Huawei Investment & Holding Co., Ltd.

2012 Sustainability Report

HUAWEI

Report Profile

Since 2008, Huawei Investment & Holding Co., Ltd. ("Huawei," "the company," or "we") has voluntarily released sustainability reports and disclosed sustainability initiatives each year so that the public can better understand and monitor the approaches and practices behind the company's sustainability efforts. Doing so is conducive to our sustainable development as we increase communication, awareness, and interaction between us, our stakeholders, and the general public.

This report covers all entities that Huawei either has control of or a significant influence over in terms of financial and operational policies. The scope of the entities in this report is consistent with the scope of organizations discussed in the *Huawei 2012 Annual Report*. Unless otherwise specified, this report describes the economic, environmental, and social performance of Huawei and its subsidiaries worldwide during the January 1, 2012 to December 31, 2012 reporting period. All data herein is derived from Huawei's official documents and statistical reports.

Core and additional indicators from the Global Reporting Initiative (GRI) G3.1 *Sustainability Reporting Guidelines* were applied to compile this report. Huawei engaged TÜV Rheinland, an external assurance provider, to verify the reliability, fairness, and transparency of this report as per AccountAbility AA1000 Assurance Standard (2008) and to issue an independent verification report (see Appendix III).

As an independent record of sustainability, this report is published online and in print in both Chinese and English in May 2013. (The previous report was published in May 2012.) The *2012 Sustainability Report* can be viewed and obtained at www.huawei.com.

We would like to thank all stakeholders for sharing their feedback and recommendations as we strive to continuously improve report quality.

For any report-related questions or suggestions, please contact:
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Contents

Focus on the Corporate Sustainability Strategy to Contribute to a Harmonious Business Ecosystem

The global economy remains sluggish this year, with slow growth and uncertainties. The effect of the financial crisis has begun to impact just about every area of society. Operational risks remain high due to the world's economic instability. We must embrace these challenges as we tackle complexities in the business environment. In terms of internal operations, we must maintain our commitment to customers, focus on strategy, simplify management, and improve efficiency with concerted efforts. In terms of external collaboration, we must coordinate closely with players both upstream and downstream to promote sustainability across the industry chain and create a sound, win-win business ecosystem.

To build up a harmonious business ecosystem, we must focus on customer needs and work with them to foster a positive business climate; cooperate closely with governments, the media, industry peers, and other stakeholders; and promote win-win development with our suppliers and partners. We do not seek to unilaterally maximize our interests or scale. Rather, we hold fast to balanced development and ardently assume social responsibilities. As a leading information and communications technology (ICT) solutions provider, Huawei leverages innovative technologies and expertise to achieve the following four sustainability-related strategic initiatives: Bridging the Digital Divide, Supporting Stable and Secure Network Operations, Promoting Environmental Protection, and Seeking Win-Win Development.

1. Bridging the Digital Divide through "Narrowband, Broadband, Talent, and Applications"

The digital divide has penetrated into every part of the economic, political, and social life, thereby thrusting itself to the forefront of social issues in the information age. All stakeholders, such as international organizations (including the UN), state actors, and the ICT industry chain, share a common goal of overcoming this disparity. As an ICT solutions provider, Huawei adopts a vision of enriching life and improving efficiency through a better connected world, and is duty-bound in bridging the digital divide around the globe. Our products and solutions have been deployed in over 140 countries and regions, serving one-third of the world's population and contributing to network construction in underdeveloped countries and remote areas. Our products and solutions combine to form a pipe system that is able to carry information from its generation, aggregation, transmission, and switching, all the way into the "information Pacific." Our innovative technologies and expertise enable us to expand pipe capacity, strengthen pipe capabilities, and optimize

pipe management, thus making pipes wider and smarter, ensuring better user experience, and enabling limitless connected possibilities by linking people to people, people to things, and things to things.

2. Supporting Stable and Secure Network Operations by Always Teaming up with Customers

Huawei attaches the highest priority to network stability and security, and places these responsibilities ahead of our own commercial interests. We know very well that ensuring network stability and security in any circumstance is the ultimate social responsibility that must be assumed by every network equipment provider; it is something that Huawei has been doing since our formation. We keep on challenging ourselves to enhance network stability so that communications can be ensured even during earthquakes, tsunamis, plagues, radioactive contamination, armed conflicts, and other critical events in which protecting lives and property is the first consideration. We fully understand the importance of cyber security as well as the concerns of governments and customers about this issue. In response, Huawei released the *Huawei Cyber Security White Paper* in 2012 to further clarify our cyber security policy and our variable practices in cyber security assurance. As telecom networks and information technologies continue to evolve, cyber security threats and challenges will become increasingly serious. We must always remain vigilant and pay close attention to this situation. By adopting effective measures to enhance product and service security, we help customers mitigate security risks and earn the trust of stakeholders.

3. Promoting Environmental Protection to Boost a Low-carbon and Circular Economy in the Industry Chain

Huawei has always been a staunch proponent and practitioner of environmental protection. In practice, we provide customers worldwide with green ICT solutions relating to communications, energy, electric power, transportation, finance, public utilities, and more. We communicate actively with leading global customers on environmental protection concepts, such as low-carbon, eco-friendliness, and circular economy. In accordance with our objectives of "Green Communications, Green Huawei, and Green World," we collaborate with players both upstream and downstream in the industry chain to build energy-efficient communications networks and IT infrastructures. Standing at the forefront of the green ICT industry, we help drive a virtuous cycle in environmental protection. In particular, we incorporate green approaches into all our activities, from product and solution planning, design, and R&D to manufacturing, delivery, and services. We also extensively apply green initiatives to our internal operations. Our new-generation cloud computing data centers

are built to industry-leading standards in energy efficiency. To realize green IT, we utilize increasingly efficient and energy-saving servers, storage, and network equipment. In addition, we collaborate closely with suppliers and partners through all available means to promote green technology innovations, thereby increasing our influence on the industry chain. We are committed to applying ICT services across various industries so as to promote an energy-saving, environmentally friendly, and low-carbon society.

4. Seeking Win-Win Development by Collaborating across the Industry Chain to Enhance the Capacity for Sustainability

Maintaining industry chain sustainability is a shared responsibility of all stakeholders throughout the industry chain, including Huawei. Huawei's growth hinges on social progress. We believe that cooperating with players both upstream and downstream is essential to building our unique competitive edge. It is through cooperation that we achieve win-win results and contribute to sustainable social development. We abide by ethical business practices, conform to international conventions and laws of local countries, and operate with integrity. We endeavor to develop with and integrate into local communities. By creating value for them, we support and promote harmony and prosperity of the communities in which we operate. Holding to the principle of "dedicated employees as the foundation," we encourage all employees to give full play to their expertise and provide varied paths to help them realize their individual value. We stress the importance of improving procurement efficiency and proactively explore service innovations. We are embarking on a transformation from focusing on "risk management in supplier CSR" to "efficiency management in supplier sustainability" as we better position ourselves in becoming a global and industry leader in sustainability.

Sustainable development and the green economy will provide more opportunities. We must seize these opportunities to build a better connected world, enrich life, improve efficiency, and contribute to society.

Sun Yafang (Signature)
Chairwoman of the Board

Responsibility Fulfillment and Harmonious Development

As a leading global ICT solutions provider, Huawei is committed to becoming an industry leader in sustainability. Not only do we fulfill sustainability requirements in our business operations, but we also integrate these requirements into our industry chain management activities. Following communication with stakeholders, Huawei transformed our corporate social responsibility (CSR) strategies into corporate sustainable development (CSD) strategies. These new strategies emphasize that we further our proactive approach by incorporating comprehensive and balanced economic, social, and environmental development into our business operations.

We focus on the following sustainability-related strategic initiatives: bridging the digital divide, supporting stable and secure network operations, promoting environmental protection, and seeking win-win development. Based on these four strategic initiatives, we effectively implement the requirements of the sustainability management system across the company and consolidate the building of process-based management systems according to these four initiatives. By implementing processes, we incorporate sustainability requirements into different business areas, including marketing, research & development (R&D), supply chain management, delivery, and service provisioning.

In 2012, we carried out a series of initiatives applying our sustainability strategy and made the following achievements:

1. Huawei leverages innovative technologies and expertise to promote communications for all and helps achieve broadband access for all. We place special emphasis on the development of highly efficient communications networks in underdeveloped countries and regions. By providing basic communications services, we succeeded in connecting people in remote areas with the information society, allowing users everywhere greater opportunities to improve their living standards. Moreover, we continuously nurture ICT talent and transfer knowledge. Through industry-leading ICT solutions, we enable people with different needs in different regions and industries to utilize information and communications technologies, thereby improving economic conditions, production efficiency, and quality of life so as to promote the development of society as a whole.

2. Along with the rapid development of the Internet, especially in regards to mobile networks, issues concerning network stability and security have become an increasingly common challenge facing the ICT industry and the world in general. Huawei attaches the highest priority to the stability and security

of customer networks and business activities. We continually invest in measures to support network stability and security and establish a comprehensive assurance system that covers policies, organizations, processes, management, technologies, and standards. In 2012, Huawei safeguarded communications security for around one-third of the world's population and supported the stable operations of 1,521 networks for more than 600 customers in over 140 countries, with more than 3,000 Huawei engineers worldwide providing around-the-clock support. We enhance product robustness and resistance to attacks through continuous innovations, and we support product testing, verification, and certification by independent parties to provide customers with internationally recognized approaches in security assurance.

3. Huawei provides end-to-end green solutions according to customer needs and incorporates ecological designs based on lifecycle assessments to improve the energy conservation features of our products. We promote the application of environmentally friendly materials and clean energy, and improve resource utilization to contribute to low-carbon and circular economic growth. For example, Huawei provided a customized hybrid power supply solution to help a customer reduce carbon emissions by 135,000 tons, resulting in an annual operating cost saving of US$5 million in 2012. We also integrate environmental protection requirements into our daily operations and activities. For instance, Huawei managed to save 10 million kWh of electricity annually and reduced carbon emissions by over 9,300 tons per year by adopting various energy conservation measures, including installing hot and cool air conduits in Huawei IT data centers and server rooms in addition to performing data-based operations and management.

4. Huawei strongly believes that we must cooperate with all stakeholders to achieve win-win development and ensure industry chain sustainability. The individual accumulated value each employee has to contribute comprises the total value Huawei has to offer. Huawei encourages all employees to give full play to their expertise and provides varied career paths to help them realize their individual value. Apart from emphasizing work performance, Huawei also strives to ensure employee well-being and satisfaction, and carries out various programs to help employees maintain a good work-life balance. We proactively contribute to countries and communities where we operate by implementing the E-Hope Program, the Telecom Seeds for the Future Program, and other charitable projects. Huawei abides by ethical business practices, conforms to international conventions and local laws, and operates with integrity as we endeavor to create a harmonious business ecosystem. Centered on customer needs, we listen intently to the voices of our customers and help strengthen their competitive edge and profitability. To increase

efficiency in our supply chain management, we cooperate closely with suppliers, develop supplier sustainability management standards and requirements, and integrate these standards and requirements into our procurement process and lifecycle management activities.

In the future, Huawei will further improve our sustainability management systems, enforce baseline requirements, and focus on increasing process efficiency. We will also align our mid- and long-term sustainability plans with our corporate business plan to more effectively achieve business goals. We will continue to enhance communication with stakeholders and make greater contributions to the harmonious and healthy development of the industry chain.

Deng Biao (signature)
Chairman of the CSD Committee

CHAPTER 01
Governance and Development

Progress

- Contribute economic benefits to society
- Focus on sustainability opportunities and challenges
- Continuously improve the sustainability management system

As a global company, Huawei undertakes social responsibilities by promoting harmonious social development rather than merely focusing on our own development. Huawei incorporates sustainability requirements into our business operations and establishes management systems to fulfill sustainability initiatives. Looking into the future, Huawei will remain dedicated to creating economic benefits for society. We will also focus on sustainability opportunities and challenges and continuously improve our sustainability management by working closely with stakeholders to build a harmonious business ecosystem.

无线产品线愿景、使命

Wireless Product Line: Vision and Mi

▶ 愿景：无线让人们的生活更美好
Vision: Better Wireless, Better Life

▶ 使命：
Mission:

1.1 Corporate Profile

Huawei is a leading global ICT solutions provider. Through our dedication to customer-centric innovation and strong partnerships, we have established end-to-end capabilities and strengths across carrier networks, enterprise networks, consumer, and cloud computing fields. We are committed to creating maximum value for telecom carriers, enterprises, and consumers by providing competitive ICT solutions and services. Our products and solutions have been deployed in over 140 countries, serving more than one-third of the world's population.

Huawei's vision is to enrich life and improve efficiency through a better connected world. By leveraging our experience and expertise in the ICT sector, we help bridge the digital divide by providing opportunities to experience broadband services, regardless of geographical location. Contributing to the sustainability of society, the economy, and the environment, Huawei creates green solutions that enable customers to reduce power consumption, carbon emissions, and resource costs.

Vision

Enriching life and improving efficiency through a better connected world.

Mission

To focus on our customers' market challenges and needs by providing excellent ICT solutions and services in order to consistently create maximum value for our customers.

Core Values

Our core values are deeply rooted in every aspect of our business. They are the internal driving force for the company and are our commitments to the ecosystem. These values enable us to provide effective services to our customers and to achieve our vision of "enriching life and improving efficiency through a better connected world."

Customers First

Huawei exists to serve our customers, whose demands are the driving forces behind our development. We continuously create long-term value for customers by being responsive to their needs and requirements. We measure our work against how much value we bring to customers, because we can only succeed through our customers' success.

Continuous Improvement

Continuous improvement is required for us to become better partners for our customers, improve our company, and grow as individuals. This process requires that we actively listen and learn in order to improve.

Integrity

Integrity is our most valuable asset. It drives us to behave honestly and keep our promises, ultimately winning our customers' trust and respect.
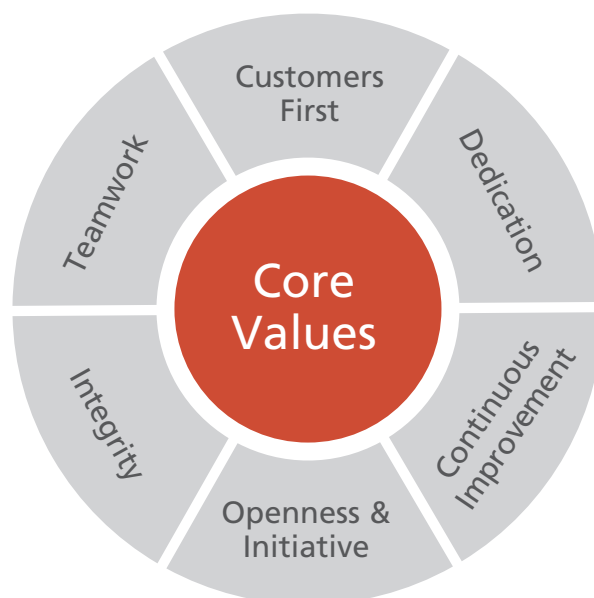
Dedication

We win customers' respect and trust primarily through our dedication. Dedication includes every effort we make to create value for customers and to improve our capabilities. We value employees' contributions and reward them accordingly.

Openness & Initiative

Driven by customer needs, we passionately pursue customer-centric innovation in an open manner. We believe that business success is the ultimate measure of the value of any technology, product, solution, or process management.

Teamwork

We can only succeed through teamwork. By working closely in both good times and bad, we lay the foundation for successful cross-cultural collaboration, streamlined inter-departmental cooperation, and efficient processes.

Global Operations of Huawei Investment & Holding Co., Ltd.

