. The AC and the CFO may also need to submit proposals to the HRC for disciplinary action or impeachment.

Sustainable Development

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Huawei "Seeds for the Future" program cultivates local ICT talent

Introduction

Huawei is a leading global ICT solutions provider committed to enabling the future information society and building a Better Connected World.

Our approach to sustainability management remains customer-centric, and we always aim to improve our operating efficiency and competitiveness in a responsible and sustainable way. In collaboration with all sectors of society, we embrace new opportunities brought about by sustainable development, to promote socioeconomic growth and improve the environment in which we live. As we seek business growth, we place great emphasis on fulfilling our social responsibility as a strong contributor and responsible corporate citizen in local communities in which we operate. We prioritize sustainable operations, provide customers with sustainable products, solutions, and services, and remain committed to driving social sustainability.

- Vision:** To bridge the digital divide, and promote the harmonious and sustainable development of the economy, the environment, and society
- Mission:** To establish an excellent sustainability management system, operate with integrity and compliance, continuously improve communication with stakeholders, promote a harmonious business ecosystem, ensure the sustainable development of the company, and provide benefits to our customers and society
- Strategy:** Bridging the Digital Divide, Supporting Network Stability and Security and Protecting Privacy, Promoting Environmental Protection, and Building a Healthy Ecosystem



Huawei Signs Compact for Responsive and Responsible Leadership

At the 47th Annual Meeting of the World Economic Forum, Huawei Chairwoman Ms. Sun Yafang and executives from over 100 leading global enterprises in attendance signed *The Compact for Responsive and Responsible Leadership*, committed to long-term sustainable global investment and growth. The Compact emphasizes that corporate objectives must be aligned with the long-term goals of society. Enterprises should not sacrifice long-term economic prosperity and the welfare of society for the sake of short-term financial gains.

Built on its own business strategy, Huawei exchanges views widely with internal and external stakeholders, and has established a sustainable development strategy. There is a common spirit behind this sustainable development strategy and the company's strategy as a whole. The strategy is closely aligned with the Compact, reflecting our commitment to promoting the long-term, robust, and harmonious development of the economy, the environment, and society.

Sustainability Strategy

Overview of Huawei's Sustainability Initiatives in 2016

 <p>Bridging the Digital Divide</p>	<ul style="list-style-type: none"> Provides people across all geographic areas with easy access to voice communications services Ensures ubiquitous broadband for all and promotes future-oriented ICT technologies to address global challenges Establishes training centers and launches joint teaching initiatives to develop local talent, transfer knowledge, and increase people's engagement in the digital society Provides customized ICT applications and solutions that meet individual, corporate, and regional needs to improve economic performance, quality of life, productivity, and competitiveness 	 <p>Bridging the Digital Divide</p>	<ul style="list-style-type: none"> Provided mobile signals to connect the Everest South Base Camp with the rest of the world Deployed a 100G submarine network in the Arctic Circle to meet communications needs in Greenland Delivered a Smart Healthcare Project in Kenya to benefit 200,000 people Rolled out the Seeds for the Future Program in 96 countries and regions to promote ICT development and a prosperous industry
 <p>Supporting Network Stability and Security and Protecting Privacy</p>	<ul style="list-style-type: none"> Prioritizes network stability and security over commercial interests, especially at critical times (e.g., earthquakes, tsunamis, and other natural disasters and emergencies) Enhances the robustness and defense of products through continuous innovation and full consideration of business continuity and network resilience; supports independent testing, verification, and certification of products to provide internationally recognized security assurance to customers; works and communicates proactively with stakeholders in an open and transparent manner; complies with applicable security standards, laws and regulations Emphasizes the protection of privacy; works with partners on privacy protection; adopts recognized methodologies and practices; integrates privacy protection into our day-to-day business activities 	 <p>Supporting Network Stability and Security and Protecting Privacy</p>	<ul style="list-style-type: none"> Supported the stability of over 1,500 customer networks Guaranteed network stability during approximately 200 major events and natural disasters worldwide Released the fourth cyber security white paper that addresses cyber security in the global supply chain of the ICT industry Obtained the ISO 28000 certification for all distribution centers of global supply centers
 <p>Promoting Environmental Protection</p>	<ul style="list-style-type: none"> Incorporates green concepts into product planning, design, R&D, manufacturing, delivery, and O&M; continuously innovates technology to improve resource utilization efficiency and provide leading energy-conserving and environmentally friendly products and solutions to customers Increases resource utilization in offices, production facilities, logistics centers, and labs to reduce waste and greenhouse gas emissions and build Huawei into a role model for environmentally friendly operations Continuously ensures the environmental compliance of Huawei's products and our partners' operations; promotes energy conservation and emissions reduction across our supply chain and improves Huawei's competitiveness in the industry ecosystem Continuously promotes green and integrated ICT solutions to support energy conservation and emissions reduction in various industries; and proactively drives an energy-saving, environmentally friendly, and low-carbon society 	 <p>Promoting Environmental Protection</p>	<ul style="list-style-type: none"> Increased the energy efficiency of major products by 28% on average, an increase that is among the highest in the industry Received the UL110 highest-level green certification for 8 mobile phones Reduced carbon emissions per unit of sales revenue by 18% in 2016 compared with the benchmark year Used green packaging in 60% of products to reduce the use of wood product by over 110,000 m³
 <p>Building a Healthy Ecosystem</p>	<ul style="list-style-type: none"> Provides employees with varied career paths based on their particular skill sets to help them realize their individual value Makes significant contributions in all communities and countries in which we operate Abides by strict ethical business practices; opposes corruption, dumping, and monopoly; operates with integrity and in compliance with applicable laws and regulations Focuses on sustainability risk management in our own operational activities and services, gradually becomes the sustainable development leader in the industry and around the world Works closely with suppliers to develop standards and benchmarks; shifts our focus on supplier risk management to efficiency management, leading sustainable development in the industry ecosystem 	 <p>Building a Healthy Ecosystem</p>	<ul style="list-style-type: none"> Invested CNY11.2 billion in employee benefits Carried out EHS maturity evaluations in all representative offices worldwide Led the development of the IPC-1401 Supply Chain Social Responsibility Management System Guidance Launched approximately 200 community support programs in 70 countries and regions

