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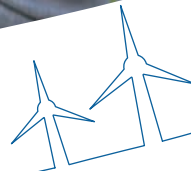


# Bridging the Digital Divide

## Connectivity

- Provide people across all geographic areas with ease of access to voice communications services
- Enable broadband inclusion for all
- Nurture ICT professionals and transfer ICT knowledge in local communities where Huawei operates
- Leverage leading ICT solutions to help different industries boost efficiency and information-based development, thereby driving social progress





Problems concerning voice communications have been largely resolved with the development of the communications industry and the penetration of phones. However, most people still live in an unconnected world. According to a recent report by ITU, three-fifths of the world's population are left outside the information society, unable to access the infinite opportunities made possible by ICT technologies.

In the future, the digital and physical worlds will become more integrated, creating a connected world full of infinite possibilities. However, there is a huge gap in people's ability to use ICT technology and leverage its value. Therefore, it's time we redefined the digital divide, which, we believe, is no longer just about voice connectivity. In our opinion, narrowing the digital divide requires broadband inclusion and the availability of more content and applications enabled at a higher bandwidth.

In addition to providing people across all geographic areas with ease of access to high-quality voice communications services, Huawei continuously focuses on bridging the digital divide through broadband, talent, and applications. Huawei promotes broadband availability everywhere and leverages future-oriented ICT technologies to address global challenges. We have established training centers and launched joint teaching initiatives to develop local talent, transfer knowledge, and encourage regional development of and participation in the digital community. Huawei also provides customized ICT applications and solutions that suit individual, corporate, and regional requirements to improve economic performance, quality of life, production efficiency, and competitiveness.



## 2.1 Communications for All

Huawei is committed to providing easy voice communications for people across different geographies. So far, our products and solutions have been deployed in over 170 countries and regions, serving nearly 3 billion people around the world. Among the areas we serve, many are underdeveloped and remote with harsh geographic

environments. In addition, we are dedicated to providing instant communications services under certain emergencies, enabling ubiquitous voice communications services for everyone.

### Resolving Communications Challenges for 8 Million People in Remote Areas of the "Mountain Kingdom"

Located in the Himalayas, Nepal is known as the "Mountain Kingdom" as it has many mountains over 6000m above the sea level. Nepal's mountainous terrain makes transportation in this developing country difficult and goods are mainly carried by manual labor, oxen, or helicopters. Electricity supply is another major challenge for the country: Each winter, some areas of the country suffer from power outages of up to 16 hours every day. Difficult construction of common base stations, long construction periods, and high construction costs have troubled carriers in Nepal, and they have been unable to more effectively provide local communications. People in Nepal could not even make high-quality phone calls, let alone communicate with the outside world.

After gaining a deep understanding of the conditions in Nepal, Huawei helped local carriers deploy integrated base stations in rural areas using the Huawei SingleSite solution. The deployment of energy-efficient outdoor base stations powered by solar energy significantly helped carriers lower their site construction costs, effectively reduce the dependency