Huawei Headquarters

Accounting shared service center

Bidding center (Planning)

Supply center & Hub

R&D center

Training center

Technical support center
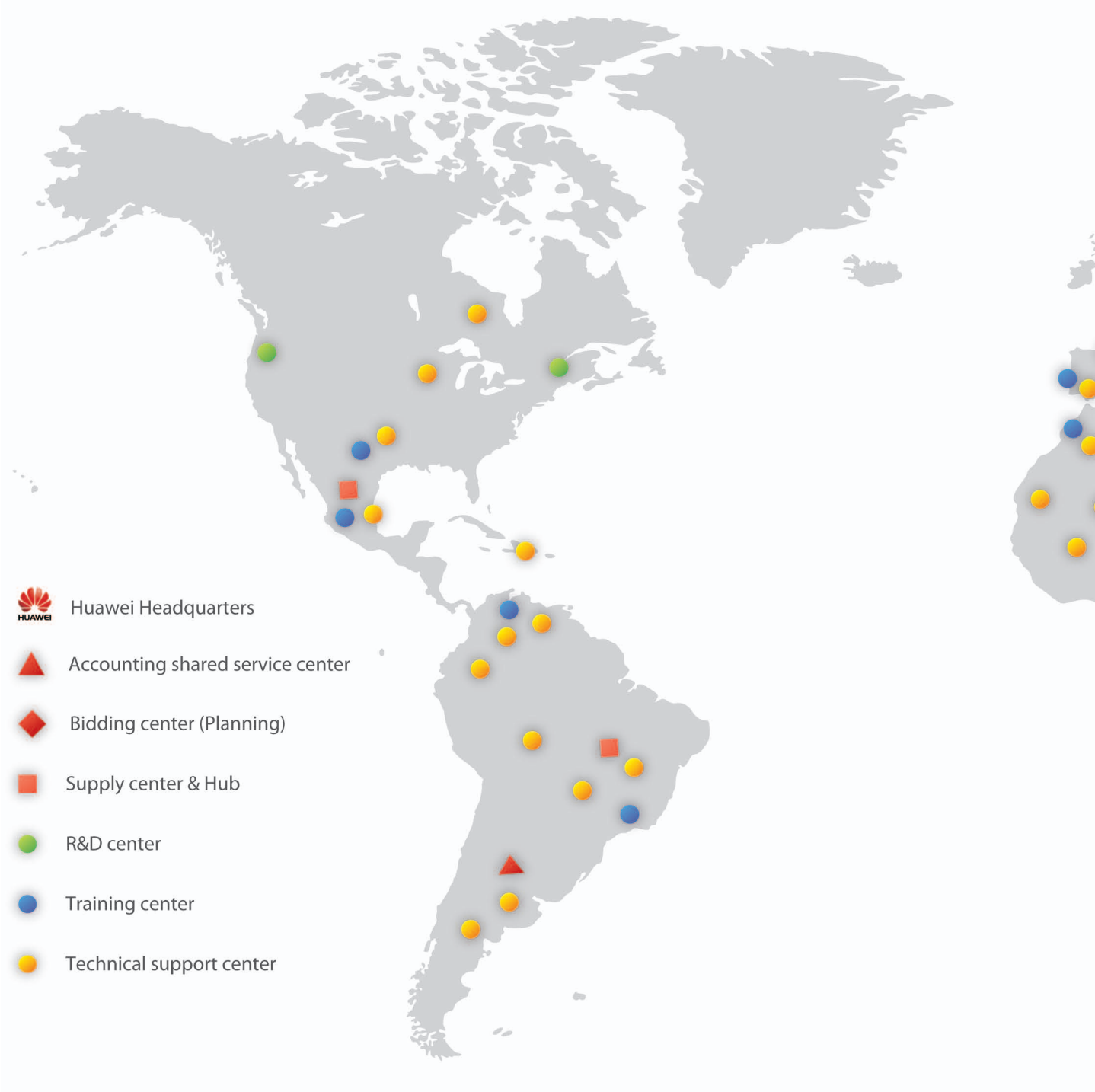
Governance and Development

Economic Performance

Five-Year Financial Summary

Revenue CAGR: 16%

CNY Million

250,000	220,198
200,000	203,929
182,548	
150,000	
146,607	
123,080	
100,000	
50,000	
0	

2008 2009 2010 2011 **2012**

Operating Profit CAGR: 4%

CNY Million

35,000	30,676
30,000	
25,000	
22,241	19,957
20,000	18,582
17,076	
15,000	
10,000	
5,000	
0	

2008 2009 2010 2011 **2012**

Cash Flow from Operating Activities CAGR: 53%

CNY Million

35,000	31,555
30,000	
25,000	24,188
20,000	24,969
17,826	
15,000	
10,000	
5,000	4,561
0	

2008 2009 2010 2011 **2012**

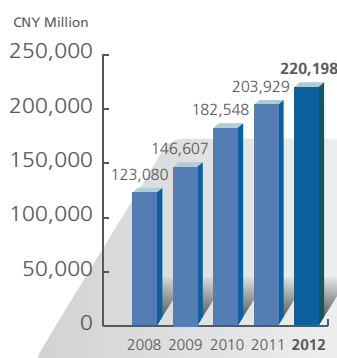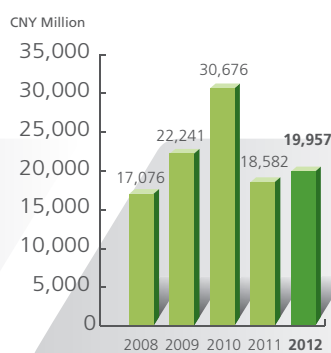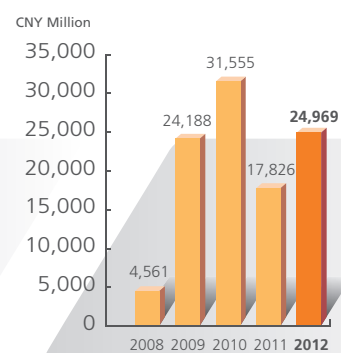**For more information, see the 2012 Huawei Annual Report.**

Awards and Honors:

- December 12, 2012, Huawei won the Data Center Blueprints award from Datacenter Dynamics (known as the Oscars of the data center industry) for Desktop Cloud Container Data Center project at the first Datacenter Dynamics Greater China Awards.

- November 21, 2012, Huawei won the Best Use of Traffic Management for Improving Customer Experience award for our VGS solution at the 2012 annual summit of the BBTM Congress. This is the second such prestigious award for Huawei after the company was presented with the Award for Most Innovative Service Launch Enabled by Traffic Management in 2011 along with MegaFon, the second largest carrier in Russia.

- November 13, 2012, Huawei received the Global Excellent Telecom Cloud Solution Provider of the Year award from Frost & Sullivan at the Global Community of Growth, Innovation, and Leadership 2012. This is the only award in the global telecom cloud market.

- October 19, 2012, Huawei was honored at the Broadband World Forum 2012 with the Best Broadband Access Award – Fixed from InfoVision for our Vectoring solution, which boasts the world's highest capacity.

- September 26, 2012, Huawei won the Best Cloud Contact Center Solution award at the 2012 China Best Customer Contact Center and CRM Awards. This honor demonstrates the industry's recognition of Huawei's efforts to boost the development of the contact center and customer service industries.

- September 21, 2012, Huawei was granted the Best Unified Communications and Collaboration Solutions Provider award at the 2012 China Enterprise Networking & Communications Conference and the China Enterprise Networking and Communications Awards (CENA).

- July 18, 2012, Huawei was presented with the Green Technology Award for its integrated green and energy-conserving outdoor site solution for network energy at CommunicAsia 2012. As a barometer of the communications industry in Asia Pacific, this award demonstrates the industry's recognition of Huawei's green energy solutions.

- June 21, 2012, Huawei was the only vendor granted the Best Optical Equipment Product – OTN award of the Next Generation Optical Awards from the Institute for International Research (IIR) at the WDM and Next Generation Optical Networking Forum in Monaco. This is another top industry innovation award for the Huawei OTN solution after winning the InfoVision award, 2009 Top Picks award from Light Reading (an authoritative international communications media agency), and R&D 100 Award (known as the Oscar for scientific and technological innovation).

- June 14, 2012, Huawei received a prestigious award for the Best Cloud Platform for Africa for our Galax Cloud Platform at the awards dinner of the Cloud Africa Summit hosted by Informa Telecom.

- May 23, 2012, Huawei won the Best LTE Commercial Performance and Best LTE Core Network Element awards at the 2012 LTE World Summit. This is the third consecutive year for Huawei to win these awards.

- May 22, 2012, Huawei was granted the Solution Excellence Award from TMF for our VGS solution. This is the second time Huawei has won this award.

- May 1, 2012, acknowledging the company's exceptional commitment to the Middle East technology landscape, Huawei was distinguished as Managed Services Provider of the Year in Telecoms during the Network World Middle East Awards 2012.

- April 10, 2012, Huawei won Certificate of Merit for excellent site solution designs in "Best in Class Site Design" Beauty Contest organized by Deutsche Telekom.

- January 30, 2012, Huawei won the Best Backhaul Solution for Africa award for our outstanding contributions to the construction of IP backhaul networks in South Africa, which raised Africa's communications technology level to international standards.

Sustainability Awards in 2012

Name of Award	Awarding Body
• Support and Improvement in Quality of Education Award – E-Hope Program in India • Support and Improvement in Quality of Education Award – Telecom Seeds for the Future Program in Indonesia • Corporate Social Responsibility in Education – E-Hope Program in India • Green IT Initiative and IT Excellence Award – Huawei India	World CSR Day
• Certificate of Merit on CSR	Global CSR Forum
• 2012 World Telecommunication and Information Society Award	International Telecommunication Union
• Ranked first among the China domestic Top 100 Private Enterprises in CSR (2012)	CSR Research Center under the Institute of Economics of the Chinese Academy of Social Sciences (CASS)
• 2012 CSR Best Practice Award for the supply chain sustainability management	United Nations Global Compact China Network
• 2012 Community Services Excellence Award	Association of Marketing and Communication Professionals
• Green Technology Award	CommunicAsia in Singapore
• Supply Chain Management Best Practices	CSR Europe

1.2 Corporate Governance

At Huawei, we advocate "customers as our focus and dedicated employees as our foundation." We will continue to improve our corporate governance structure, organization, processes, and appraisal systems to achieve long-term effective growth.

Shareholders

Huawei Investment & Holding Co., Ltd. (the "company" or "Huawei") is a private company wholly owned by its employees. Shareholders of Huawei are the Union of Huawei Investment & Holding Co., Ltd. (the "Union") and Mr. Ren Zhengfei. The Union contributed 98.82% of the company's total share capital.

Through the Union, the company implements an Employee Shareholding Scheme ("the Scheme"), which involved 74,253 employees as of December 31, 2012. They are represented by and exercise their rights through elected representatives (the "Representatives").

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 strategic issues. The BOD has established the Human Resources Committee, the Finance Committee, the Strategy & Development Committee, and the Audit Committee to assist and support BOD operations.

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 roles and responsibilities of the Supervisory Board include overseeing the company's financial and operational performance, monitoring the responsibility fulfillment of BOD members and senior management, as well as the standardization of BOD operations. Members of the Supervisory Board attend BOD meetings as non-voting participants.

For more information, see the 2012 Huawei Annual Report.
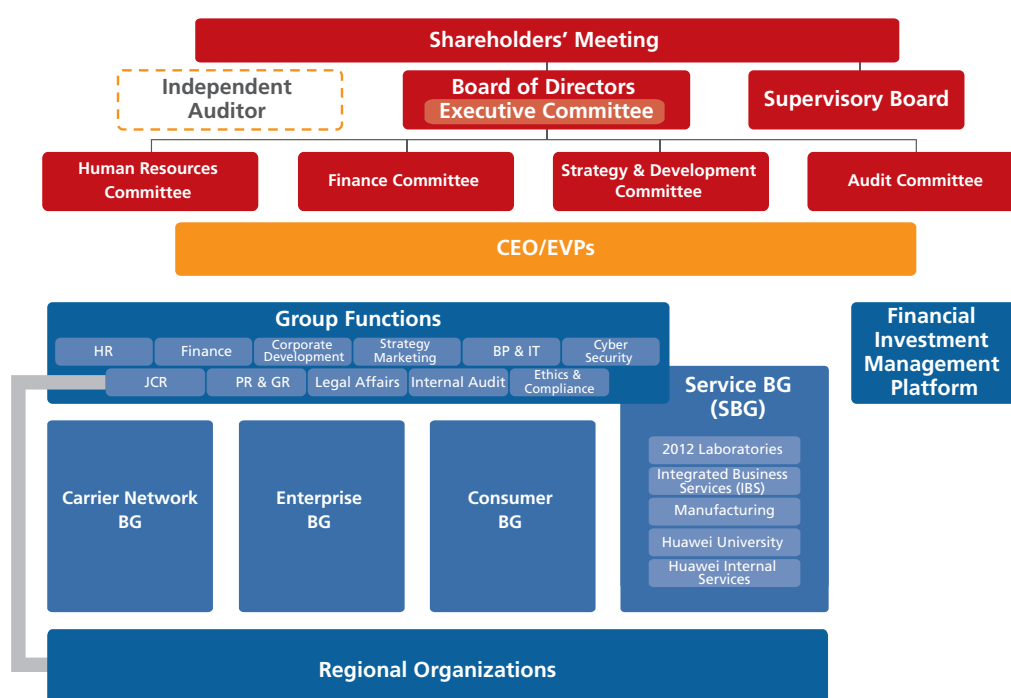
Corporate Governance Organizational Structure of Huawei

1.3 Stakeholder Engagement

Stakeholder engagement has become ingrained into Huawei's routine sustainability work and is one of Huawei's fundamental practices. Identifying stakeholders, promoting stakeholder engagement, and maintaining smooth communication with stakeholders are crucial to Huawei's sustainability activities. In order to promptly respond to stakeholder requirements, Huawei has developed and effectively implemented stakeholder communication and management processes.

In 2012, Huawei entrusted a third party to survey stakeholders using various methodologies based on the AA1000 Stakeholder Engagement Standard (SES). The goal was to better understand stakeholder requirements and enhance promptness, accuracy, and completeness when responding to their expectations.

Mechanisms for Huawei to Communicate with Stakeholders

Stakeholder	Topic Concerned	Communication Channel
Customers	Sustainability strategy Employee health and safety Operation in compliance with applicable laws and regulations Green products Product safety Supply chain capability development Supplier localization and diversification Sustainability management system Communications and information services for all	Customer satisfaction surveys Meetings and workshops Industry exhibitions and forums Customer visits or meetings
Employees	Employee health and safety Employee training and development Employee compensation and benefits Employee communication and engagement Operation in compliance with applicable laws and regulations Green products	Regular meetings with supervisors Employee satisfaction surveys Internal lines of communication such as bulletin board systems (BBSs), CEO mailbox, open days, discussions with experts from the Employee Relationship Department, and the suggestion mailbox Communication with employee representatives
Shareholders/Investors	Intellectual property rights Employment, hiring, and respect for workforce diversification Effective resource utilization Response to climate changes Pollution prevention Creation of opportunities through education Future-oriented broadband	Meeting for electing shareholder representatives Shareholder meetings
Suppliers (Partners)	Supplier policies and requirements Supplier localization and diversification Green products Product safety Response to climate changes Circular economy	Regular meetings Supplier sustainability training Supplier conferences Workshops and forums
Research institutes/Academia	Product safety Employee training and development Protection of consumer rights and interests Future-oriented broadband Operation in compliance with applicable laws and regulations Intellectual property rights Cyber security	Publication of reports Interviews Workshops

Governance and Development

Stakeholder	Topic Concerned	Communication Channel
Governments	Stakeholder communication and response Corporate governance Sustainability strategy Employment, hiring, and respect for workforce diversification Future-oriented broadband Response to climate changes Cyber security	Regular meetings Workshops Compliance self-checks
Industry/Standards associations	Protection of consumer rights and interests Pollution prevention Intellectual property rights Supply chain capability development Stakeholder communication and response Green products Ecological protection	Workshops and forums Publication of research achievements Participation in activities organized by associations
Industry peers	Communications and information services for all Green products Supplier localization and diversification Operation in compliance with applicable laws and regulations Response to climate changes Sustainability strategy Broadband inclusion for all	Industry forums Annual meetings
Media	Stakeholder communication and response Circular economy Response to climate changes Ecological protection Product safety Supplier localization and diversification Sustainability strategy	Regular meetings Giving interviews and information disclosure
Charitable groups/Non-governmental organizations (NGOs)	Creation of opportunities through education Promotion in sustainability of the community environment Giving back to local communities Protection of consumer rights and interests Ecological protection Communications and information services for all Broadband inclusion for all	Regular meetings Cooperation projects Publication of information

Stakeholder	Topic Concerned	Communication Channel
Consumers	Operation in compliance with applicable laws and regulations Product safety Pollution prevention Intellectual property rights Cyber security Creation of opportunities through education Giving back to local communities	Consumer and business research Consumer satisfaction surveys Regular meetings Follow-up visits
Communities	Response to climate changes Pollution prevention Effective resource utilization Protection of consumer rights and interests Product safety Stakeholder communication and response Circular economy	Meetings Follow-up visits Information disclosure
Banks/Insurance companies	Stakeholder communication and response Corporate governance Sustainability strategy Employee health and safety Response to climate changes Circular economy Ecological protection Green products	Regular meetings Workshops

Case Study:
Huawei Hosted the Connected City – the Greener Future Workshop with GeSI

Huawei hosted the Connected City – the Greener Future Workshop with the Global e-Sustainability Initiative (GeSI) in Shenzhen, China on October 16, 2012. Leading figures in the communications and sustainability fields attended the workshop to discuss how to apply ICT solutions in the energy, transportation, and other industries to transform the challenges faced in cities into opportunities to develop the green economy.

Luis Neves, the Chairman of GeSI, said: "The Connected City – the Greener Future Workshop provides a platform for enterprises and organizations to share green initiatives, sustainability experiences, and best practices. It also helps us enhance our awareness of leveraging ICT to promote mutual and sustainable development for society and the environment."

Scene from the GeSI Workshop

Governance and Development

Analysis of Material Topics

Huawei prioritizes the main topics of concern to stakeholders according to the results of stakeholder survey conducted in 2012. The following matrix lists the sustainability-related material topics according to Huawei's strategies and operations.