Sustainable Operations

Operating with Integrity and Compliance

Huawei is a truly global company. This means we comply with all applicable national and regional laws and regulations, operate ethically, and prohibit all forms of corruption and bribery. We manage compliance and fulfill responsibilities in accordance with applicable laws and principles. Compliance with laws, regulations, and ethical standards is our primary management principle. We have integrated compliance requirements into corporate policies, systems, and processes, and promote a culture of integrity across the company.



Operational Compliance White Papers of Huawei Subsidiaries outside China

In 2016, our subsidiaries outside China prepared and published operational compliance white papers as part of our efforts to improve local subsidiary compliance systems. In order to guide the operational compliance of subsidiaries, these white papers serve as guidelines on compliance management and operations, and provide definitions and details concerning the following items:

- Compliance management policies and objectives;
- Compliance management organizations and their roles and responsibilities;
- Operational compliance mechanism; and
- Strategies for managing critical compliance risks

In 2016, Huawei Russia, Huawei UK, and over 100 other subsidiaries released their operational compliance white papers.

"We uphold high standards of integrity and corporate governance in Russia, and carry out business in a legal, ethical, and honest manner. Responsible business conduct in all aspects is critical for achieving long-term business success and gaining the trust and confidence of our stakeholders, including the government, customers, business partners, and employees."

— CEO, Huawei Russia

Caring for Employees

Inspiring dedication is one of our core values, and it manifests itself in many ways. We appraise employees and select managers according to their contributions and the scope of their responsibilities. We offer our staff a global platform for development and communication, giving young people the opportunity to assume greater responsibilities and accelerate their careers. In this way, we have enabled 180,000 employees to yield ample returns for their individual efforts, and gain memorable life experience.

With a presence in more than 170 countries and regions, Huawei gives employees fair access to work as well as to learning and promotion opportunities – irrespective of nationality, gender, age, race, or religion. In countries outside China, we give priority to hiring local employees, with a localization rate of over 71% in 2016. We are also committed to creating an efficient, relaxing, and caring workplace, and providing a comprehensive, professional healthcare service and safety assurance system.



iHealth Centers

Employee health and safety is always our top priority, and we have established a comprehensive employee benefit system. In 2016, we built multiple iHealth Centers where leading healthcare service providers offer our staff convenient access to specialized basic services.

In April 2016, we launched an iHealth Center in our Beijing Research Center, on a pilot basis, to provide the following services:

- Consulting: customized one-on-one health guidance, disease tracking, and intervention;
- Emergency treatment: providing first aid for emergency cases before the patient is taken to hospital, and offering first aid training and drills; and
- Health awareness: spreading healthcare knowledge

iHealth Centers opened in our research centers in Nanjing, Shanghai, Hangzhou, Wuhan, Chengdu, and Xi'an in November 2016, serving approximately 70,000 employees.



iHealth Center at the Wuhan Research Center



iHealth Center at the Xi'an Research Center

Safe Operations

We have incorporated employee health and safety requirements into our operations, and taken concrete action to deliver on our commitment to health and safety assurance. These efforts are conducive to our role as a responsible corporate citizen – and to our business development. We believe employee health and safety are the basis of Huawei's survival and development, and are also crucial for our competitiveness.

In 2016, we continued to uphold our principles of putting safety first and caring for employees. Based on the OHSAS 18001 standard, we improved our approaches to ensuring occupational health, protecting the rights and interests of employees, and managing production safety. We also continuously reinforced health and safety management in delivery projects, to better protect the staff of both Huawei and our contractors.



EHS Management in Delivery Projects Worldwide

With a firm belief that health and safety matter most, we set our goal of 0 injuries and fatalities, and continuously optimize our Environment, Health, and Safety (EHS) management around the world. Our safety accountability mechanism requires managers at all levels to be responsible for safety. We established an EHS management maturity model for delivery projects, and adopted IT systems for automatic measurement and efficient digital management.