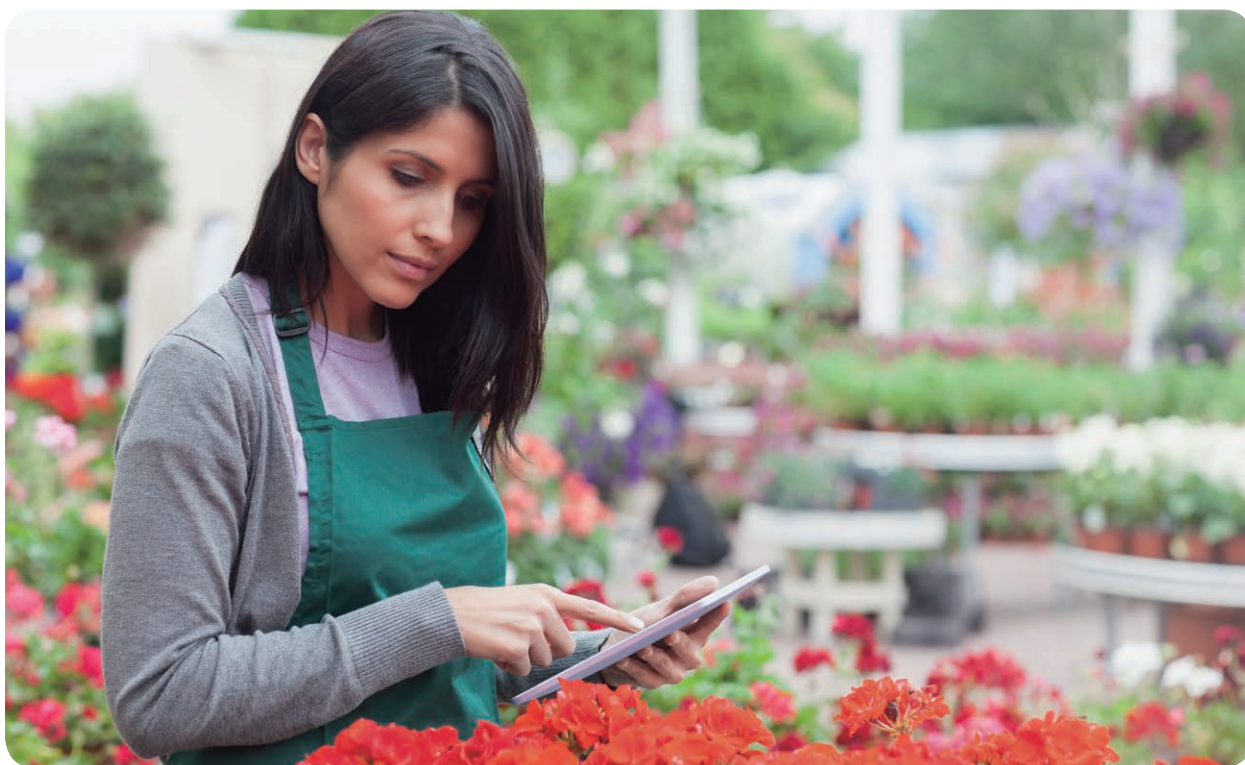
of base stations on electric power, and quickly achieve signal coverage in the relevant areas. By the end of 2013, Huawei rolled out 2G networks in mid-west, western, and far west Nepal, the country's three remote mountainous areas, and began using 2G+3G solutions to replace equipment in the central and eastern Nepal, providing coverage for over 8 million people. Convenient communications have made the lives of the Nepalese much easier and given them access to full connectivity.

Advancements in communications also have boosted the country's tourism industry. For the first time, people in mountainous areas can make calls as well as send and receive text messages anytime they choose. This not only facilitates communications with the outside world, it also enhances the safety of tourists. As a result, more and more tourists are attracted to this country. In addition, the global information exchange has improved the investment environment in Nepal and accelerated Nepal's economic development pace. The charm of the "Mountain Kingdom" has now gone global.



The Huawei SingleSite solution makes communications convenient for Nepalese in mountainous areas



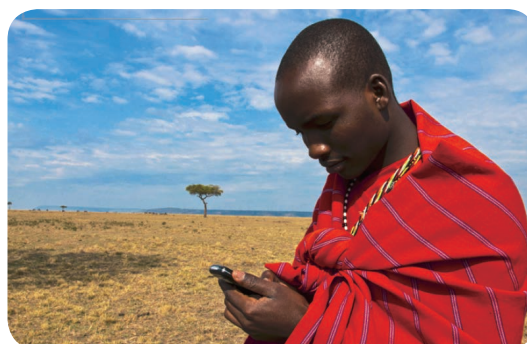


## 2.2 Broadband Inclusion for All

**Connecting the 4.4 billion unconnected:** According to a 2013 ITU report, 77% of citizens in developed countries have Internet access, compared to 31% in developing countries. This means that among the 4.4 billion unconnected, less than 300 million are from developed regions such as the US, Europe, Japan, and South Korea.

Huawei is dedicated to building broad information pipes to enable ubiquitous broadband availability. We actively promote future-oriented ICT technologies to unlock infinite possibilities by connecting people and people, people and things, and things and things.