According to the stakeholder survey, the top five topics of concern to stakeholders include employee health and safety,

communications and information services for all, response to climate changes, supplier policies and requirements, and network stability and security.

For more information on how Huawei responds to material topics that are of high-level concern to stakeholders or are significant to Huawei's strategy, see the following sections of this report:

High — Level of Stakeholder Concern

- Response to climate changes
- Supplier policies and requirements
- Stakeholder communication and response
- Supplier localization and diversification
- Employee health and safety
- Communications and information services for all
- Network stability and security
- Sustainability strategy
- Product safety
- Intellectual property rights
- Green products
- Employment, hiring, and respect for workforce diversification
- Giving back to local communities
- Ecological protection
- Employee compensation and benefits
- Circular economy
- Broadband inclusion for all
- Protection of consumer rights and interests
- Future-oriented broadband
- Effective resource utilization
- Supply chain capability development
- Promotion in sustainability of the community environment
- Employee training and development
- Creation of opportunities through education
- Employee communication and engagement
- Operation in compliance with applicable laws and regulations
- Pollution prevention
- Sustainability management system
- Corporate governance
- Standards setting and development
- Public policies
- Response to other environmental problems

Low — **Strategy Significance** — **High**

○ – Governance and Development
✦ – Bridging the Digital Divide
◆ – Supporting Stable and Secure Network Operations
■ – Promoting Environmental Protection
● – Seeking Win-Win Development

1.4 Sustainability Management

Vision of Sustainability Management

To bridge the digital divide and promote the harmonious and sustainable development of the economy, society, and environment.

Sustainability Strategy

Huawei has accomplished outstanding achievements in terms of sustainability over the past several years. In 2012, in order to concentrate our advantageous resources on key fields, we consolidated our original eight sustainability-related strategic initiatives into four after thoroughly considering the evaluation results of sustainability risks and opportunities, communicating with stakeholders, and fully aligning these initiatives with the corporate strategy.

Mission of Sustainability Management

To establish an excellent sustainability management system, operate with integrity and in compliance with applicable laws and regulations, continuously enhance communication with stakeholders, promote a harmonious business ecosystem, ensure sustainable development, and contribute to our customers and society.

- Bridging the Digital Divide
- Caring for Employees
- Fair Operations
- Environmental Protection
- Social Contribution
- Supply Chain CSR Management
- Stakeholder Communication
- Safe Operations

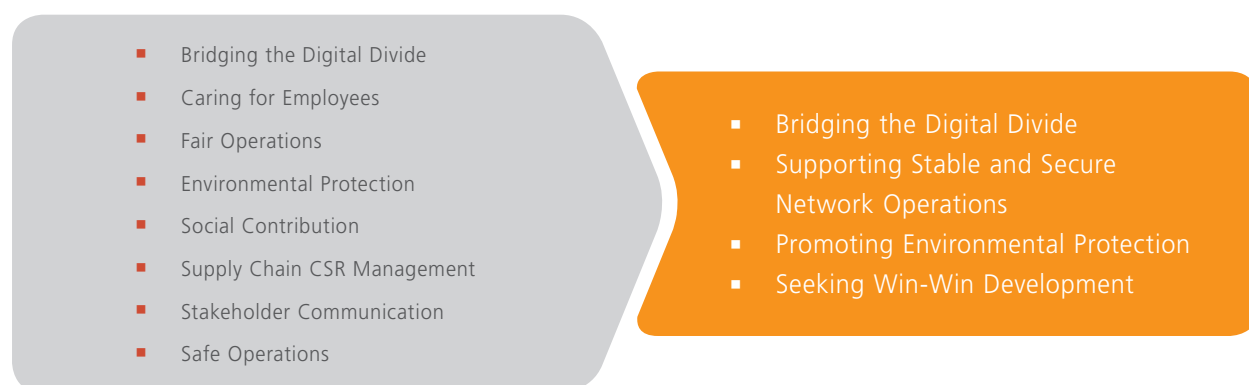- Bridging the Digital Divide
- Supporting Stable and Secure Network Operations
- Promoting Environmental Protection
- Seeking Win-Win Development

Bridging the Digital Divide	- Huawei provides people across all geographic areas with ease of access to voice communications services, ensuring communications for all. - Broadband inclusion for all, to ensure that the Broadband is available everywhere and to promote future-oriented information and communication technology to address global challenges. - Huawei establishes training centers and launches joint teaching initiatives to develop local talent, transfer knowledge, and encourage regional development of and participation in the digital community. - Huawei provides customized ICT applications and solutions that suit individual, corporate, and regional requirements to improve economic performance, quality of life, production efficiency, and competitiveness.
Supporting Stable and Secure Network Operations	- Huawei develops capabilities and mechanisms for ensuring network and business stability from the perspective of products and solutions. - Huawei establishes hierarchical emergency assurance organizations and operation mechanisms to ensure smooth communications. - By fully considering service continuity and network resilience, Huawei enhances the robustness and protection capabilities of our products through continuous innovation. Huawei supports product testing, verification, and certification by independent parties to provide customers with internationally recognized security assurance approaches. - Huawei maintains openness and transparency by proactively communicating and cooperating with stakeholders, and complies with applicable security standards, laws, and regulations.

Governance and Development

Promoting Environmental Protection	▪ Huawei prioritizes environmental protection requirements during production, service, and business activities. We assess the impact of product designs, product recycling, resource and energy consumption, greenhouse gas emission, waste disposal, and other activities, and we adopt innovative solutions to continuously reduce negative impacts on the environment, thus driving low-carbon and circular economic growth. ▪ Huawei pushes forward green initiatives with partners and increases positive influence on the industry chain. ▪ Huawei organizes charitable activities to promote green technology innovations for the industry chain.
Seeking Win-Win Development	▪ Huawei provides employees with varied career paths based on their special skills to help them realize their individual value. ▪ Huawei enthusiastically contributes to the communities and countries in which we operate. ▪ Huawei adheres to business ethics by opposing corruption, dumping, and monopolies, and operates with integrity and in compliance with applicable laws and regulations. ▪ Huawei focuses on sustainability risk management during our operating activities and service processes and has gradually become a sustainability leader in the industry and the world. ▪ Huawei closely works with suppliers to develop standards and benchmarks. We have shifted the focus from risk management to efficiency management and taken a leading position in sustainability in the industry chain.

To facilitate Huawei's sustainability efforts and ensure that the sustainability strategy is executed in a top-down manner across the globe, Huawei set up the Corporate Sustainable Development (CSD) Committee, which comprises more than 20 senior managers from Huawei's functional departments.

The sustainability supporting departments assist the sustainability system management departments and the departments in charge of fulfilling the sustainability strategy in carrying out the CSD work, and they provide necessary resources.

Major Responsibilities of the CSD Committee:

Organizes, coordinates, and supervises the establishment, implementation, and maintenance of the sustainability management system; plans and develops the sustainability strategy; and supervises the execution of the sustainability strategy during business operations.

Major Responsibilities of Departments Under the CSD Committee:

As dedicated parts of the CSD Committee, sustainable development management departments assist the CSD Committee in developing strategic and business plans and implementing Huawei's sustainability strategy, objectives, and management plans.

The departments in charge of fulfilling the sustainability strategy are functional in nature and relate directly to Huawei's sustainability strategy. These departments are in charge of implementing CSD strategies, objectives, and management plans.
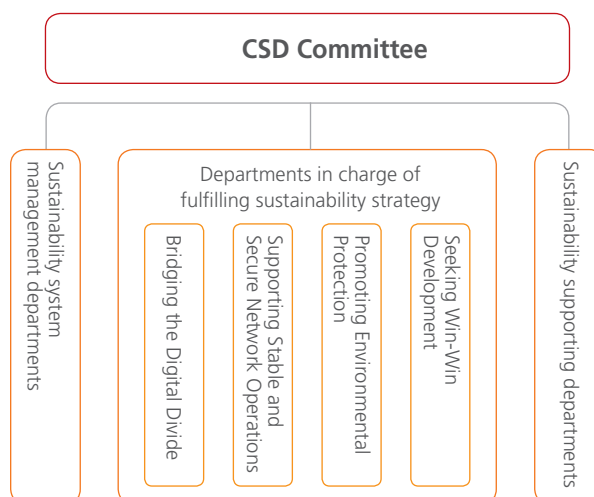
Organizational Structure of the CSD Committee

Sustainability Management System

Huawei has established the sustainability management system based on ISO26000 and other international standards. We have completed the following activities:

- Developed the sustainability policy and set the management tone and execution standards to guide the direction for business departments.

- Optimized organizations and established organizations to support system operations; developed processes to institutionalize sustainability management practices and guide the sustainability efforts, thus ensuring closed-loop management based on the plan-do-check-act (PDCA) management model.

- Built up the corporate culture; conducted sustainability-related publicity and training activities to enhance awareness and involve all employees in the sustainability efforts.

- Systematically reviewed sustainability requirements and established baselines to guide business operations.

- Identified high-priority fields based on the analysis of the current business situation and industry trends; managed these fields by setting up specific projects or defining related work priorities.

We have continuously optimized our sustainability management system and are dedicated to providing convenient and efficient platforms to support the company's business operations.

Risks and Opportunities

Huawei analyzes its sustainability risks and opportunities on a regular basis. Huawei has formulated CSD risk identification methodologies. Additionally, Huawei acknowledges and incorporates stakeholder requirements in the systematic identification of risks. Sustainability risks and opportunities are key factors we consider as we develop our strategies and plans. They are also important elements we use to enhance our approaches in sustainability management.

Architecture of Huawei's Sustainability Management System

Governance and Development
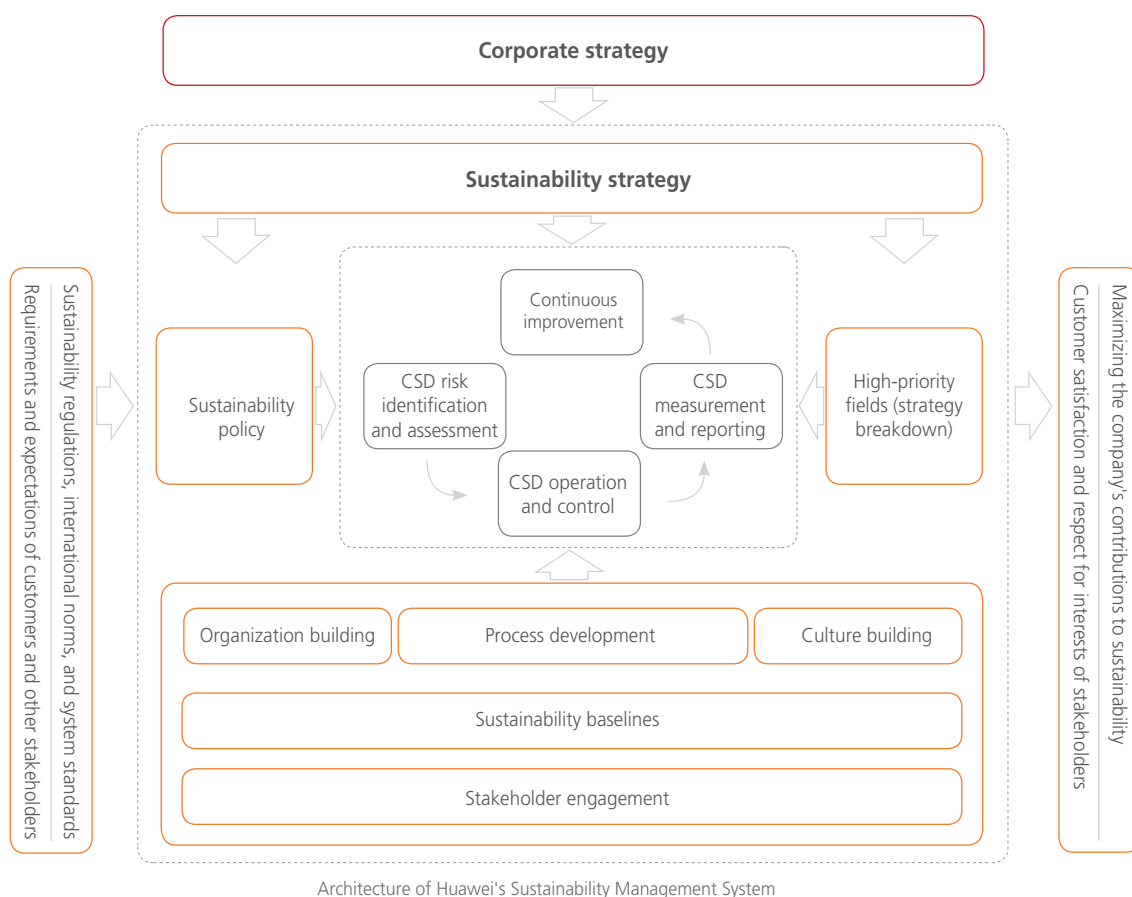
Sustainability Plan

Huawei has developed a strategic roadmap for sustainability and incremental development objectives based on our sustainability strategy. We have also determined Huawei's future direction for sustainability. Huawei's medium- to long-term plan for sustainability is as follows:
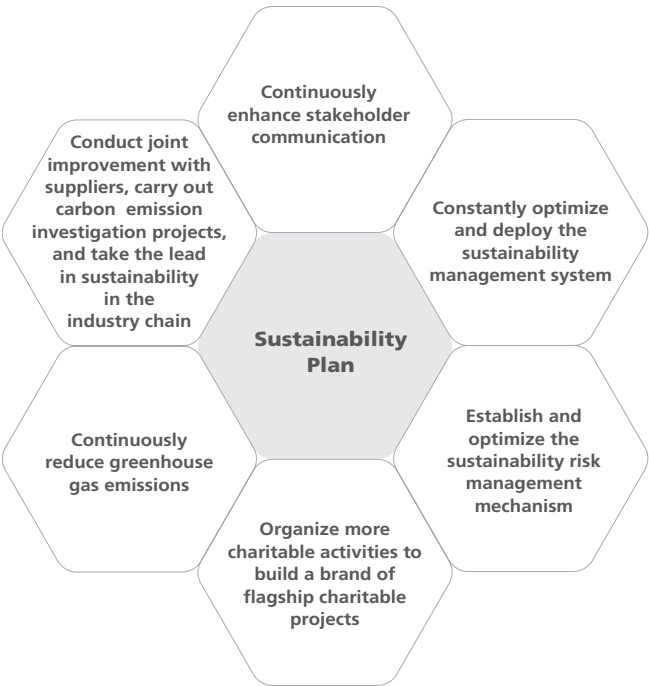
Huawei's Sustainability Work Priorities in 2012:

1. Continued to bridge the digital divide and adopted innovative ICT technologies to promote social development.

2. Continuously focused on supporting network stability and security and established a comprehensive network assurance system that considers numerous factors, including organizational structures, processes, and IT tools.

3. Continuously organized energy conservation and emission reduction projects on Huawei's campuses.

4. Increased investments in employee benefits, cared for employees, and implemented moral education and compliance initiatives for employees.

5. Enhanced stakeholder communication and engagement, thereby improving stakeholder communication efficiency.

6. Enhanced the development of supplier management organizations and capabilities. Laid down the principle of "achieving all-around sustainability" and shifted the focus of supplier management from risk management to efficiency management.

7. Actively participated in charitable activities in all locales and continued support for the E-Hope Program and the Telecom Seeds for the Future Program.

8. Further developed and implemented anti-bribery policies and processes, and focused efforts on internal audits and compliance with *Business Conduct Guideline (BCG)*.

9. Required its Consumer Business Group to pass the SA8000 certification.

10. Continuously optimized the sustainability management system.

External Commitments and Initiatives

Joined the Global Compact in 2004.

Joined GeSI in 2008.

Joined the Broadband Commission in 2010.

Joined CSR Europe in 2011.

CHAPTER 02
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

The International Telecommunication Union (ITU) once remarked: "In the 21st century, affordable broadband access to the Internet is becoming as vital to social and economic development as networks like transport, water, and power." However, the disparities in terms of information-based developments across different geographical areas create a huge gap in accessibility to communications and Internet services, which in turn leads to inequitable opportunities for development in some areas. These imbalances are referred to as the digital divide, which has become so prominent that it has penetrated into just about every aspect of economic, political, and social life, becoming an issue arousing great concern in the information era. Therefore, bridging the digital divide has become a common goal for international organizations, including the UN, as well as for countries around the globe. Leveraging our own innovative technologies and expertise, Huawei, as a leading global ICT solutions provider, is committed to ensuring that communications and information services are accessible to all.

As part of Huawei's sustainability strategy, our Bridging the Digital Divide initiative is fully aligned with our core corporate strategy: the Pipe Strategy. The "pipe" refers to an information system that focuses on technology and industry perspectives. The system carries information from its generation, aggregation, transmission, and switching, all the way into the "information Pacific." As digital floods approach, we enhance pipe capacity, increase pipe capabilities, and optimize pipe management to deliver ever wider pipes that enable ubiquitous broadband availability. It is through these efforts that we enrich life through communication and improve work efficiency. We focus on four areas in helping society bridge the digital divide: communications for all, broadband inclusion for all, nurturing ICT talent, and application of ICT technologies.