We continuously invest in safety assurance, putting the required tools, equipment, and human resources in place. For example, we assigned EHS managers to 1,000 large delivery projects in over 170 countries and regions, and issued over 44,000 safety qualification certificates to our partners. More than 12,000 Huawei delivery engineers took part in EHS-related online training and exams. We developed a mobile app to manage EHS of 250,000 base stations onsite. In terms of road traffic safety, our On-Board Diagnostic (OBD) system assists driver safety management. A total of 8,000 OBD-aided vehicles have

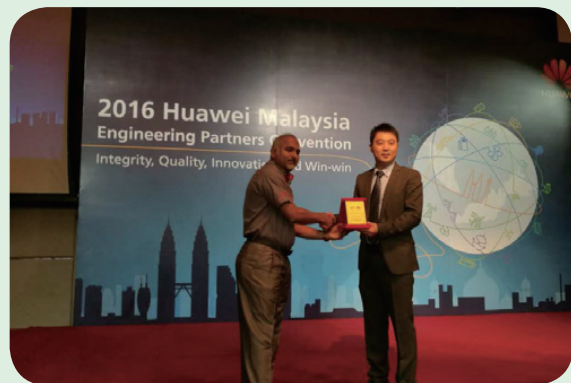
achieved an accident-free mileage of 140 million km. In terms of EHS management, we also work closely with third parties that carry out independent onsite checks and proactively identify safety risks. As a result, our field offices are able to promptly fix their problems and protect the safety of our customers, Huawei staff, our partners, and other stakeholders in our delivery projects.

Our performance in EHS management has been highly recognized by governments in countries where we operate. For example, in 2016, we received the Excellent Work Skills Improvement and Contribution award from the Indonesian government as well as the Excellent Commitment and Improvement Towards EHS at Workplace award from the Malaysian government. We also developed ICT-related EHS regulations in close collaboration with Egypt's Ministry of Manpower and Migration.

Our pursuit of EHS is never-ending. Going forward, we will continuously improve the way we manage EHS to reinforce delivery safety.



EHS onsite check at a delivery site



Excellent Commitment and Improvement Towards EHS at Workplace award in Malaysia

Green Operations

Minimizing the environmental impact of our internal operations is a long-term key initiative at Huawei, because this will contribute to a low-carbon society. We have adopted multiple initiatives to reduce our energy consumption and CO₂ emissions, such as implementing energy management systems, achieving managerial and technological improvements, and using clean and renewable energy. By the end of 2016, we had built solar power stations with a total capacity of 19.3 million kWh. These solar power stations generated 17.07 million kWh of electricity in 2016, equivalent to a CO₂ emissions reduction of over 15,000 tons.



Increasing Energy Efficiency in R&D Labs

Some of our first R&D labs were scattered in different places, and their air conditioners and power systems were inefficient, with an average power usage effectiveness (PUE) as high as 2.5.

To increase energy efficiency and reduce carbon emissions, we built large centralized labs in the Chinese cities of Dongguan, Langfang, and Chengdu. Leading technologies and facilities – such as free cooling, separation of hot and cold air conduits, and efficient power supply cabinets – reduce lab PUE to below 1.5 and make the labs 40% more energy efficient. As a result, our labs are able to save

71 million kWh of electricity every year, equivalent to a CO₂ emissions reduction of over 65,000 tons.



Large centralized labs with higher energy efficiency

Sustainable Supply Chain

In 2016, we implemented our Quality First strategy to a greater extent. As sustainability is a key element of our strategy, it was assigned greater weight during supplier qualification, performance appraisal, and procurement decision-making. We strengthened cooperation in sustainability with customers, suppliers, and industry organizations. Procurement quotas were used as a means to drive the continuous improvement of our suppliers, minimize supply risks, increase customer satisfaction, and improve competitiveness of our supply chain. In 2016, we focused on the following aspects as we managed supply chain sustainability:

- Enhancing cooperation with customers to expand joint audits and employee surveys, and increase supply chain transparency: In

2016, Huawei and three customers carried out onsite audits on 10 suppliers, and we shared audit results with customers. Additionally, Huawei and two customers used Laborlink to survey the staff of 10 suppliers, and adopted mobile technology to improve employer-employee communications in the supply chain. In April 2016, Huawei and Deutsche Telekom co-hosted a Supply Chain Sustainability Workshop to enable the exchange of ideas between industry experts, customers, and suppliers.

- Enhancing cooperation with suppliers and building sustainability into procurement and supplier lifecycle management: In 2016, we reviewed 57 potential suppliers in terms of their sustainability performance, and the 12 suppliers who failed the review were denied the chance to cooperate with Huawei.

We audited 938 suppliers with respect to sustainability risks, and conducted onsite audits on 53 medium- and high-priority suppliers. Among the 951 suppliers that took part in our performance appraisals, two suppliers had their business with Huawei restricted due to poor performance in sustainability.

- Enhancing cooperation with governments and NGOs, and reinforcing a market-driven green supply chain mechanism: Our supplier audit tools and processes used the enterprise environmental data of the Institute of Public and Environmental Affairs (IPE). In 2016, routine queries about the environmental data of 500 key suppliers revealed 15 violations of environmental protection rules. We audited 10 suppliers onsite and asked that they make improvements within a predefined timeframe to meet our requirements. We also participated in developing China's

national standards for a green supply chain, and defining the green supply chain management and evaluation requirements of China's Ministry of Industry and Information Technology.

- Enhancing cooperation with industry players to develop standards and drive joint actions: In 2016, Huawei was an expert member in a project dedicated to establishing CSR management systems and standards for China's ICT industry. We played a leading role in developing the *IPC-1401 Supply Chain Social Responsibility Management System Guidance*. We advocated that social responsibility should be integrated, as a customer requirement, into product lifecycles and the value chain. We also drove collaboration across industries and along the supply chain, helping supply chain players fulfill their social responsibility and become more competitive.