### Huawei's LTE TDD Solutions Bring Affordable Broadband to West Africa



Huawei LTE TDD solution boosts broadband penetration in Africa

According to a 2009 World Bank study, gross domestic product (GDP) of low to middle income countries can grow by an additional 1.4% with a 10% increase in broadband usage. Business and agriculture benefit from more efficient processes and access to wider markets, while vital areas of society, including education, research, and healthcare, improve from greater access to information through the Internet. Across all



of Africa, only 5.3% of homes had access to fixed broadband at the end of 2012, while the percentage in Europe was 77%.

“Broadband inclusion for all” is a core element of Huawei’s sustainability strategy and an especially important focus for our teams in West Africa. Nigeria’s National Broadband Strategy envisions a 95% availability rate of 3G/4G data technology and a usage rate of 76% by 2020. As of 2013, the country had low availability (35%) and usage (6%) rates due to both access and affordability. Broadband data packages were typically quite expensive in 2012: roughly US\$80/month for a capped plan or US\$300/month for unlimited data.

To provide affordable broadband access, Huawei worked with Nigerian carriers Swift Networks and Spectranet to provide a smooth transition from WiMAX to Long Term Evolution (LTE) technology, with large capacity and easy to obtain spectrum resources. LTE technology performs better than older networks due to increased bandwidth, and this added capacity allows for more users within a base station. Higher LTE speeds give end users lower latency, which translates into a much more stable user experience. The technology’s impressive speed helps build better mobile payment platforms and improves mobile user experiences for services such as banking and video chat.

Huawei Nigeria worked with Swift Networks and Spectranet in 2013 to make LTE available in Lagos, Nigeria, a bustling city of over 20 million people. Charles Anudu, Managing Director at Swift Networks, describes our LTE efforts as a “bold investment”, noting that bridging the digital divide with affordable and accessible broadband is of the highest importance for developing countries like Nigeria. We helped Swift Networks build a new 2.3 GHz LTE TDD network in 2013, which doubled the throughput of the existing WiMAX network. Swift Networks updated their network primarily through minor upgrades, significantly reducing deployment cost and operating cost. These cost savings and the added capacity of LTE allows Swift Networks to provide lower data prices for consumers, and enables end users to enjoy broadband access at very affordable rates.

A Swift Networks family package in Lagos is now available and 20GB costs around US\$35 per month, while an entry-level plan for students and workers provides 300MB per month for only US\$3, a significant reduction from the previous US\$80 packages. End users in Lagos can now enjoy affordable broadband access on par with the developed world, with more of Nigeria soon to follow.

More and more Nigerian users are embracing the Internet service. Students now register for online studies, companies can set up video conferences with foreign business partners, and people rely on the Internet for news and information. Huawei will continue to work with our partners to increase capacity and expand into new cities across Nigeria. We will continue to update customers’ 3.5GHz



WiMAX networks to LTE TDD to provide increased broadband access at affordable prices for more Nigerians in the future.

In addition to providing broadband access to end users, Huawei invests in the people of Nigeria. The Nigerian government’s Ministry of Communication Technology has set up a program for training girls across Nigeria. This one-year program includes 1,000 girls who are trained for three days each in Lagos and Abuja. The objective is to achieve an ICT literacy level that enables them to find employment when they come of working age. Huawei has invested US\$1.3 million which was matched by the Nigerian government with US\$1 million.

Speaking at the launch of the training event, the Minister of Communication Technology, Mrs. Omobola Johnson, said that ICT has the transforming power to accelerate the development of women by helping them to become more efficient in their jobs and to generate new employment opportunities.

## ICT Training for 1,000 Nigerian Girls



Instructor Mr. Uwazie Kingsley leads a girl-focused training class in Lagos



## 2.3 Nurturing ICT Talent

A strategic focus for Huawei in bridging the digital divide is to stay committed to the transfer and sharing of ICT knowledge and skills as well as to the nurturing of ICT talent. Huawei strives to bridge the divide for people from all walks of life in terms of information accessibility and to achieve the target of making information technology available to all.

Huawei proactively nurtures local ICT professionals, transfers knowledge, and encourages the regional development of and participation in the digital community. By the end of 2013, Huawei's Telecom Seeds for the Future program had been extended to benefit more than 10,000 students from over 70 universities in more than 20 countries.