2.1 Communications for All

Huawei helps construct communications networks around the world using innovative technologies and customized solutions. Huawei's products and solutions have been deployed in over 140 countries and regions, serving one-third of the world's population. Among the countries and regions Huawei serves, many are underdeveloped and feature harsh geographic environments. Huawei's products and solutions enable people across various types of regions to easily access voice communications services, thereby contributing to bridging the digital divide.

Case Study:
Huawei's 2T WDM Prototype Supports Voice Calls for Two Billion People at the Same Time

In July 2012, Huawei launched the world's first 2T Wavelength Division Multiplexing (WDM) prototype with a capacity as high as 56 Tbit/s. Compared to the 100 Gbit/s per channel data rate offered by industry peers' commercial systems, our prototype increases the rate by twenty-fold to 2 Tbit/s and expands the fiber capacity to 56 Tbit/s, which means it is possible for two billion people to communicate simultaneously through just one pair of fibers.

By focusing on customer needs and offering customized solutions, Huawei helps underdeveloped countries and regions develop efficient communications networks that connect people in outlying areas to basic communications services. In so doing, Huawei enriches the life of people in remote areas and provides opportunities for improved livelihoods.

Case Study:
Huawei Helps Four Million Somalis Access the Information Society

Plagued by incessant civil wars and frequent natural disasters, Somalia faces harsh economic challenges. The standard of living and level of ICT development in this country has remained at fairly low levels for quite some time.

Since 2004, Huawei has built more than 2,000 GSM base stations for mainstream carriers in Somalia. After gaining an in-depth understanding of the actual scenarios experienced in Mogadishu, the capital of Somalia, Huawei provided a customized GSM security backup solution for the customer. With our solution, people can now get in touch with their families and friends and obtain timely and necessary help in case of emergency.

In 2011, Huawei began deploying 3G networks in key cities in Somalia, including Mogadishu, Hargeisa, and Bosaso, further enriching the information and communications lives of Somalis. By 2012, Huawei's products and solutions served approximately four million of the country's residents, making information easily accessible for the local people and improving their living standards.

In short, Huawei's efforts have significantly enhanced the development of Somalia's communications industry. In the event of an emergency or crisis, such as armed conflicts, Somalis can communicate with one another in a timely and efficient manner. During the turmoil and chaos of war, Somalis now have modern communications networks over which they can transmit information concerning regions in conflict, considerably reducing the risk for civilian casualties. In outlying areas, more Somalis are able to communicate freely with their family and friends through their personal phones. With respect to production and business operations, more and more Somali farmers can obtain information regarding the agricultural markets by phone, seizing greater opportunities to improve their livelihood.

In addition, by continuously providing training and transferring skills to customers, Huawei has trained more than 100 professional telecom engineers for local communities. Some of these engineers have become experts, driving further ICT development in Somalia.

Case Study: Huawei's Fixed Wireless Terminals Make Communications Easier for Sri Lankans

Sri Lanka is a beautiful island country known as the "Pearl of the Indian Ocean," however its telecommunications industry (particularly fixed telephony) is limited and requires development. In Sri Lanka, there are considerable delays evolved when applying for a fixed-line telephone, and phone bills are unaffordable to most people in the country. In order to keep in close contact with the more than 1.5 million Sri Lankans working abroad, many people in Sri Lanka make calls using fixed wireless terminals due to their low service charges. Therefore, wireless communications services are prevalent in Sri Lanka.

Huawei's fixed wireless terminals are widely applied in Sri Lanka, providing superb wireless communications services for local people. In island countries where fixed network deployments are difficult and expensive, Huawei provides fixed wireless terminals to make communications easier for locals, contributing greatly to bridge the digital divide.

2.2 Broadband Inclusion for All

As a member of the Broadband Commission for Digital Development of the UN, Huawei leverages its technological strengths to lead global broadband development trends, promote the formulation of related policies and measures, and proactively

Case Study: Huawei Builds Mobile Broadband Networks in Polar Regions

Longyearbyen, the northernmost city in the world at 78°13', is situated on Svalbard, a group of islands between mainland Norway and the North Pole. In March 2011, Huawei went all out to help Carrier T in Norway in building an LTE network in Longyearbyen. During network deployment, major obstacles needed to be addressed. First, it was essential that equipment be capable of enduring extreme climates. Situated in the Arctic Circle, Svalbard has both polar days and midnight sunshine, with temperatures as low as 46°C below zero, which inflicts extreme conditions on network equipment. Second, Svalbard is approximately 2,000 km away from mainland Norway, where the carrier's network center is located. For wireless access equipment to be deployed on the islands, the transmission latency of LTE base stations would be very long, and people's access to information would be negatively affected. Third, the remote geographical location added difficulty to the transport of human resources and materials from mainland Norway.

In surmounting these difficulties, Huawei used state-of-the-art equipment to protect against freezing conditions in the polar region. In addition, Huawei adopted a combination of transportation modes, including helicopters, large forklifts, vans, and snow sledges, to transport human resources and materials to installation sites. To address the long transmission latency of LTE base stations, Huawei and Carrier T optimized configuration parameters and leveraged different algorithms and advanced equipment to reduce latency to an acceptable level. Through these efforts, Huawei and Carrier T completed the cutover of all five UMTS/LTE sites and the building of a new site on Svalbard within just one month.

The LTE network on Svalbard was officially available in March 2012. Mainstream media outlets in Norway reported on the completion of the LTE network. The successful deployment of the LTE network enables citizens and tourists in the world's northernmost city to enjoy high-quality mobile broadband. This LTE network provides better communications services to local citizens and is expected to bring tremendous benefits to them.

Bridging the Digital Divide

participate in broadband construction in different regions. Thanks to our unremitting efforts, Huawei has become an important driving force behind bridging the broadband divide. Huawei is dedicated to building broad information pipes to enable ubiquitous broadband availability. We actively promote future-oriented information and communications technologies to enable limitless connected possibilities by linking people to people, people to things, and things to things.

A national broadband network will undoubtedly enhance the ICT development of a country. Huawei's national broadband network solution meets the requirements of both developed countries and developing countries in terms of network architecture technology and service content. Huawei's solution can connect the unconnected and enrich the connected, thereby driving economic growth through communications. While helping developed countries further expand their information-based economy, Huawei is also dedicated to helping developing countries enhance their capability in technological participation and diversify patterns of economic growth.

📁 Case Study: Huawei Deploys a High-speed Network that Helps Africa Access the Information World

Over the years, Huawei has been devoted to developing the communications industry and bridging the digital divide in Africa. While voice communications services are basically accessible to all, local people are in desperate need of high-speed mobile broadband networks to understand the rich and colorful information world and improve their economic and living standards.

In 2012, Huawei helped Carrier U in Angola deploy a 100G automatically switched optical network (ASON) using advanced mobile network transmission technology. This is Africa's first 100G WDM optical network, signifying the official deployment of 100G networks on the African continent. The ASON enables transmission at a super large capacity over an ultra-long distance and features high network reliability and efficiency. This network will increase the slow speed of past mobile networks and significantly enhance mobile broadband speed in Angola.

The promotion and popularity of Huawei's high-speed broadband technology will connect the African continent more rapidly and efficiently, offer smarter public services and a more convenient work environment, and deliver higher efficiencies for enterprises and organizations, thereby promoting economic development in Africa.

2.3 Nurturing ICT Talent

Due to disparities in Internet infrastructure and technology among different countries and regions, there are significant discrepancies in the availability of information and resources. Such discrepancies not only impact the economic development and international competitiveness of a country, but they also lead to unequal opportunities for different social groups, causing a knowledge gap or even polarization between rich and poor. 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.

As a key Huawei ICT talent development project, the Telecom Seeds for the Future Program aims to develop local ICT talent, transfer knowledge, promote a greater understanding of and interest in the telecommunications sector, and encourage regional building and participation in the digital community. To date, the program has granted scholarships to and organized training, internships, and work experience for thousands of students from 50 universities across 14 countries.

Case Study:
Huawei Nurtures ICT Talent to Facilitate Economic Transformation in Malaysia

Huawei established the Huawei Malaysia Global ICT Training Center in Kuala Lumpur, the first global ICT training center of its kind outside of China. The center is aimed at positioning Malaysia as a venue of choice for global professional training in next-generation ICT technologies. In conjunction with the launch, Huawei also signed agreements with ten local universities that will initiate the establishment of ten Huawei University Training Laboratories in each of the universities to work towards our goal of training 10,000 Malaysian ICT professionals by 2016.

In line with the Malaysian government's strategic thrusts under the Talent Roadmap 2020, Huawei adopted our own Human Capital Development Program. For example, Huawei has partnered with the Multimedia Development Corporation to promote various initiatives, which serve as a catalyst between universities and enterprises, to accelerate ICT talent development in Malaysia.

Najib Razak, Prime Minister of Malaysia, noted, "Talent is at the center of economic and social development. The attention from Huawei and the Multimedia Development Corporation to ICT professionals is of vital importance to developing future leaders and driving our economic transformation programs. We hope that such a partnership will continue."

Case Study:
Huawei Launches a Career Certification Program Covering All ICT Technical Fields to Foster ICT Talent

The rapid development of the ICT industry has created a situation in which high-quality professionals are always in short supply. Employers prefer candidates who have received career training or passed professional certifications in specific fields. To adapt to this trend, Huawei has launched the industry's only career certification program encompassing all 11 ICT technical fields, including router & switch, wireless, cloud computing, and security. In each field, career certification consists of three levels: associate, professional, and expert. Huawei's certification program is designed based on the career development lifecycle of ICT talent. The program offers hierarchical capability improvement solutions to help students gain competitiveness in the job market by enhancing comprehensive technical talent geared specifically for the ICT industry. Huawei also provides free training opportunities with the Huawei Certified Datacom Associate (HCDA) program, which is well received among students.

For more information about the nurturing of ICT talent, see the chapters describing Huawei's charitable activities in the following sections.

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 products have been widely used in such sectors as consumer products, government and public services, transportation, energy, media, and e-commerce.

Application of Huawei Products in the Consumer Field

Case Study: Huawei's M2M Technology Brings Convenience to Consumers

(Application scenarios of M2M products)

In the mobile broadband device field, Huawei is dedicated to providing a variety of superior mobile broadband products that empower consumers with ubiquitous connectivity.

By the end of 2012, hundreds of millions of people across more than 140 countries and regions enjoyed ease of access to the Internet made possible through Huawei products, services, and solutions. Our continuous investments have led to innovations in the fields of 2G, 3G, and 4G, and to the world's first USB data card, the world's first plug-and-play HiLink data card, the world's first LTE-enabled multimode data card, and more. Coupled with our cutting-edge technologies, leading designs, and continuous innovations, Huawei develops high-quality products that deliver first-rate customer experiences. Our mobile broadband has been integrated into all aspects of life.

◇ At home, consumers enjoy high-speed Internet access using Huawei's data cards, which offer an experience comparable to that of fixed broadband. Consumers can also use the M2M communications technology to build a smart home network easily and efficiently. With this technology, all devices at home are equipped with communications and Internet access capabilities to create a unified smart home network. It is precisely these sorts of networks that are becoming an integral part of the mobile Internet and communications world, allowing people to easily monitor and control their home facilities remotely, thereby adding convenience to daily life.

◇ On vehicles, Huawei's vehicle-mounted radio frequency (RF) wireless module and its derivatives ensure stable connectivity to

the Internet even when vehicles are moving at high speed. This not only enables consumers to surf the Internet but also offers real-time data in support of vehicle insurance, fleet management, traffic regulation, and even exhaust emissions monitoring.

◇ In the open air, consumers using Huawei's mobile hotspots can share the better communication with family and friends anytime, anywhere.

◇ When people are working out, Huawei's RF wireless module can be used to upload the exercise data to a service platform for calculation and analysis.

◇ Telemedicine is made possible with Huawei's RF wireless module. Conditions of patients in and outside the hospital can be closely monitored anytime. In addition, costs are significantly reduced for both hospitals and patients.

Huawei's mobile broadband devices are among the many offerings that Huawei provides to enrich life through communication and improve efficiency.

## Application of Huawei Products in the Government and Public Sector

Case Study: In the "God Particle" Discovery – Huawei Assists CERN in Coping with Digital Floods

On July 4, 2012, the European Organization for Nuclear Research (CERN) announced the existence of the "God particle" (Higgs particle), which offers new opportunities for humanity to explore the origins and future of the universe. The "God particle" is the last piece of the current particle physics puzzle. This discovery will monumentally change the existing theoretic system of physics and may reveal the dark matter secrets of the universe.

The experiments involved in discovering the "God particle" required considerable analysis and research on massive amounts of scientific data, which could not be completed without a strong data storage system. Statistics show that CERN produces over 25 petabytes of physics data each year. Since the establishment of a partnership with CERN in 2011, Huawei has been dedicated to providing innovative storage technologies and architectures to help CERN store and process massive quantities of high-energy physics data more effectively. Huawei also worked with CERN to study ways to address

the challenges of storing exabyte-level data. Ultimately, we provided a cloud-based universal distributed storage (UDS) system featuring exabyte-level scalability, security, reliability, and high integration. This system can be used to store data of any type and share services. With a strong self-healing capability, the cloud-based UDS system is compatible with Amazon's S3 application programming interfaces (APIs) and features 99.999999999% reliability. In theory, users do not need to back up their data outside the UDS system.

This system successfully addressed the challenge of storing the massive data resulting from CERN's experiments on the "God particle" and other subjects. Additionally, Huawei collected valuable feedback and suggestions from the researchers, which led to product improvements. As a result, we will be able to provide valuable services to more customers who are challenged with massive data storage needs and thereby achieve more win-win outcomes.

Bridging the Digital Divide
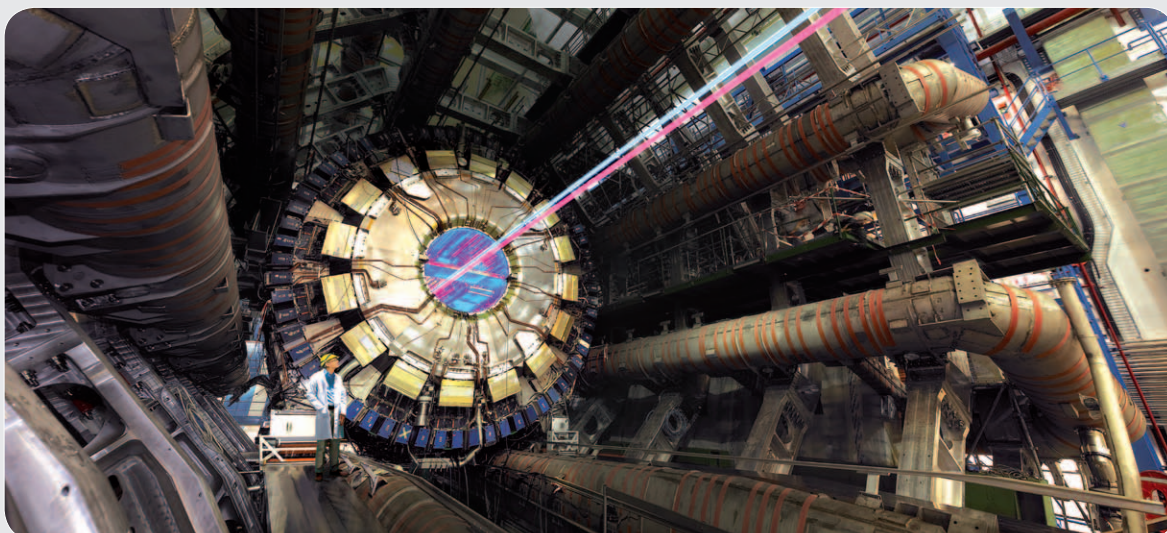
Case Study:

Huawei's High-definition Video System Facilitates Distance Education in Uzbekistan

In Uzbekistan, there are more than 60 universities and 450 vocational schools across the country's 400,000 square kilometers of land. Islam Karimov, President of Uzbekistan, required that a distance education system covering the major educational institutes be constructed by 2011, and that the existing multimedia classrooms of schools be upgraded to allow remote video access. In response, Huawei analyzed the status-quo and pooled together resources to provide a superb distance education system that facilitates the sharing of quality educational resources across Uzbekistan. Such sharing has proved essential to more balanced educational development in the country. With the help of this system, the country's Ministry of Education is able to communicate with schools more efficiently, which in turn reduces the need for frequent business trips and contributes to carbon emission reduction.
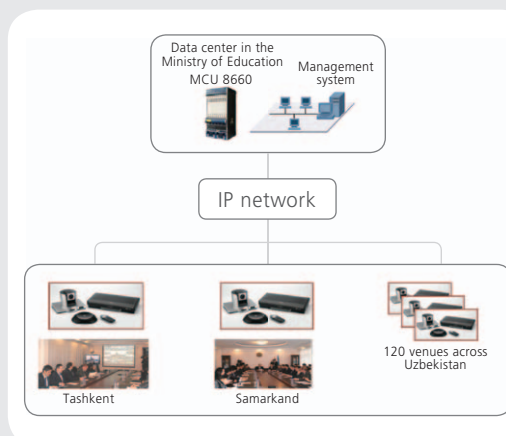
Case Study:

Huawei's Education Cloud Solution Ensures Balanced Educational Development Between Urban and Rural Areas Under the Jurisdiction of Guangzhou City in China

Huawei's education cloud solution provides an education cloud platform for the Guangzhou Bureau of Education, enabling educational resource sharing among all schools across the city. After connecting to the metropolitan area network (MAN) of Guangzhou Digital Education Town, schools in both urban and rural areas can access the same educational resource platform, realizing broader sharing of quality resources for students in outlying areas. Moreover, replacing traditional personal computers with thin clients (TCs) means a sharp reduction in device costs. In addition, TCs provide wider access to teaching resources, such as basic office automation, multimedia, 3D, high definition video, and mobile utilities, thus meeting needs for educational resources in different conditions. With all these advantages, our education cloud solution helps overcome some of the longest standing hurdles to making computers widely available in rural areas.