Leading the Development of the IPC-1401 Supply Chain Social Responsibility Management System Guidance

In 2014, the Association Connecting Electronics Industries (IPC) named Huawei and Flextronics as leaders in the development of the organization's *Supply Chain Social Responsibility Management System Guidance*. Over the past three years, Huawei has organized over 10 workshops with more than 160 volunteer experts from nearly 80 electronics companies and 10 industry associations. Together with these experts, we analyzed how supply chain social responsibilities have evolved over the past two decades – as well as the actions, challenges, and needs of customers and suppliers. All participants agreed that it is necessary to adopt compliance audit models beyond traditional approaches; implement the ISO management systems and framework; leverage industry best practices; regard social responsibilities as customer requirements and as requirements for products and production; and integrate social responsibilities into procurement strategies, procurement processes, material qualification, supplier qualification, and procurement decision-making. It is widely accepted that

procurement quotas should be used as a means to drive the continuous improvement of suppliers, and that social responsibilities should be fulfilled to improve business competitiveness.

The *IPC-1401 Supply Chain Social Responsibility Management System Guidance* has passed three rounds of review and will be published and enacted in 2017.



IPC-1401 Supply Chain Social Responsibility Management System Guidance

Sustainable Products and Services

Cyber Security and Privacy Protection

Establishing and implementing an end-to-end global cyber security assurance system is one of our core development strategies. Based on compliance with the applicable laws, regulations, and standards of relevant countries and regions – and by reference to the industry best practice – Huawei has established and will constantly optimize an end-to-end cyber security assurance system. Such a system will incorporate aspects from corporate policies, organizational structure, business processes, management, technology, and standard practice. Huawei has been actively tackling the challenges of cyber security through partnerships with governments, customers, and partners in an open and transparent manner. User privacy is also our top priority: We comply with privacy and personal data protection laws and regulations in all countries and regions where we operate, and take viable measures to help enhance privacy protection.



Huawei's Fourth Cyber Security White Paper Addresses Supply Chain Risks

In 2016, Huawei published its fourth cyber security white paper, entitled *The Global Cyber Security Challenge – It is time for real progress in addressing supply chain risks*.

This white paper focuses on supply chain risks. Supply chain risk management is not just about ensuring that products and services will be there when needed, but it is also about a product lifecycle approach that minimizes the risk that products will be tainted by the behavior of malicious actors, or that the products may be counterfeited or contain counterfeit components that can be exploited for illicit purposes.



Fourth cyber security white paper

Green Products and Services

We continuously innovate technologies that minimize the energy consumption and carbon emissions of our products. We provide a variety of products and solutions to help our customers be more energy-efficient and less carbon-intensive. In 2016, we applied multiple technologies to reduce the energy usage of our base stations, such as Symbol Power Saving, RF Channel Intelligent Shutdown, and Carrier Intelligent Shutdown. These technologies, now widely used in carrier networks, reduce the energy usage of remote radio units by more than 20% during non-peak hours. In close collaboration with our industry partners, we research green technology for the ICT industry, drive the development of energy saving standards, support the innovation and development of green ICT technology in the industry, and improve competitiveness and influence through energy saving and emissions reduction.



Smart Lighting IoT Solution Powers Smart Cities

The Climate Group estimates that there are approximately 304 million street lamps around the globe, and that this figure will reach 352 million in 2025. The prevalence of street lamps brings significant convenience to peoples' lives. However, traditional high-pressure sodium lamps consume huge amounts of electricity, are costly to manage, and are thus a persistent headache for city administrations.

Huawei's Lighting IoT Solution connects all street lamps across a city into a unified IoT network, and gives city administrations a clear picture of all street lamps in every local district. The solution's flexible lighting policy can accurately turn on or off lamps and adjust their brightness. This on-demand approach can reduce electricity usage by as much as 80%.

A lighting network linking hundreds of millions of lighting facilities is the first step towards building a better connected public facility IoT. When smart devices for lighting, road traffic management, environment monitoring, and public facility management are linked together, a better connected public facility IoT will take shape to power a smart city.



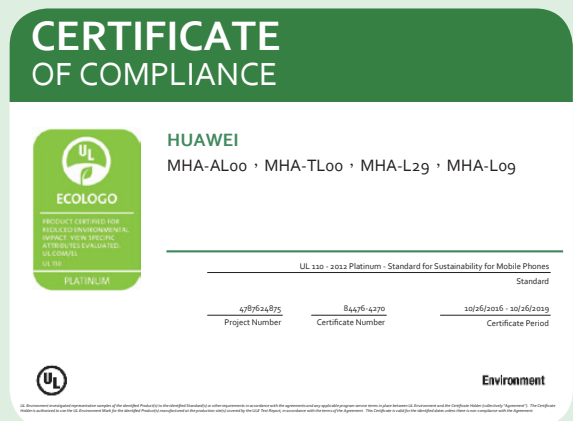
Smart lighting IoT solution powers a smart city



Eight Huawei Smartphones with the Highest-level Green Certification

We are conscious of the environment when we design our consumer products, and we implement rigorous controls throughout product lifecycles, from selection of raw materials, manufacturing, packaging, transportation, and usage to scrapping, disposal, and recycling. Our goal is to minimize the impact of our products on the environment.