## Huawei Nurtures ICT Talent Through Our Global Training Centers



Huawei's training centers worldwide

Huawei's global training centers are dedicated to nurturing ICT talent for customers and society, improving people's ICT skills in communities where Huawei operates, and thus bridging the digital divide. Based on Huawei's ICT training practices as well as our experience in cooperating with world-leading carriers, our global training centers can provide end-to-end talent development solutions to meet customers and society's demands for ICT talent and address the future challenges of a digital society.

Huawei has established 45 training centers globally providing training services in 16 languages including English, Spanish, French, and Russian. To deliver high-quality training courses, more than 1,200 teachers in our training centers have passed stringent qualification and certification, and more than 200 engineers are engaged in designing and developing teaching courses. In addition, our online eLearning platform provides eLab, On-Line Test, Live Virtual Classroom, Web Based Training, and M-Learning services. We have deployed over 100 servers worldwide to facilitate easy access to our eLearning system in different regions.

### Malaysian Training Center

Huawei entered the Malaysia market in 2001. Since then, we have been dedicated to helping Malaysia develop communications talent, increase talent reserve, and improve the competitiveness of local talent while actively putting efforts in Malaysia's mobile broadband build-outs. In 2012, Huawei established a global training center in Cyberjaya, Malaysia, which provides training for more than 20,000 engineers each year. In June 2013, Huawei signed a memorandum of understanding (MOU) with Malaysia Multimedia Development

Corporation (MDeC) to jointly promote digital education in Malaysia's middle and elementary schools. Huawei has cooperated with 18 universities in Malaysia to date, creating scholarships at these universities to develop more ICT talent.

Badlisham Ghazali, CEO of MDeC said, "As our outstanding partner, Huawei has not only contributed significantly to the development of Malaysia's ICT industry, but is also dedicated to providing ICT technologies and sharing experience with students, professionals, and teachers in Malaysia."



Huawei receives the "ICT Industry and Talent Development in Malaysia" award

## 2.4 Application of ICT Technologies

As an ICT solutions provider, Huawei is dedicated to providing customized ICT solutions that help enterprises in different regions improve their economic performance, productivity, and competitiveness. In this way, we help these enterprises gradually become the facilitators of the sustainable development of

industries and the incubation of new business models. Huawei's products have been widely applied in a variety of sectors including consumers, governments, public utilities, transportation, and energy.

### Providing Aid for Visually Impaired Students



Visually impaired students benefit from Huawei's Desktop Cloud technology

*Huawei's virtual desktop system, Desktop Cloud, allows students at the Shanghai School for the Blind to transition between computers and classrooms.*

Visually impaired students find it challenging to switch between computers because they can hardly detect the differences of different computers and desktops. Huawei's virtual desktop technology allows for customization based on the needs of these students. As a result, students have no difficulty using different devices and can easily log in to a familiar user interface from any device.

In March 2013, Huawei completed the installation of 80 classroom ports for the Shanghai School for the Blind. Now students can choose a configuration that works best for them while Desktop Cloud technology keeps the computer configuration and

environment so that system login from home or at school, on a computer or on a tablet, is done the exact same way.

In addition to improving the education experience for the students, the Desktop Cloud has also led to easier maintenance of computers and electronics. In the past, students caused physical damage to the computers when moving between classrooms and crashed the operating system by frequently running the wrong programs. Staff at the school were constantly managing these operating challenges, restarting the computers, and ordering replacement equipment. Desktop Cloud technology can be managed remotely by a technician, cutting down staff time, and making operation and management easier.

Providing Desktop Cloud technology for the visually impaired students fits into our strategy of bridging the digital divide. Our virtual desktop technology provides these students with quick and easy access to connectivity and an improved educational experience. Until now, over 300 teachers and students in the school benefit from Huawei's Desktop Cloud systems.

*"The Desktop Cloud system gives us a chance to log in to the desktops easily in different classrooms with our conventional configuration and environment, and seamlessly connect with iPad and iPhone for an easier learning."*

—Pan Chunhui, a high school student

To further support the Shanghai School for the Blind and close the digital divide for more students, we plan to install the Desktop Cloud systems in 120 additional classrooms in 2014. We also plan to devote additional resources in 2014 to further develop and improve the Desktop Cloud technology to create convenience for more students.