Application of Huawei Products in the Transportation Industry

Case Study:

Huawei Launches Next-generation Digital Railway Solutions to Help the Railway Industry Improve its Efficiency and Security

Huawei's leading digital railway solutions have been applied to world-leading railways in China, Europe, Turkey, Turkmenistan, and Australia, among other countries, and are serving the world's highest, longest, and fastest railways. By launching a series of digital railway solutions, Huawei has helped many customers build cutting-edge network systems, including GSM-R scheduling systems, network communications infrastructure systems, management systems, and office automation application systems. The total length of the railways that adopt Huawei's solutions for seamless on-site/off-site and long-distance communications, emergency scheduling, and security inspection services is 1.38 times greater than the total circumference of the Earth. Huawei's GSM-R solutions enable railway customers around the world to simplify operations, improve service quality, ensure the safety of passengers and cargo, and increase the security and efficiency of the railway transportation network.

Application of Huawei Products in the Energy Industry

Case Study:
Huawei Deploys the World's First TD-LTE Smart Grid

In July 2012, Huawei completed the deployment of a smart grid in Zhuhai for a power company. This is the first smart grid in the world that uses TD-LTE technology, and it serves as a model for the construction of smart grids across China. Automated services are needed in the power distribution network in Zhuhai. To meet such needs, Huawei used its proprietary solutions to deploy the first pilot wireless 1.8 GHz power distribution network for the power company in Zhuhai. This is the electric power industry's first smart network that uses TD-LTE technology. This network features strong capabilities in trans-horizon propagation, strong resistance to natural disasters, long transmission distances, high bandwidth, and freedom from the constraints of the ground line structure.

A smart grid helps improve the security and reliability of the power supply and enhances cost-effectiveness in production, distribution, and consumption of electricity, resulting in a power grid that is smart, efficient, reliable, and energy-conserving.

Application of Huawei Products in the E-commerce Field

Case Study:
Huawei Optimizes the Transaction Systems of a Large Online Retailer

A large online retailer has a daily transaction volume of hundreds of millions of dollars. It also has massive amounts of online transaction and customer data. Against this backdrop, this retailer was in urgent need of building a centralized backup system for online transaction and customer data on its website. This system needed a storage capacity of more than 1,400 terabytes to back up its website business data while providing services to more than 500 hosts simultaneously. To address these needs, Huawei customized a backup system solution for the customer that seamlessly integrates with its existing services; the system can be expanded to 15 petabytes online as needed, and is therefore future-proofed to handle the explosive growth of its data. In addition, Huawei provided a reliable security solution for the customer, which can thwart more than 100 types of distributed denial of service (DDoS) attacks. In total, Huawei's security solution protects the data and property of many tenants with annual transactions of more than CNY1 trillion.

Through our long-term engagement in bridging the digital divide, we enable more people to connect to the information world, enrich their communications, improve their work efficiency and living standards, and realize their dreams. As part of our effort to bridge the divide between different countries, regions, and social groups, Huawei is dedicated to providing easier access to voice communications services with broader coverage, wider access to high-speed networks, and more stable and smarter devices.

In the future, Huawei will remain focused on the four areas of our Bridging the Digital Divide initiative, contribute equipment and solutions in support of "communications for all" and "broadband inclusion for all," continuously nurture ICT talent, and promote the application of ICT technology in different fields. Huawei is striving to become a key contributor and industry leader in bridging the digital divide.

CHAPTER 03
Supporting Stable and Secure Network Operations

Responsibility

- Develop capabilities and mechanisms for ensuring network and business stability
- Establish hierarchical emergency assurance organizations and operation mechanisms to ensure smooth communications
- Enhance product robustness and resistance to attacks, and provide internationally recognized security assurance approaches
- Maintain openness and transparency by proactively communicating and cooperating with stakeholders; comply with applicable security standards, laws, and regulations; and protect product security and the rights and interests of customers

As reported by the World Bank, a 10% increase in broadband penetration would yield a 1.38% increase in GDP for developing countries. Open networks connect the world, facilitate economic and cultural exchanges across regions, and promote global trade. Open networks make it possible for people to have equal access to information. They also help to soften misunderstandings, acts of discrimination, and cultural conflicts that exist between people with different cultural backgrounds. Notwithstanding the monumental personal, social, and enterprise-oriented benefits that we have realized as a result of the digital and broadband revolutions, age-old real-world evils ranging from vandalism, theft, and disruption to hacking and willful destruction have naturally gravitated to the new digital environment. Cyber security is a growing global challenge. When natural disasters and other emergencies happen, heavy casualties and economic losses will follow if rescue efforts are delayed due to the unavailability of communications services. The importance of supporting network stability has been evident across a range of events, such as the 2008 Wenchuan earthquake, the 2011 Japan earthquake, the typhoon in the Philippines in 2012, and conflicts in Nigeria, just to name a few. Stable communications services prove effective at facilitating disaster relief efforts and protecting the lives and assets in disaster-stricken areas.

As a leading global ICT solutions provider, Huawei attaches the highest priority to supporting the stability and security of customer networks and business activities, particularly when earthquakes, tsunamis, and other natural disasters and emergencies strike. We keep on challenging ourselves and innovating continuously to support the stability and security of network equipment in a variety of severe conditions and to honor our commitment of collaborating with customers.

3.1 Network Stability

Huawei is committed to supporting the stability of customer networks and business activities. To that end, we have established a comprehensive assurance system supported by product designs, solutions, and network assurance systems. We have also developed efficient emergency response mechanisms capable of quickly restoring customer networks to normal operations and ensuring smooth communications at critical moments (e.g., earthquakes, tsunamis, upheavals, and cyber attacks). Thanks to these measures, we can provide stable communications services necessary to safeguard people's lives and property.

Huawei's Comprehensive Customer Network Assurance System

Huawei's goal is to promptly and efficiently respond to network assurance needs of customers around the globe on a 24-hour basis, especially in critical times. To achieve this goal, Huawei has done our best to establish a comprehensive customer network assurance system that considers numerous factors, including organizational structures, designated personnel, processes, and IT tools.

Huawei's Technical Assistance Service System for Customers Worldwide

Huawei has established a three-level technical assistance service system to rapidly respond to customer service requests.

- Level-1 organizations are language technical assistance centers (LTACs) that serve as main points of contact and provide comprehensive assistance for customers 24/7. To date, Huawei has established nine LTACs worldwide.
- Level-2 organizations are the three global technical assistance centers (GTACs) located in China, Mexico, and Romania. Adopting a "Follow the Sun" operating model, they offer comprehensive assistance to level-1 centers around the clock.
- Level-3 organizations are R&D teams in China and Romania that provide comprehensive assistance to level-2 centers on a 24-hour basis, and when necessary, thoroughly analyze technical solutions to issues.

Huawei's Global Technical Assistance Centers for Network Stability

Huawei has set up three global technical assistance centers and nine regional technical assistance centers. Over 3,400 technical assistance engineers provide network assurance services for customers.

Global Customer Support Service Delivery Centers

- 3 GTACs (China, Romania and Mexico) provide Follow Sun 7*24 Technical Support Service
- 9 Language TACs covering ~140 countries around the clock and providing local language access
- 9 RSOCs and 134 Country SLCs covering ~140 countries
- 3400+ professional engineers dedicated to Customer Support Service
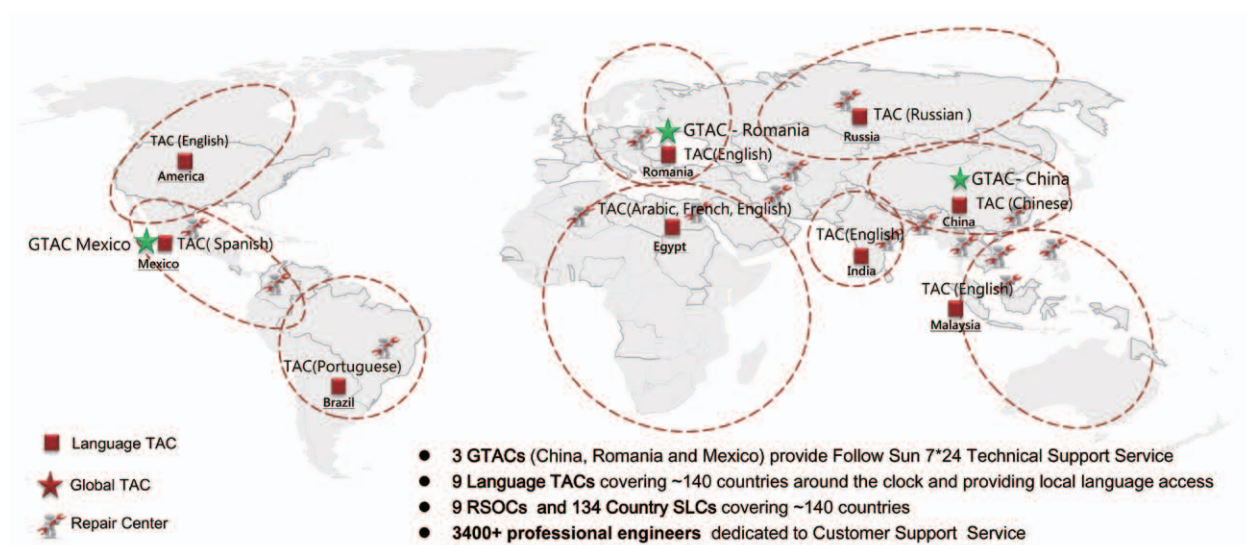
Extensive and Global Reach for Uninterrupted Support

Huawei's Global Hardware Support Service System

To provide customers worldwide with hardware support services, Huawei has established a three-level global spare parts support service system, which comprises a global spare parts center in Shenzhen, two regional spare parts service centers in Hong Kong and Hungary, and over 130 local spare parts centers.

Huawei's Customer Support Service Processes and IT Systems

Huawei has designed the following key processes and IT management platforms to enable organizations at all levels to efficiently provide emergency recovery, issue resolution, spare parts support, and other network assurance services.

- Processes for instantly recovering from critical incidents
- Processes for resolving issues

- Processes for managing changes (version upgrades, patches, and batch changes)
- Processes for releasing versions and patches

Huawei's iCare system manages customer service requests in an end-to-end manner, from initial request recording, distribution, and handling to tracking, query, closure, and customer feedback. In the iCare system, every customer service request is allocated a unique trouble ticket number which allows customers to query the progress in issue resolution anytime.

Huawei's technical support website (http://support.huawei.com) is a web-based information platform that transfers knowledge and shares technical support information, serving customers around the globe. Customers can visit the website to query or download the latest technical announcements, product manuals, and technical case studies among other information.

Supporting Stable and Secure Network Operations

Huawei's Global ITR Process Delivers Professional Customer Network Assurance Services

Huawei devised the Issue to Resolution (ITR) process that helps effectively manage and resolve issues raised by customers in a closed-loop manner.

Huawei employs the ITR process to manage and escalate technical service requests. Specifically, we manage and decide on issues concerning timeliness as stipulated in contracts, common issues, and issues with serious impacts on customer network operations. After that, we pull together resources to promptly address issues, especially critical issues requiring immediate response.

Huawei invests heavily in network assurance to ensure everyone is able to communicate, access data, and share information anywhere, anytime. In 2012, Huawei supported communications security for one-third of the world's population and supported the stable operations of 1,521 networks for more than 600 customers in over 140 countries and regions. Huawei spared no effort in guaranteeing network availability during 41 critical events (e.g., conflict in Nigeria), natural disasters (e.g., earthquakes in Chile), and special occasions (e.g., the London Olympics and the annual Hajj in Mecca). More than 3,000 Huawei engineers worldwide provide support services around the clock.

Case Study: Huawei Maintains Communications Availability During Turmoil in Nigeria

A carrier's network equipment was severely damaged when turmoil struck Nigeria in December 2012. In response, Huawei established an assurance team together with partners and the carrier. The team monitored networks on a 24-hour basis, restored service availability in key areas within two days, and recovered all affected devices within ten days. Huawei went to great lengths to maintain network stability in an effort to contribute to restoring normality to life and work in the country.

Repairing of communications cables

Commissioning of communications equipment

Case Study: Huawei Protects Networks Against Disruption During London Olympics

During the London Olympics, Huawei maintained network stability for ten customers, helping them transmit data over networks across the UK and broadcast the events to audiences all over the world. To achieve this, Huawei eliminated risks, improved network performance, hardened network security, and optimized processes without causing any disruption to network services.

Employees working to ensure network stability during London Olympics

Case Study:
Huawei Promptly Guaranteed Network Availability in the Aftermath of a Typhoon in the Philippines

On the evening of December 4, 2012, Typhoon Bopha suddenly hit Mindanao Island in the Philippines, pulling down a large number of buildings and destroying infrastructure. This Category 5 super typhoon was the strongest ever to sweep southern Mindanao Island, with a speed of 260 km/h upon touchdown. This catastrophe killed more than 1,500 people and left 310,000 homeless. As mobile services were disrupted by the disaster, victims were unable to contact their relatives or rescuers, acquire the latest information, or seek help.

Within just three days after the disaster, a team consisting of Huawei, Vodafone Foundation, Smart Communications, and Telecoms Sans Frontieres worked together to build an instant network in the coordination center located in Baganga Town. This super GSM network had been researched and developed by Huawei and Vodafone at the Mobile Innovation Center in Madrid. The instant network is a self-contained portable system weighing 100 kg that can be packed into three suitcases and taken anywhere on any commercial flight. Furthermore, the instant network can be deployed within 40 minutes. In emergencies, the instant network played a critical role in establishing and restoring communications for the local community. During the 17-day deployment period after Typhoon Bopha, the network connected 296,926 calls and sent 578,994 text messages, thereby effectively facilitating disaster relief and post-disaster recovery efforts.

3.2 Cyber Security

Huawei fully understands the significance of cyber security and adopts viable measures targeting improvements to product and service security in order to help customers mitigate security risks and win the trust of our stakeholders. To ensure cyber security, Huawei has formulated cyber security policies and processes, set up organizations specializing in matters related to cyber security, and established and implemented an end-to-end global cyber security assurance system.

Our Global Cyber Security Officer commented: "Cyber security, within sustainability strategy is like a 'process of security' and has to be dealt like quality process, which is applied across the value chain."

Huawei Global Cyber Security Assurance Policy

Huawei started its cyber security journey in 1999 when it published its first set of technical regulations on security to enhance product and solution security. In 2011, Huawei CEO Ren Zhengfei signed and published *Huawei Cyber Security Assurance Policy* to further underscore our commitments in this area.

Huawei hereby undertakes that as a crucial company strategy, based on compliance with the applicable cyber security laws, regulations, and standards of relevant countries and regions, and by reference to the industry best practice, it 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, 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. In addition, Huawei guarantees that its commitment to cyber security will never be outweighed by the consideration of commercial interests.