In 2016, eight mobile phones – the P9, P9 Plus, P9 Lite, G9 Plus, Honor 8, Nova, Mate 9, and Mate 9 Pro – received the highest level (Platinum) of UL110 certification.



UL110 Platinum certification for the Mate 9

Product Safety

Huawei has a rigorous product safety control mechanism and continuously seeks to improve the safety and reliability of the products and services we provide to our consumers and customers. Reducing electromagnetic radiation remains our R&D priority as more network equipment is used in homes and public places. In addition, we collaborate extensively with world-class institutes to meet noise control requirements for products. Huawei has a scenario-based approach to safety design, so that our products will conform to health and safety standards, and we can also guarantee ease of installation and use.



Minimizing Product Noise

We have adopted multiple methodologies to greatly reduce the noise of multiple products. For example, we introduced industry-leading noise simulation technology into our company. A "white box" approach was used to study the factors that determine product noise. We also redesigned product shapes and sizes to minimize noise.

One example is our core router, which cancels noise by 10 dB (compared with 6.5 dB of the previous model) and reduces noise energy by 90%. In order to make this happen, we adopted noise simulation technology to redesign the router's ventilation pipes and noise cancelling module, without having a huge impact on the product's cost or size. The next-generation of the core router is expected to achieve 12 dB noise reduction, thus reducing noise energy by over 93%.

Sustainable World

Bridging the Digital Divide

Huawei has deployed base stations in the Arctic Circle and on the highest peaks of the world. But, while digital pipes are connecting different parts of the globe, there are many communities without any form of network access. Huawei is continually exploring innovative solutions and models to connect the unconnected and expand access to knowledge, education, and opportunities.

ICT is a powerful tool that allows people, governments, and businesses to share, engage, create value, and innovate. ICT technologies are becoming more and more deeply integrated into all industries, driving digital transformation and modernization. Huawei's ICT products and solutions are widely adopted in the telecom industry, and also in governments, transportation, healthcare, finance, and energy. Our ICT solutions have delivered significant efficiency returns and value for these industries.



Huawei's Smart Healthcare Project in Kenya

To improve access to healthcare services in rural Kenya, Huawei worked with the Kenyan government, Safaricom, MicroClinic Technologies, and the United Nations Population Fund to connect over 40 medical facilities to a telemedicine and digital clinic solution.



Telemedicine system training for clinic staff

The Smart Healthcare Project benefited over 200,000 people in Lamu County and other remote areas. As a result, they no longer need to travel to distant facilities for diagnosis or treatment. Instead they can continue using their local clinics and communicate with medical specialists remotely. In addition, our digital solution allows the government to build up health data, predict and manage the demand and supply of medicine, and assess the productivity of staff or workload in facilities to decide on staffing, training, and facilities investment.

In November 2016, the Smart Healthcare project received the prestigious 2016 Innovative Global South Award at the Smart City Expo World Congress in Barcelona.

Supporting Network Stability

Supporting network stability is our paramount social responsibility, and we strive to ensure that everyone is able to communicate, access data, and share information anytime, anywhere. Specifically, we have established a comprehensive customer network support system that considers a range of factors, including organizational structures, designated personnel, processes, and IT tools. To protect lives and property, we have established a mature business continuity management system, which provides a contingency plan for emergencies (e.g., earthquakes and wars) and allows us to quickly restore customers' networks and resume stable operations following critical emergencies.

In 2016, we ensured smooth communications for nearly 3 billion people worldwide, and supported the stable operations of over 1,500 networks in more than 170 countries and regions. We guaranteed network availability during approximately 200 major events and natural disasters (e.g., the Ecuador magnitude-7.8 earthquake, and the Hajj in Saudi Arabia).

Social Contributions

We proactively fulfill our social responsibility and support local communities while pursuing business development. Together with governments, customers, and non-profit organizations, we leverage our ICT expertise and management experience to roll out various social contribution projects. For example, we support ICT innovation; facilitate green initiatives and traditional cultural events of local communities; enable talent development and education; and support underprivileged groups. Our goal is to be a responsible and respected corporate citizen in all communities where we operate.



Seeds for the Future

Since 2008, our flagship CSR program, Seeds for the Future, has taken root, blossomed, and yielded fruit in 96 countries and regions. In 2016 alone, more than 1,000 top university students from over 90 countries and regions took part in a study trip to China as part of the program. They studied Mandarin, immersed themselves in China's unique culture, learned about Huawei's corporate culture, and discussed the company's path to growth. They also studied ICT technology under the guidance of senior Huawei experts, and applied what they learned in our world-class ICT labs.



UK Minister of State for Energy and Intellectual Property Baroness Neville-Rolfe (third row, sixth from the right) attended the closing ceremony of the Seeds for the Future Program and handed out certificates to UK and Irish university students.

As an ICT industry leader, Huawei leverages its technical expertise to nurture ICT professionals around the world, thus helping up-and-coming talent to contribute to ICT development in their own countries. We do not require program participants to join Huawei, and we do not impose any other conditions for participation. The program is simply an opportunity to share knowledge and bridge the digital divide.

"This internship was great experience for my career. It was amazing."

"The program gave us a precious opportunity to explore different cultures and the most advanced communications technology."