— Excerpts from
Huawei Cyber Security Assurance Policy

Supporting Stable and Secure Network Operations
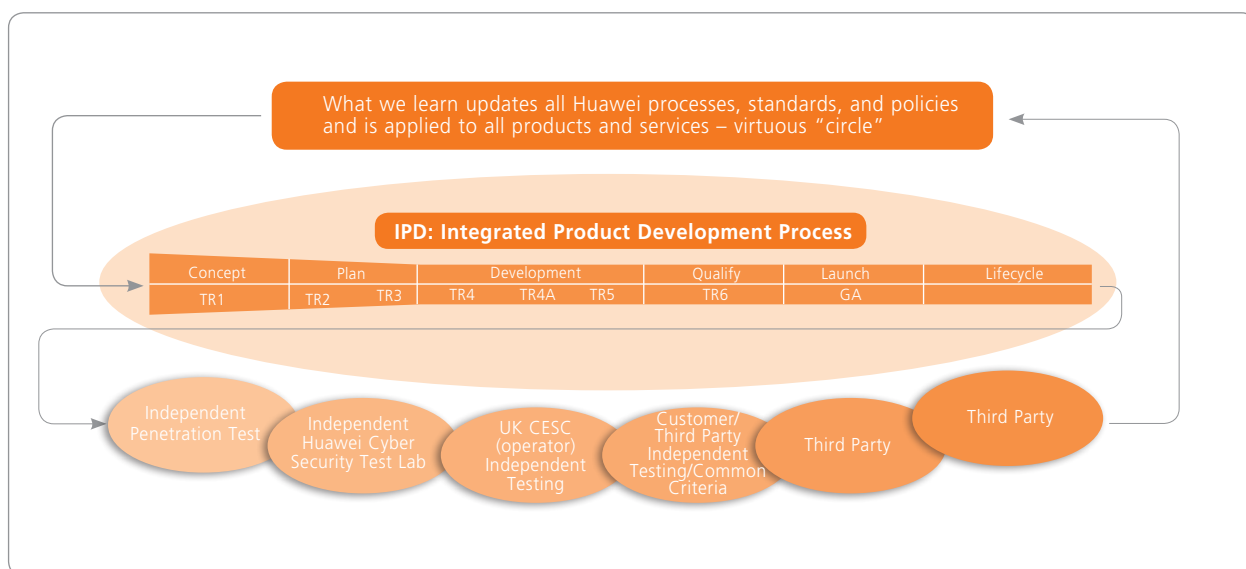
Integration of Cyber Security into Business Processes

In addressing cyber security requirements, we have built best practices into all of our standard processes, baselines, policies, and standards. In this way, cyber security is not something that is an afterthought. Instead, it becomes a standard part of the way we do our daily business – it has become part of our DNA.

To deliver sustained and innovative products and services with high quality, Huawei deploys consistent processes that can be duplicated around the globe, builds cyber security into processes, and integrates cyber security requirements into all business processes to form a virtuous cycle. Specifically, we have integrated security assurance activities into all business processes relating to R&D, supply chain, market & sales, project delivery, and technical services. Such integration, as the fundamental requirement of the quality management system, will be implemented under the guidance of management regulations and technical specifications.

At Huawei, we are continuously enhancing our internal systems and processes to enable us to trace-forward from a raw customer requirement all the way through to the computer code that was produced, and also to reverse-trace from the computer code (or patch/modification) all the way back to the initial requirements that necessitated the development of the code in the first place.

Furthermore, Huawei oversees and optimizes business processes by conducting internal audits and undergoing cyber security assessments and audits performed by governmental cyber security agencies and independent third parties. Huawei is a member of the Open Group whose, preliminary criteria for development for supply chain standard has been adopted by Huawei.

Huawei's Global Cyber Security Committee

Huawei has set up the Global Cyber Security Committee as the company's top-level cyber security management organization that decides on and approves Huawei's overall cyber security strategies. Chaired by a deputy chairman of the BOD, this committee comprises main BOD members and global process owners who have a role in effectively ensuring cyber security.

Huawei's Cyber Security Technology Center of Expertise

Huawei has established the Cyber Security Technology Center of Expertise that mitigates cyber security attacks, enhances cyber security protection, and builds improvements to cyber security into product design, development, and deployment. In terms of virtual cyber platform security, virtual network protection, and cloud computing data security, we develop technologies and products to build comprehensive security capabilities in cloud computing.

Huawei's Cyber Security Verification Laboratory

Huawei has established the Cyber Security Verification Laboratory, which works in isolation from all other operations of the company. The laboratory conducts independent security testing on Huawei products and provides verification reports that fully detail the quality and cyber security capability of the products to our customers. In addition, the laboratory is also open to Huawei customers and governments for them to verify the security of Huawei products.

Cyber Security is Everyone's Responsibility

Our employees, partners, and external consultants are required to comply with Huawei's cyber security policies and receive appropriate training so that the concept of security is deeply engrained into all activities. To promote cyber security, Huawei will reward employees who take an active part in cyber security assurance and will provide more training and education to those who violate cyber assurance policies. Employees may also incur personal legal liability for violation of relevant laws and regulations.

Huawei incorporates the responsibilities of assuring cyber security into its *BCG* and business processes and requires all staff to attend all courses on cyber security. Every employee is also required to fulfill cyber security responsibilities. This requirement helps employees strike a balance between their professional goals and incentives and their individual responsibilities. We will keep reviewing processes, increasing capabilities, and verifying our assurance levels.

Vulnerability Disclosure Principles

Huawei always acts responsibly in disclosing vulnerabilities. After implementing requisite evaluation procedures, Huawei discloses vulnerabilities to customers, partners, the Computer Emergency Response Team (CERT), and other stakeholders to build secure products and networks with them.

Huawei's Global Cyber Security Platform for Information Sharing and Mutual Assistance

As a global company, Huawei is committed to cooperating closely with stakeholders and building a platform for information sharing and mutual assistance. Based on this platform, Huawei pursues continuous innovation and sets standards together with industry peers. In so doing, we ensure that the integrity and security of our network solutions and services reach or exceed customer needs.

Huawei has established extensive cooperative relationships with many organizations focused on key areas of cyber security, such as threat modeling, malware detection, and attack behavior analysis, to effectively share cyber security capabilities. These organizations include the Anti-Phishing Work Group (APWG), China CERT Coordination Center (CNCERT/CC), OPERA, China Internet Network Information Center (CNNIC), Anti-Phishing Alliance of China (APAC), anti-virus provider AVG, International Criminal Police Organization (InterPol), and Internet Watch Foundation (IWF).

Huawei plays an active role in setting security standards in conjunction with the ITU Telecommunication Standardization Sector (ITU-T), the 3rd Generation Partnership Project (3GPP), the Internet Engineering Task Force (IETF), and other international telecom standards organizations. Huawei has joined cyber security organizations, such as the Forum for Incident Response and Security Teams (FIRST), in addition to collaborating with mainstream cyber security companies. Through these initiatives, we aim to contribute our fair share towards a more robust industry and effectively ensure cyber security for our customers worldwide.

Huawei has sponsored and participated in numerous cyber security forums and conferences, both domestic and international, so that we can share our insights and learn from others. For instance, in the East West Institute (EWI) Cyber Security Conference, Huawei participated in workshops about how to reach a consensus on global cyber security and supply chain security; Huawei also sponsored and presented at the Global Information Infrastructure Commission (GIIC) as its chair. In addition, Huawei has also joined the Quest Forum.

Supporting Stable and Secure Network Operations

Huawei's Contributions to Cyber Security Standards

Huawei contributes significantly to cyber security, particularly to global security standards. It is fair to say that Huawei is one of the leading contributors to global cyber security standards.

1) Huawei submits a large number of cyber security-related technical proposals to 3GPP.

2) Huawei takes the lead in developing the H(e)NB security standard.

3) Huawei pushes the security research on M2M and Public Warning System (PWS) together with major carriers and vendors in the industry.

4) Huawei encourages employees to be very active in many Internet Engineering Task Force (IETF) work groups such as IPsec, Karp, syslog, OSPF, MPLS, Hokey and IPv6 to discuss IP related security issues with industry experts; because of this active involvement many improvements to proposed standards have been released.

5) Huawei contributes to the security of virtual networks and spam prevention standards.

6) Huawei is a member of the Open Group and has adopted the organization's preliminary criteria concerning development of supply chain standards. Furthermore, Huawei has participated in the security standard activities of organizations such as the Institute of Electrical and Electronic Engineers (IEEE), Open Mobile Alliance (OMA), Universal Plug and Play Forum (UPnP Forum), and the WiFi-Alliance.

Huawei Cyber Security White Paper

Huawei published the *Huawei Cyber Security White Paper* in September 2012. This paper favors and supports international collaboration, openness, and verifiable trust as the foundation for a world in which technology can continue to drive economic and social improvement for the majority of the seven billion citizens on the planet.

Case Study: Join with Us in Supporting Solutions to Cyber Security Challenges

At Huawei, we believe that cyber security challenges are shared responsibilities. In addition, we must come together in an open and transparent way and all of us must make positive contributions to improving our own knowledge, processes, and products as well as actively supporting the development and implementation of international laws, standards, policies, and best practice.

As an ICT supplier, Huawei fully understands the importance of network stability and security. We place this as a high priority and consistently implement viable measures to ensure it is not compromised.

At all times and in all circumstances, we are fully committed to maintaining network stability for customers. In addition, we closely partner with stakeholders to continuously innovate and set standards to ensure that the integrity and security of our network solutions and services reach or exceed customer needs and build their confidence in serving their own clients.
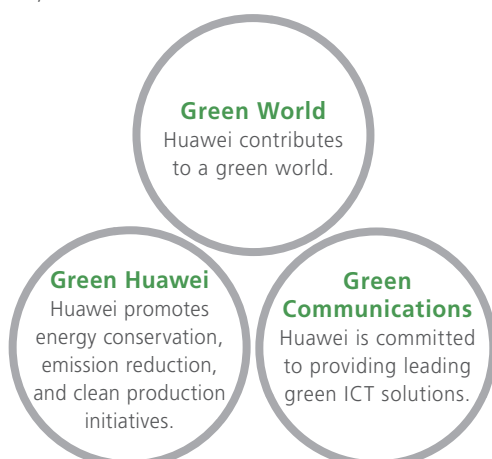
CHAPTER 04
Promoting Environmental Protection

Green

- Prioritize environmental protection requirements during production, service, and business activities
- Minimize negative environmental impacts throughout product lifecycles
- Drive low-carbon and circular economic growth
- Push forward green initiatives with partners, and increase positive influence on the industry chain

Global environmental issues have become increasingly prominent as economic development continues expanding. We have witnessed the emergence of climate change, energy crises, destruction of the ozone layer, extinction of species, and other serious environmental problems. According to statistics from the International Energy Agency (IEA), global energy consumption has increased by more than 70% over the past three decades, and carbon dioxide emissions have increased by approximately 80%. Mainstream scientists believe that energy consumption has caused the greenhouse effect, which in turn has led to a series of natural disasters. Protecting the environment and dealing with climate change have become two of the greatest challenges in modern times.

Huawei prioritizes environmental protection requirements during production, service, and business activities. In this regard, we integrate carbon reduction and environmental protection ideas into product lifecycles and continuously develop innovative technologies to boost the energy efficiency of our products and solutions. As part of our drive to reduce waste and greenhouse gas emissions, we continue to improve resource utilization in our operations. While adopting green initiatives on our own, we assist other industries in transitioning into a low-carbon and circular economy. We aim to fuel sustainability and achieve the goals of "Green Communications, Green Huawei, and Green World".

Green World
Huawei contributes to a green world.

Green Huawei
Huawei promotes energy conservation, emission reduction, and clean production initiatives.

Green Communications
Huawei is committed to providing leading green ICT solutions.

4.1 Green Products and Services

To balance environmental protection and industrial development in the future, Huawei conducts product lifecycle assessments and incorporates ecological designs into our products and services. In addition, we promote eco-friendly materials and clean energy while reusing as many resources as possible to improve utilization efficiency. We also provide end-to-end green communications solutions to drive the development of a green communications industry through our Green Base Station, Green Transmission, and Green Energy solutions.

Product Energy Efficiency Design

Upon conducting a lifecycle assessment (LCA) on our equipment, Huawei discovered that the majority of carbon emissions are from our base stations in the mobile network and broadband access products in the fixed network. Huawei analyzed the energy consumption patterns of several customers and found that electricity was the main type of energy consumed by carriers. Most electricity is consumed by access equipment, including wireless sites and broadband and narrowband access sites. The energy consumption of many mobile carriers' wireless sites has reached over 70% of what is consumed by the entire network. Although the energy consumption of fixed carrier access networks is less than that of mobile carrier access networks, the rate is generally more than 40%. Therefore, we are focusing on improving energy-efficient designs of our networks, primarily with our access networks, core equipment rooms, and transport networks.

Case Study:
Huawei's High-efficiency Power Supply Equipment Facilitated a Carrier in Upgrading Power Supply

Huawei's Network Energy Product Line provided a carrier with a solution of TP-series high-efficiency power supply equipment for its subsidiary sites in Wuhan, Huangshi, Jingzhou, and Yichang in Hubei Province. This marks the first occasion the carrier has adopted new-generation high-efficiency power supply systems on such a large scale. This event also marks the beginning of the widespread application of high-efficiency power supply products in China. As a result, Huawei's energy-saving solution helped the customer reduce energy consumption by 60%.

Case Study:
Huawei's Hybrid Power Supply System Helps a Carrier Achieve Key Performance Indicators

More than 3,000 sites across 17 African countries where Carrier A operates have no access to municipal power supplies. The sites rely on double diesel generators instead. Running 24 hours a day, these engines consume an average of 26,000 liters of diesel per site annually.

After establishing a strategic partnership with Carrier A, Huawei provided it with a customized hybrid power supply solution that maximizes the use of solar energy while ensuring continuous power supply using their diesel generators. After this solution was adopted, diesel generator runtime was reduced by 80% per year on average; diesel consumed at each site was reduced by 17,000 liters per year; and CO_2 emissions of each station were reduced by 45 tons annually. Meanwhile, the Huawei NetEco network management system significantly reduced the operating costs of Carrier A's sites thanks to the energy management. After the implementation of the first phase of this project, Carrier A has already posted US$5 million savings on its operating costs.

SoftMobile – Huawei's Innovative Mobile Broadband Network Architecture

Huawei SoftMobile came into being in the mobile broadband (MBB) era, redefining key features such as broadband, collaboration, and on-demand based on SingleRAN. Through modular architecture design, SoftMobile integrates multiple frequencies and bands and enables smooth network evolutions in line with technological advancements, thus eliminating network equipment bottlenecks and ensuring smooth extension of network capacity. By achieving collaborative management and network resource scheduling among multiple cells at many frequencies and bands on different network layers, SoftMobile maximizes asset efficiency for carriers and results in a more energy-efficient network.

Huawei has adopted a series of innovative technologies, such as distributed and integrated equipment rooms, high-efficiency amplification technology, and intelligent shutdown technology, to significantly reduce base station power consumption and emissions.
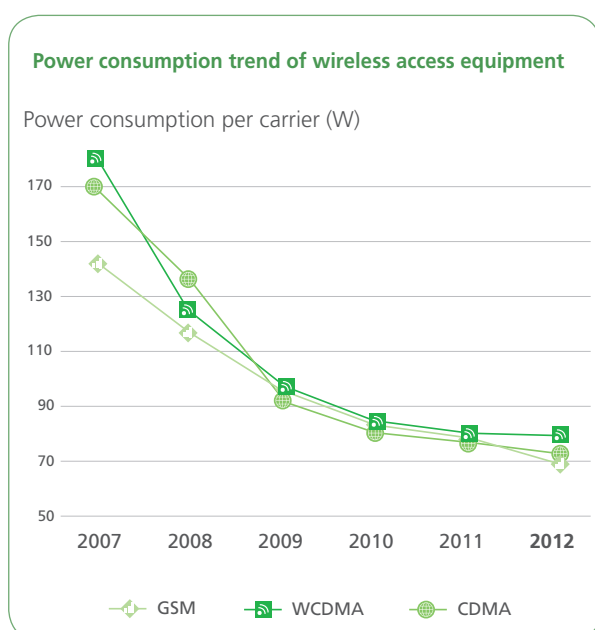
Huawei's green base stations combine optimized hardware and system designs (e.g., chip designs) and innovative energy-saving technologies such as amplification and power consumption management. Compared to traditional base stations with the same configurations, Huawei's green base stations are able to reduce energy consumption by more than 50%. With the use of automatic heat dissipation techniques, Huawei's innovative distributed base stations are able to reduce the use of auxiliary air conditioners and decrease feeder loss, thereby conserving up to 83% in power usage.

Huawei is actively involved in the formulation of ISO energy efficiency standards for communications products. To date, Huawei has submitted more than **30** proposals related to energy efficiency standards.

Monitoring systems installed in Huawei's base stations periodically calculate the energy being consumed and provide such data to network management systems that visually display statistics on power consumption for a specific period of time. These data results can be used as references when energy conservation and emission reduction strategies are being formulated, thus greatly enhancing the efficiency of network upgrades for energy conservation purposes.

The large-scale application of soft energy conservation features has helped to reduce network energy consumption. Meanwhile, Huawei provides monitoring tools to help carriers keep track of their power consumption levels and effectively conserve energy and reduce emissions.

Power consumption trend of wireless access equipment

Power consumption per carrier (W)

Promoting Environmental Protection

Case Study:
Conservation of Biodiversity

Huawei fully considers environmental impacts and takes effective measures to protect biodiversity.

1. During site selection, we avoid constructing base stations on land rich with wildlife and do our utmost to ensure no damage is caused to lakes, rivers, mountainous regions, and agricultural lands, along with archaeological, cultural, and historical relics.
2. During project planning and construction, we assess environmental impacts and put forward strategies and measures to prevent or reduce negative environmental impacts.
3. During product development, we develop low electromagnetic-radiation and noise-emitting products to reduce negative environmental impacts.

Green Certification

In product design and production processes, Huawei always regards "reducing environmental impacts" as one of the most important metrics for assessing product quality. At the end of 2009, Huawei launched the green certification plan to develop certification standards for green products. Certification standards include all environmental protection regulations, directives, criteria, and requirements related to energy efficiency, use of renewable energy, weight, packaging, hazardous substances, recycling, noise, and electromagnetic radiation safety. Based on these standards, we evaluate the environmental performance of products in each phase of their lifecycle, from raw materials and production, all the way to transportation, use, and disposal. We have incorporated green certification standards into our Integrated Product Development (IPD) process. The green certification plan has guided the company to continuously improve the environmental performance of products by cutting down resource consumption, improving energy efficiency, lowering production and operating costs, and reducing environmental impacts throughout product lifecycles.
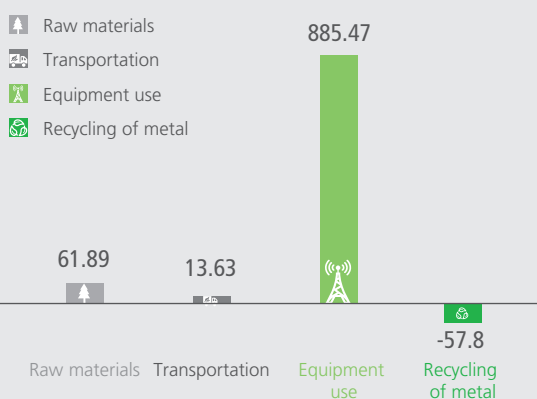
Lifecycle Assessment

Huawei's LCA process assesses a product's entire lifecycle, from raw material procurement, parts manufacturing, product processing, transportation, and usage, to disposal and recycling. By utilizing the LCA, we are able to determine the impact each phase of a product's lifecycle will have on climate change as well as other environmental impacts. We are also able to identify key influencing factors, set control indicators, and take countermeasures to reduce negative environmental impacts.

Case Study: Assessment on DBS3900 LTE Product Lifecycle

The DBS3900 series of LTE base stations emit 903.18 kg of CO_2 per year, most of which is emitted during product usage.

Conducting product lifecycle assessment helps us holistically assess the environmental impacts of our products, such as energy efficiency and power consumption. The assessment results serve as important references when we design the energy conservation and emission reduction features of products.

- Raw materials
- Transportation
- Equipment use
- Recycling of metal

885.47

61.89   13.63

-57.8

Raw materials   Transportation   Equipment use   Recycling of metal

Huawei has established a product environment database and developed a Quick-LCA tool based on the database in order to rapidly assess product lifecycles and continuously optimize products.

In 2012, Huawei used the Quick-LCA tool to assess 17 types of products.

Circular Economy

For a long time, the traditional take-make-dispose model of production and consumption required a large amount of resources. We are now making efforts to transform this model into a circular economy. Based on the LCA, Huawei conducts ecological design in all phases of product lifecycles, from materials and components selection (green procurement), product manufacturing (lean and clean manufacturing), and distribution and delivery (green packaging and logistics) to the use of products and services, and all the way up to the recycling of scrapped products. We strive to:

- Reduce resource consumption and use renewable resources.
- Maximize energy efficiency and use renewable energy whenever possible.
- Minimize waste emissions and their negative impact on the environment.
- Prolong the service life of products.
- Recycle and reuse scrapped components.

Ecological design

- Green procurement
- Lean and clean manufacturing
- Green packaging and logistics
- Use of products and services
- Recycling of scrapped products
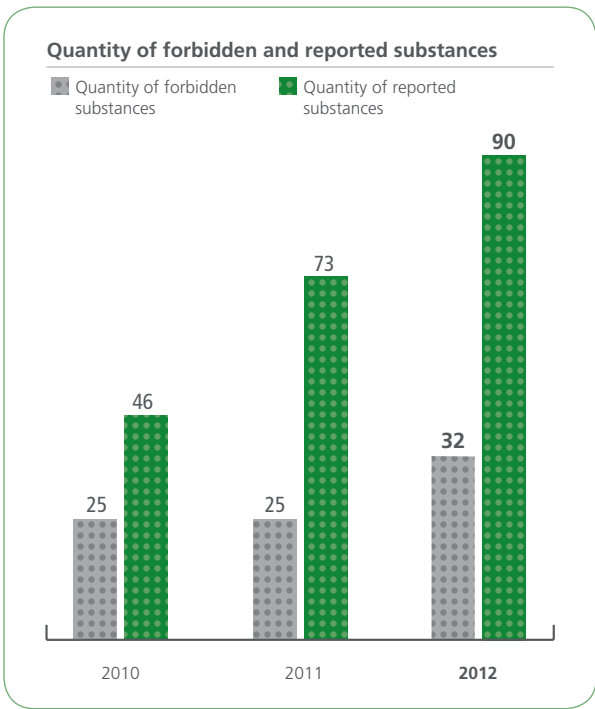
Promoting Environmental Protection

Hazardous Substance Management

As a responsible global corporate citizen, Huawei complies with all product-related environmental laws and regulations worldwide.

Since 2012, the global community has pushed for stricter regulation and management of toxic and hazardous substances. In response, Huawei promptly analyzes any changes in laws and regulations and formulates solutions that are able to comply with the latest requirements in product design, procurement, and production. One specific example concerns lead-free products. Huawei requires suppliers to report on the material composition of all products. In addition, Huawei is switching over to lead-free materials in manufacturing of its products, aiming to achieve zero lead status by 2014. Such measures are undertaken to meet the increasingly stringent requirements of controlling the use of toxic and hazardous substances.
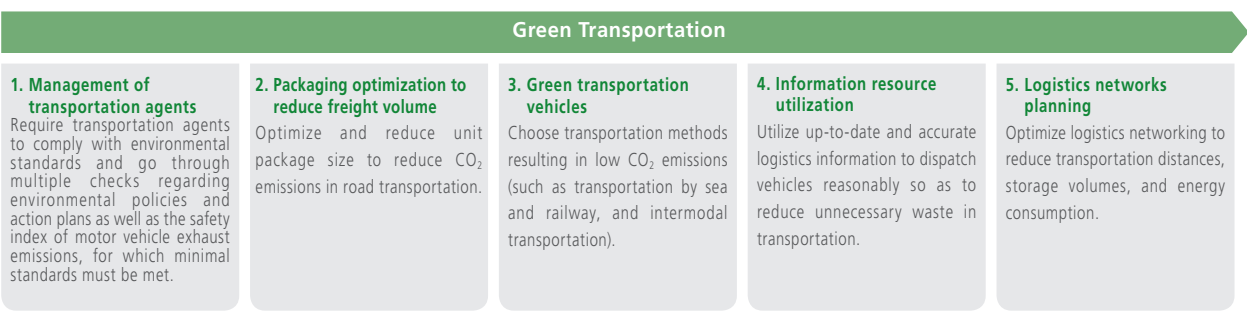
In 2012, the number of forbidden substances was 32, and the number of reported substances was as high as 90.

In consideration that some chemical substances not only cause environmental damage, but may also negatively impact a person's safety, Huawei is motivated to discover alternative substances and has taken initiatives to continuously reduce the use of harmful chemical substances.

Quantity of forbidden and reported substances

Quantity of forbidden substances　　Quantity of reported substances

	2010	2011	2012
Quantity of forbidden substances	25	25	32
Quantity of reported substances	46	73	90

Green Logistics

In addition to minimizing operating costs, green logistics also has the ability to reduce greenhouse gas emissions and avoid the waste of resources, helping to reduce any negative impact on the environment. As such, the implementation of green logistics plays an important role in Huawei's green management efforts.

Green Transportation

1. Management of transportation agents	2. Packaging optimization to reduce freight volume	3. Green transportation vehicles	4. Information resource utilization	5. Logistics networks planning
Require transportation agents to comply with environmental standards and go through multiple checks regarding environmental policies and action plans as well as the safety index of motor vehicle exhaust emissions, for which minimal standards must be met.	Optimize and reduce unit package size to reduce CO_2 emissions in road transportation.	Choose transportation methods resulting in low CO_2 emissions (such as transportation by sea and railway, and intermodal transportation).	Utilize up-to-date and accurate logistics information to dispatch vehicles reasonably so as to reduce unnecessary waste in transportation.	Optimize logistics networking to reduce transportation distances, storage volumes, and energy consumption.

Management model of Huawei's green logistics

In order to reduce energy consumption and CO_2 emissions in the logistics process, Huawei has taken the following measures: increased the use of containers; optimized logistics delivery routes and network layouts; reduced the ratio of products transported by air while increasing the ratio of products transported by railway and sea; conducted transportation planning; increased the ratio of products delivered directly by suppliers to our customers; and monitored the ratio of products transported by air.
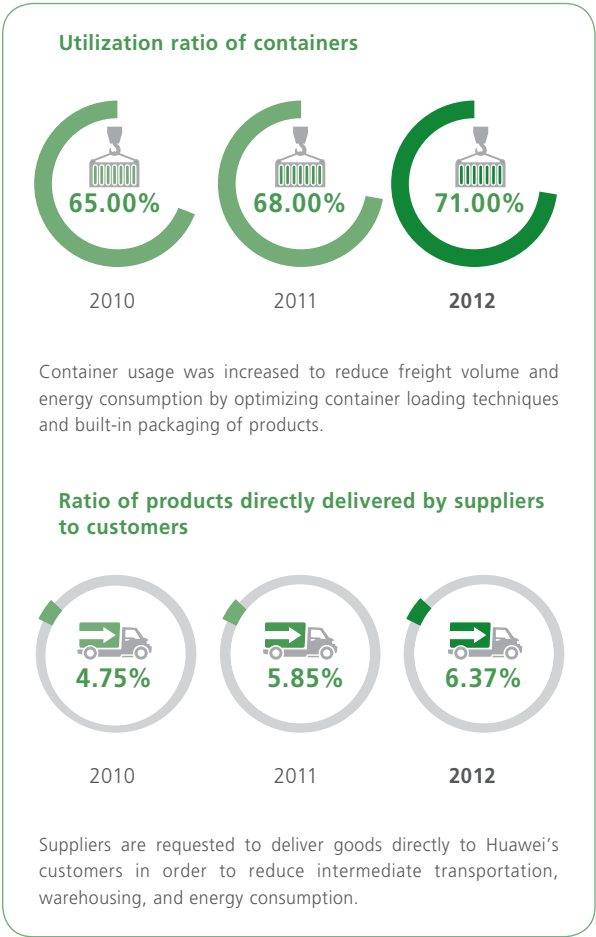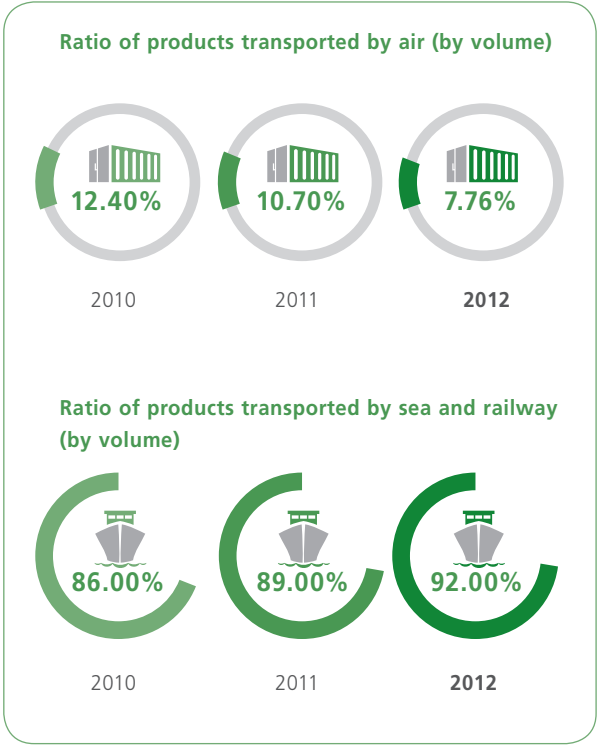
By optimizing transportation resources, Huawei has decreased the ratio of products transported by air and increased the ratio of products transported by railway and sea, resulting in decreased energy consumption.

Ratio of products transported by air (by volume)

| 12.40% | 10.70% | 7.76% |
| 2010 | 2011 | **2012** |

Ratio of products transported by sea and railway (by volume)

| 86.00% | 89.00% | 92.00% |
| 2010 | 2011 | **2012** |

Utilization ratio of containers

| 65.00% | 68.00% | 71.00% |
| 2010 | 2011 | **2012** |

Container usage was increased to reduce freight volume and energy consumption by optimizing container loading techniques and built-in packaging of products.

Ratio of products directly delivered by suppliers to customers

| 4.75% | 5.85% | 6.37% |
| 2010 | 2011 | **2012** |

Suppliers are requested to deliver goods directly to Huawei's customers in order to reduce intermediate transportation, warehousing, and energy consumption.

Promoting Environmental Protection

Green Packaging

Huawei has developed a "6R1D" packaging strategy. The "6Rs" in the strategy mean that the packaging has right designs and is able to be reduced, returned, reused, recycled, and recovered while the "1D" indicates that the packaging is degradable. The 6R1D packaging strategy also allows for the systematic development, application, and promotion of key green packaging solutions, such as circulation racks, turnover trays, and turnover boxes. By reducing the weight and size of packaging and adopting reasonable designs, Huawei has decreased material usage and transportation costs. Huawei also strives to improve the recycling rate of materials.

- **Right** Right design
- **Reduce** Reduction of consumption
- **Returnable** Returnable materials
- **Reuse** Reusable materials
- **Recovery** Recoverable materials
- **Recycle** Recyclable materials

Recovery & Recycle

Reuse resources and energy by using eco-friendly and renewable materials on a large scale.
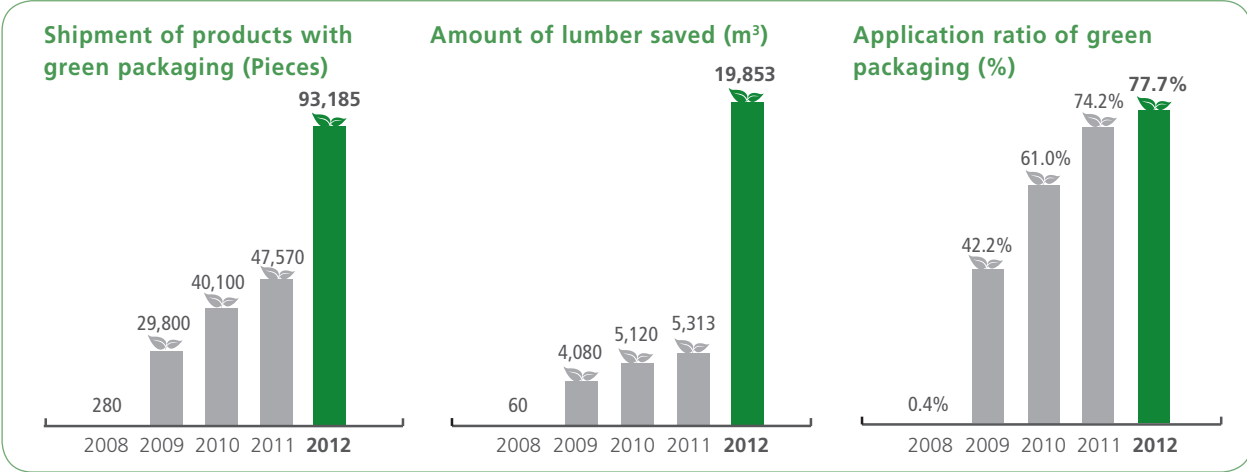

Huawei's 6R1D packaging strategy

Right & Reduce

Reduce packaging material consumption through smaller and lighter packages; continue to develop reasonable and right packaging designs; and reduce comprehensive costs for packaging and logistics.

Returnable & Reuse

Extend the lifecycle of packages through establishing and improving an effective recycling system.

Huawei has been able to significantly reduce the use of wood and lower carbon emissions by applying the following green packaging methods:

1. Replace traditional plywood boxes with metal circulation racks for packing wireless indoor cabinets.
2. Replace wooden turnover trays with metal turnover trays for assembly packing of wireless modular products.
3. Replace wooden cases with metal turnover trays and high-strength cartons for assembly packing of engineering accessories.

In 2012, Huawei shipped 93,200 products with green packaging, reducing wood consumption by 19,900 m³. Among the packaging used for major equipment, 77.7% consisted of green packaging.

Shipment of products with green packaging (Pieces)

2008	2009	2010	2011	2012
280	29,800	40,100	47,570	93,185

Amount of lumber saved (m³)

2008	2009	2010	2011	2012
60	4,080	5,120	5,313	19,853

Application ratio of green packaging (%)

2008	2009	2010	2011	2012
0.4%	42.2%	61.0%	74.2%	77.7%

In the future, Huawei plans to set key objectives for energy conservation and emissions reduction in its integrated supply chain and logistics activities. The growing use of green packaging and logistics will increase economic and social benefits, establish Huawei as a green industry brand, and contribute to a more environmentally friendly industry chain.

4.2 Deceleration of and Adaptation to Climate Change

In synchronization with a tremendous trend toward energy conservation and emission reduction worldwide, Huawei is actively exploring opportunities in the value chain to reduce the emissions of each kind of greenhouse gas and become a viable partner in the deceleration of climate change.