"I will recommend this program to others. Thank you, Huawei, for offering me this once-in-a-lifetime opportunity!"

— Comments from program participants



Community Support Programs Worldwide

As we contribute to the ICT industries in countries and regions where we operate, we continue to strengthen our bonds with local communities. We do everything in our power to support and give back to local communities, bringing direct benefits to local people. This enables us to better serve and integrate into local society.

In 2016, we ran approximately 200 community support programs in 70 countries

and regions. The projects addressed the needs of local people in various ways: improving living standards; supporting cultural, sports, and traditional events; offering assistance to underprivileged groups; and enabling education. These initiatives reinforced cultural exchange and social integration, and gave a strong boost to local community development.



Donating food in Uganda



Supporting residents in flooded regions of Tanzania

ICT Sustainable Development Goals (SDGs) Benchmark

Further ICT investment is urgently needed to achieve the United Nations' Sustainable Development Goals by 2030

We believe that ICT is a critical enabler to achieve the United Nations' Sustainable Development Goals (SDGs) at the scale and speed necessary to fulfill the 2030 Agenda for Sustainable Development. In order to demonstrate this, we worked with the global think-tank, SustainAbility, to create the ICT Sustainable Development Goals (SDGs) Benchmark. It measures the level of ICT development in 15 countries and their respective progress towards a sample of 6¹ of the 17 SDGs.

The Benchmark, which is shown in Figure 1, ranks countries according to their ICT development (which is measured in terms of access, connectivity, and efficiency using ITU indicators) and their progress towards the SDGs (which is measured using World Bank and UN development indicators). The results show how ICT development plays an important role as an enabler of economic and social progress. The Benchmark is important because whilst the ranking indicates that wealthier countries tend to score higher than less developed ones, the correlation with GDP is not so simple. For example, the United Arab Emirates (UAE) has a much higher GDP per capita than China (~\$40,000 vs. ~\$6,000) but is only 10 points higher than China in our Benchmark. Singapore has the second highest GDP in our sample but is positioned fifth, and Sweden has the third highest GDP per capita but leads the ranking. Whilst we hope to explore this research further in the future, we believe this shows that the application of ICT can speed up progress towards the SDGs.

¹ SDG3 (good health and well-being for all people), SDG4 (inclusive, equitable quality education for all people), SDG5 (gender equality and empowerment for all women and girls), SDG9 (build resilient infrastructure, sustainable industrialization and foster innovation), SDG11 (make cities and human settlements inclusive, safe, resilient and sustainable), and SDG13 (take urgent action to combat climate change)

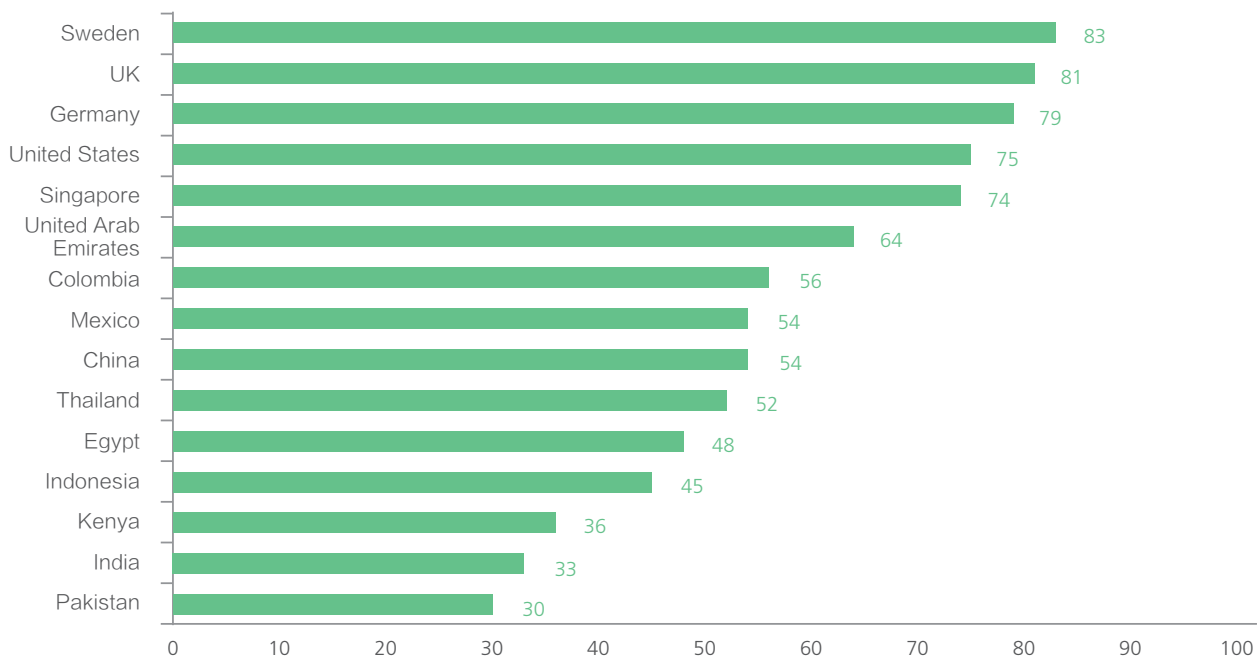


Figure 1 ICT Sustainable Development Goals Benchmark

The Future Digital Society Could be Highly Sustainable

We found an even higher degree of correlation (96%) with the influential United Nations' Human Development Index (HDI) (Figure 2). The HDI assesses development using economic, health, life expectancy, education and other indicators, providing a broad assessment of national development. The correlation between the two suggests the future digital society could be highly sustainable.

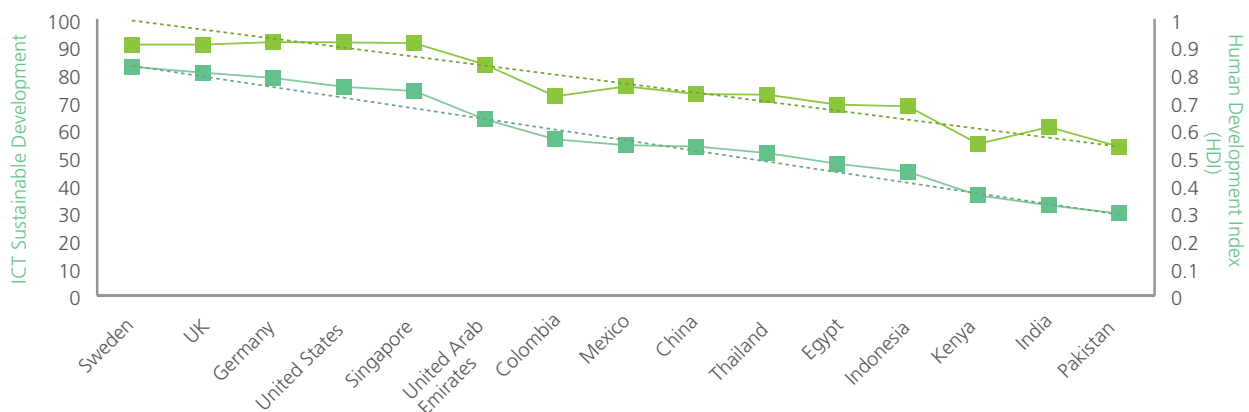


Figure 2 ICT Sustainable Development Goals Benchmark vs. Human Development Index (HDI)

There is still a long way to go though. Worldwide, some four billion people do not have Internet access, nearly two billion do not use a mobile phone, and almost half a billion live outside a mobile signal. For digital technologies to benefit everyone everywhere, the digital divide needs to be closed; otherwise the SDGs will be pushed further into the distance. **The solution is clear: ICT needs to be expanded, be more closely aligned with policies that support the SDGs, be informed by international good practice, and be based on national context and development priorities. In effect, all countries need an ICT strategy that is 2030 Agenda-proofed.**

For further details, please see the complete *Huawei 2016 Corporate Sustainability Report*.

Abbreviations, Financial Terminology, and Exchange Rates

Abbreviations

Abbreviation	Full Name
3D	Three-Dimensional
3GPP	3rd Generation Partnership Project
5GAA	5G Automotive Association
5GIC	5G Innovation Centre
5G-PPP	5G Infrastructure Public Private Partnership
5GVIA	5G Vertical Industry Accelerator
AC	Audit Committee
ACM	Association of Computing Machinery
AI	Artificial Intelligence
All	Alliance of Industrial Internet
AMI	Advanced Metering Infrastructure
API	Application Programming Interface
ARPU	Average Revenue Per User
B2B	Business to Business
B2C	Business to Consumer
BBF	Broadband Forum
BCGs	Business Conduct Guidelines
BDII	Business-Driven ICT Infrastructure
BES	Business Enabling System
BG	Business Group
BOD	Board of Directors
BPA	Business Process Architecture
BSIMM	Building Security in Maturity Model
BT-ESC	Business Transformation Executive Steering Committee
CaaS	Communication as a Service
CAGR	Compound Annual Growth Rate
CC3	Customer Centric 3
CCSA	China Communications Standards Association
CDR	Call Detail Record
CEM	Customer Experience Management

Abbreviation	Full Name
CEO	Chief Executive Officer
CERT	Computer Emergency Response Team
CGU	Cash-Generating Unit
CNCF	Cloud Native Computing Foundation
COE	Center of Expertise
COSO	Committee of Sponsoring Organizations under the Treadway Commission
CPU	Central Processing Unit
CRDU	Central Research & Development Unit
CRM	Customer Relationship Management
CSO	Cyber Security Officer
CT	Communications Technology
D&P	Development and Pilot
DC	Data Center
DMMM	Digital Maturity Model and Metrics
DPO	Days of Payables Outstanding
DR	Disaster Recovery
DSO	Days of Sales Outstanding
DSTE	Develop Strategy to Execute
DSV	Delivery Service Vendor
ECC	Edge Computing Consortium
EHS	Environment, Health, and Safety
eMBB	enhanced Mobile Broadband
EMEA	Europe, the Middle East and Africa
eNodeB	evolved NodeB
ERM	Enterprise Risk Management
ESC	Executive Steering Committee
ETSI	European Telecommunications Standards Institute
FC	Finance Committee
FDD	Frequency Division Duplex

Abbreviation	Full Name
GCI	Global Connectivity Index
GIV	Global Industry Vision
GPO	Global Process Owner
GPU	Graphics Processing Unit
GSMA	Global System for Mobile Communications Association
GSPC	Global Cyber Security and User Privacy Protection Committee
GTS	Global Technical Service
HAINA	Huawei Authorized Information and Network Academy
HCIE	Huawei Certified Internetwork Expert
HD	High Definition
HIRP	Huawei Innovation Research Program
HPC	High-Performance Computing
HRC	Human Resources Committee
IAS	International Accounting Standard
IASB	International Accounting Standards Board
ICS	Indoor Connected Solution
ICT	Information and Communications Technology
IEEE	Institute of Electrical and Electronics Engineers
IEEE-SA	IEEE Standards Association
IES	Infrastructure Enabling System
IETF	Internet Engineering Task Force
IFRIC	International Financial Reporting Interpretations Committee
IFRS	"International Financial Reporting Standard"
IFS	Integrated Financial Services
IIC	Industrial Internet Consortium

Abbreviation	Full Name
IMS	IP Multimedia Subsystem
IMT	International Mobile Telephony
IOPS	Input/Output Operations Per Second
IoT	Internet of Things
IP	Internet Protocol
IPC	Association Connecting Electronics Industries
IPE	Institute of Public and Environmental Affairs
IPR	Intellectual Property Right
IPTV	Internet Protocol Television
ISC	Integrated Supply Chain
ISDP	Integrated Service Delivery Platform
ISO	International Organization for Standardization
ISP	Internet Service Provider
ISV	Independent Software Vendor
IT	Information Technology
ITO	Inventory Turnover Days
ITU	International Telecommunication Union
ITU-T	ITU Telecommunication Standardization Sector
KPI	Key Performance Indicator
LiTRA	LTE integrated Trunked Radio Access
LTC	Lead to Cash
LTE	Long Term Evolution
MBB	Mobile Broadband
MCR	Manage Client Relationship
MEC	Multi-access Edge Computing
MET	Marketing Execution Team

Abbreviation	Full Name
MIMO	Multiple-Input Multiple-Output
MTL	Market to Lead
NAS	Network Attached Storage
NB-IoT	Narrowband Internet of Things
NBN	National Broadband Network
NC	Node Controller
NFV	Network Functions Virtualization
NFV-ITI	NFV Interoperability Testing Initiative
NVM	Non-Volatile Memory
NVMe	Non-Volatile Memory Express
O&M	Operations and Maintenance
O2O	Online to Offline
OBD	On-Board Diagnostic
OBI	Open Broadband Initiative
OCI	Open Catalog Interface
ONOS	Open Network Operating System
OPEN-O	OPEN-Orchestrator Project
OPNFV	Open Platform for NFV
OPRC	Open ROADS Community
OT	Operational Technology
OXC	Optical Cross-Connect
PC	Personal Computer
PCIe	Peripheral Component Interconnect Express
PID	Photonics Integrated Device
PON	Passive Optical Network
PUE	Power Usage Effectiveness
PV	Photovoltaic
R&D	Research and Development
RAS	Reliability, Availability, and Serviceability
ROADS	Real-time, On-demand, All-online, DIY, and Social
RPO	Recovery Point Objective

Abbreviation	Full Name
SaaS	Software as a Service
SACA	Semi-Annual Control Assessment
SAN	Storage Area Network
SAP	Systems, Applications and Products in Data Processing
SDC	Strategy & Development Committee
SDG	Sustainable Development Goal
SDN	Software-defined Networking
SDS	Software-defined Storage
SMB	Small- and Medium-sized Business
SoC	System-on-a-Chip
SPP	Solution Partner Program
SQL	Structured Query Language
SSD	Solid-State Drive
STaaS	Storage as a Service
TBU	Time-based Unit
TUP	Time-based Unit Plan
UFS	Universal Flash Storage
UGW	Unified Gateway
UHD	Ultra High Definition
UI	User Interface
UPS	Uninterruptible Power Supply
USITC	United States International Trade Commission
USN	Unified Service Node
U-vMOS	User, Unified, Ubiquitous-Mean Opinion Score for Video
VoLTE	Voice over Long Term Evolution
VoWiFi	Voice over Wi-Fi
VR	Virtual Reality
WAN	Wide Area Network
WFA	Wi-Fi Alliance
WLAN	Wireless Local Area Network
WTTx	Wireless To The x
WWRF	Wireless World Research Forum

Financial Terminology

Operating profit

Gross profit less research and development expenses, selling and administrative expenses, plus other (expenses)/income, net

Cash and short-term investments

Cash and cash equivalents plus other current investments

Working capital

Current assets less current liabilities

Liability ratio

Total liabilities expressed as a percentage of total assets

Days of sales outstanding (DSO)

Trade receivables at the end of the year divided by revenue, and multiplied by 360 days

Inventory turnover days (ITO)

Inventories at the end of the year divided by cost of sales, and multiplied by 360 days

Days of payables outstanding (DPO)

Trade payables at the end of the year divided by cost of sales, and multiplied by 360 days

Cash flow before change in operating assets and liabilities

Net profit plus depreciation, amortization, exchange loss, interest expense, loss on disposal of property, plant and equipment and intangible assets, and other non-operating expense, less exchange gain, investment income, gain on disposal of property, plant and equipment and intangible assets, and other non-operating income.

Exchange rates

CNY/USD	2016	2015
Average rate	6.6568	6.2927
Closing rate	6.9448	6.4927

Photos on the contents page and pages 12, 16, 98, and 118 were taken by Huawei employees.

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