Huawei Greenhouse Gas Reduction Declaration and Policy Statement
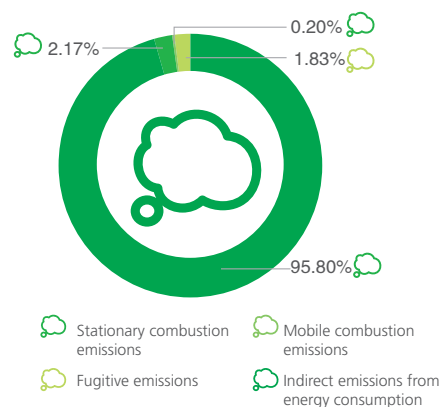
Huawei is committed to incorporating greenhouse gas management into our business activities, and strives to fulfill our corporate social responsibilities by taking the following practical actions to reduce greenhouse gas emissions:

(1) Introduce energy management systems and use energy-efficient equipment to reduce greenhouse gas emissions in business operations.
(2) Replace traditional energy with clean energy.
(3) Continuously improve product energy efficiency to reduce end-user greenhouse gas emissions.
(4) Encourage supply chain partners to reduce greenhouse gases.

Reduction of Greenhouse Gas Emissions

According to methodologies of the ISO14064 and the GHG Protocol concerning greenhouse gas investigation and quantization, Huawei quantized greenhouse gases in Scope 1 and Scope 2 and qualitatively investigated the greenhouse gas in Scope 3 in 2012. Huawei will disclose some quantitative data in the 2013 report. In 2012, the total emissions of CO_2 in Huawei's China Region amounted to 843,883 tons.

The proportion for each Scope's greenhouse gas emissions is shown below:

- 0.20%
- 2.17%
- 1.83%
- 95.80%

- Stationary combustion emissions
- Mobile combustion emissions
- Fugitive emissions
- Indirect emissions from energy consumption

Notes: Scope 1 includes stationary combustion emissions, mobile combustion emissions, and fugitive emissions. Scope 2 includes indirect emissions from energy consumption.

Based on the investigation and quantization of greenhouse gases, Huawei has set targets to reduce emissions. To achieve these targets, regular internal audits and management reviews have been conducted to continuously monitor and improve the performance of managing greenhouse gas emissions. In 2012, thanks to the concerted efforts made by all departments, the CO_2 emissions per unit construction area was 7.7% less than in 2011, reaching the goal of emitting 6% less CO_2 than the previous year.

Greenhouse gas emissions per unit construction area (ton CO_2/m²)
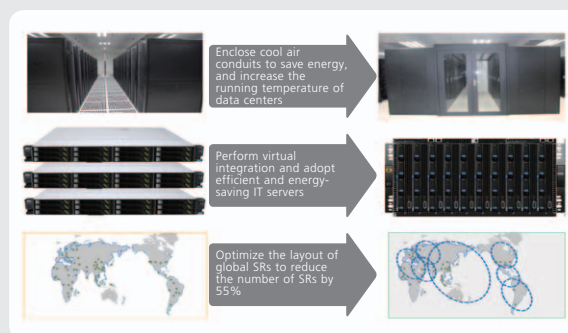

- 0.26 — 2011
- 0.24 — 2012
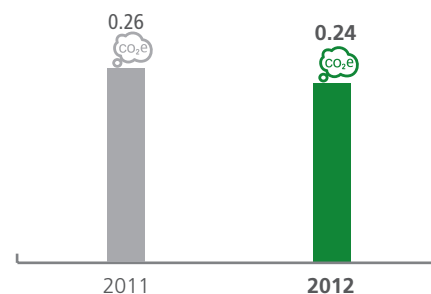
Meanwhile, we introduced the concept of environmental protection into the product design stage and improved product energy efficiency, thereby reducing greenhouse gas emissions during product usage. We developed a green procurement strategy to prompt suppliers to manage greenhouse gas emissions in addition to proactively taking action to promote clean manufacturing and reduce energy consumption.

Promoting Environmental Protection

⌗ Case Study: Huawei IT Data Center

By leveraging energy conservation measures, such as using hot and cool air conduits and performing refined operational management, we decrease the PUE of data centers by 18% while the energy consumption standard for newly constructed data centers has also improved (PUE=1.5). By optimizing the layout of our global server rooms (SRs), we have reduced the number of SRs by 55%. In addition, we have adopted more efficient and energy-saving IT servers, storage systems, and network equipment. Thanks to a series of energy-saving measures, a total of approximately 10 million kWh of electricity was saved in 2012. Furthermore, the total level of CO_2 emissions are anticipated to be reduced by approximately 77,000 tons during the 12th Five-Year Plan period (2011–2015).

Enclose cool air conduits to save energy, and increase the running temperature of data centers

Perform virtual integration and adopt efficient and energy-saving IT servers

Optimize the layout of global SRs to reduce the number of SRs by 55%

Huawei's energy-efficient IT data centers

⌗ Case Study: ePrint Green Printing Services

In 2012, following several rounds of assessments and certifications, Huawei's Business Process & IT Management Department introduced integrated, efficient, and green ePrint printing services. This action signaled the transformation of our a "purchasing equipment" asset management model into a "purchasing services" service acquisition model. This new concept enables us to focus on improving service quality and work efficiency. By making full use of the new printing equipment and materials, we are able to substantially reduce manpower and cost while achieving energy conservation and environmental protection.

1. During the implementation process, Huawei fully emphasized the printing services management and getting the right details. By providing one-stop services for printing equipment selection and certification, standard configuration, along with optimization and integration, Huawei provides ePrint printing services that reduce waste by 50%, lower printing costs by nearly 20%, and improve utilization efficiency by 37%.

2. We make full use of all kinds of printing technologies and strategies that are beneficial to environmental protection, such as default use of double-sided printing and promotion of all-in-one printing devices. By applying unified backstage printing control, we have successfully optimized resource utilization and reduced paper consumption by 25%.

By adopting the new green printing services, deploying environmentally friendly printing equipment, and offering one-stop material recycling services, we have taken significant steps toward sustainable development in this area. It is expected that the integration of ePrint printing services will help us eliminate over 1,500 printers from our operation (a 40% year-on-year reduction) and reduce print related energy consumption by over 40% between 2012 and 2014, without impeding stable service growth.

Smart multifunctional printer

Case Study:
Huawei's Data Center Provides Desktop Cloud Services for over 20,000 Users

To increase working efficiency and achieve energy conservation and emissions reductions, Huawei is proactively promoting its desktop cloud systems for its own R&D departments worldwide. Therefore, Huawei needed to build a data center that can provide desktop cloud services to approximately 20,000 users in the short term.

After considering several options, such as renting IDC equipment rooms and converting ordinary buildings, Huawei decided to construct a container data center that has the benefits of simplicity of design and construction, fast speeds, high density, and energy conserving attributes. The first phase consisted of 10 containers, including containers for IT equipment, air-conditioning, power supply, and central control. The project was planned in April 2012, initiated in June, and delivered in September of that same year.

As the world's first Tier-IV container data center, Huawei's desktop cloud data center successfully reduced power usage effectiveness (PUE) to 1.5 or lower. In the first phase, the annual electricity consumption was reduced by approximately 1.72 million kWh while using 30% less land for construction as compared to traditional data centers. Compared with renting equipment rooms, this data center will result in an investment savings of approximately 50% over the next ten years.
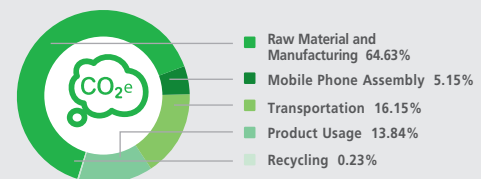

Case Study:
Huawei Assesses Product Carbon Footprint

1. In 2012, our S5700 Ethernet switch was the first switch product in China with a carbon footprint certificate from a third-party certification institute.
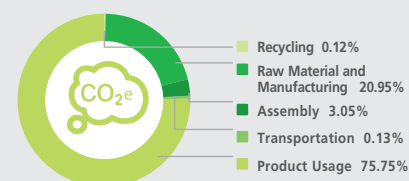

2. Through the cooperation with professional institutes in 2012, Huawei referred to industry standards and regulations to comprehensively develop capabilities in carbon footprint analysis of our devices. We are now able to release carbon footprint data for all of our devices. In addition, we have optimized methods for assessing the carbon footprint of such devices as mobile phones, mobile broadband products, and home devices. We have released assessment reports for the carbon footprint of ten selected products.

Carbon Footprint Analysis of Mobile Phone U8652

- Raw Material and Manufacturing 64.63%
- Mobile Phone Assembly 5.15%
- Transportation 16.15%
- Product Usage 13.84%
- Recycling 0.23%

Total greenhouse gas emissions*: 42.98kg CO_2e

Carbon Footprint Analysis of Gateway HH3

- Recycling 0.12%
- Raw Material and Manufacturing 20.95%
- Assembly 3.05%
- Transportation 0.13%
- Product Usage 75.75%

Total greenhouse gas emissions*: 118.87kg CO_2e

Promoting Environmental Protection

Carbon Disclosure Project

As a non-profit organization founded in 2000, the Carbon Disclosure Project (CDP) is committed to collecting and disseminating carbon disclosure data of the world's top companies while encouraging companies to set targets to reduce greenhouse gas emissions and improve performance.

As a global enterprise, Huawei has been an active participant in CDP activities, and we established a greenhouse gas management mechanism and calculation method based on the ISO 14064 standard in 2012. Huawei has identified risks and opportunities, calculated and disclosed greenhouse gas emissions each year, and carried out emission reduction measures to minimize the company's adverse influence on climate change.

Energy Conservation in Operational Processes

Huawei implements energy management measures for all buildings and equipment throughout their lifecycles, from the early design stage and post-delivery operations management all the way to technology upgrades.

Energy-conserving and emissions-reducing measures have been applied to our central air-conditioning systems, green data centers, cloud computing applications, laboratories, and supply chain production equipment. These measures continuously optimize operations management and promote energy efficiency throughout the Huawei campus.

Energy Conservation for Buildings

When designing and constructing new buildings, Huawei strictly adheres to the energy saving standards and requirements of local countries. The latest energy-saving technologies are adopted in terms of building structure, wall construction materials, doors and windows, heat preservation and isolation materials, breathable curtain walls, as well as energy-saving transformers and lights. The efficiency of air-conditioning systems and functions are also carefully scrutinized, such as variable air volume, variable water volume, variable fresh air ratio, refrigeration, exhaust heat recovery, chilled water (wide temperature range), ice storage, and solar water heating. Huawei assesses and manages the lifecycles of all production and laboratory equipment. We design and choose energy-efficient equipment with considerations to cost, business needs, energy consumption, and many other factors. We also replace equipment as soon as the need arises.

Energy Conservation Management

Huawei has a good understanding of energy management, which supports our efforts to fulfill our social responsibility and carry out energy and cost control initiatives. Our energy conservation activities focus on energy management system development, energy consumption measurement and analysis, and awareness campaigns and energy conservation inspections.

Huawei's Energy Consumption from 2010 to 2012

Energy Name	Unit	2010	2011	2012
Natural gas	10,000 m³	375	630	**450**
Gasoline	ton	556	1,474	**1,543**
Diesel	ton	60	67	**48**
Electricity	10,000 kWh	55,000	71,793	**86,885**

Notes: Due to continuous expansion of our operations, the total energy consumption in 2012 was higher than that of 2011. However, the overall energy consumption per unit construction area was 7% less.

Energy Management System Development

Huawei has established and optimized our corporate-level energy management process and responsibility system by setting up a tier-two energy management organization and incorporating energy conservation assessment goals into each department's responsibility assessment system. We have established a dedicated organization to manage energy conservation and emissions reduction. The organization also formulates energy management principles, policies, regulations, standards, and process specifications; establishes energy-saving indicators and energy consumption baselines to ensure company-wide conservation; and coordinates, oversees, and manages energy management initiatives throughout Huawei. In addition, we monitor, inspect, and compare the energy management work of each department, publicize poor management and behaviors that waste energy, and urge related departments improve. By performing all these activities, we aim to implement our energy management regulations and achieve the goals for energy conservation and emissions reduction.

Energy Consumption Measurement and Analysis

Huawei has recognized that energy measurement is a basic and important means for implementing refined management to improve energy efficiency. Enhancing measurement and establishing and optimizing an energy consumption measurement system are critical to reducing energy waste and exploiting the potential for energy conservation. Therefore, Huawei has established standards for developing energy measurement systems and has continuously optimized these standards based on energy management requirements. To date, most Huawei bases have been equipped with electric power management systems that measure the energy consumption of all equipment types and enable automatic meter reading. Huawei has initiated plans to renovate bases that are not equipped with these electric power management systems. In the future, Huawei plans to develop a nation-wide electric power management system that monitors and analyzes the energy consumption of all bases across China in real-time, thereby achieving refined management of energy consumption.

Huawei conducts monthly analysis of energy data as well as on-site inspections to evaluate and uncover every opportunity for energy saving, as well as track and improve energy conservation work. Based on local electricity load and policy, we declare reasonable electricity distribution capacity, distribute electricity for the peak and off-peak periods, and balance the electricity consumed in these two periods by applying an ice storage system. All these efforts help us to save energy.

Awareness Campaigns and Energy Conservation Inspections

Huawei regularly conducts campaigns to increase awareness of energy conservation and emission reduction. During the annual "Energy Saving Promotion Week", Huawei promotes learning regarding energy conservation and emissions reduction, by sharing videos, internal newspapers, and displaying posters to inform employees of these issues and create a climate in which everyone is informed and involved. In addition, energy management departments conduct inspections in each department to assess their implementation of energy-saving measures. These departments publicize those behaviors that waste energy.

Conserve Energy by Applying Technologies

Huawei attaches great importance to the application of new technologies, techniques, equipment and materials conducive to energy conservation, and continuously optimizes and improves techniques and eliminates outdated equipment. In addition, we audit energy use and analyze our energy-saving processes regularly to find opportunities to implement technologies and measures in the areas that have room for improvement, including applying solar photovoltaic power generators, affixing insulation membrane to reflection glass curtain walls, installing automatic induction doors and air curtain machines in halls and cafeterias, replacing gas stoves in cafeterias with energy-saving versions, controlling frequency of pumps, implementing timing control adjustment of water heaters, replacing lights with energy-saving versions, revamping building automation systems, and using natural cold sources for cooling.

Huawei employee signing his name to show his commitment to energy conservation and emission reduction


Prizes distributed during Energy Saving Promotion Week

Promoting Environmental Protection

Case Study: "Using Natural Cold Sources for Cooling" Project

Considering that many labs and data equipment rooms need to use air-conditioners all year round, our bases in Nanjing, Beijing, Langfang, and Shanghai have applied natural cold sources for cooling technology to transform their air conditioning systems. When the temperature outside is low, the refrigeration unit is shut down, and the plate heat exchanger is activated to transfer heat. Each year, the natural cold sources can be tapped to provide cooling for three months, which has substantially reduced the runtime of air conditioners as well as energy consumption.

Heat exchanger

Terminal equipment

Cooling tower

Cooling pump

Cooling machine

Chilled water pump
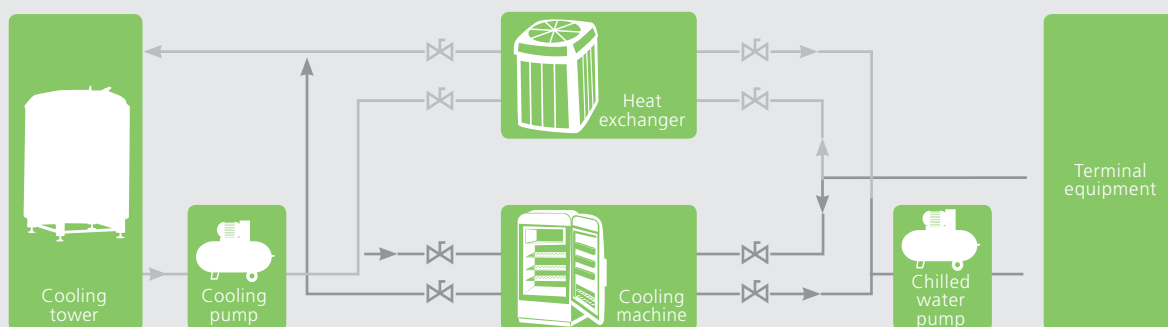
Case Study:
Renovation of Lighting Systems in the Shanghai Base

In 2012, the Shanghai Base applied optical control technologies to its lighting systems and replaced halogen bulbs with LED lights, enabling the base to save more than 800,000 kWh of electricity per year.

The indoor emergency lights were originally designed for continuous 24 hour use, which was wasteful. The emergency lighting systems for areas such as corridors, elevator lobbies, and staircases, have been transformed into optically controlled systems. The new systems activate when there is insufficient natural light and turn off lights when natural illumination conditions are sufficient, thus saving 280,000 kWh of electricity per year. In addition, 800 energy-consuming halogen bulbs in elevator cars and corridors have been replaced with LED bulbs, saving 560,000 kWh of electricity per year.
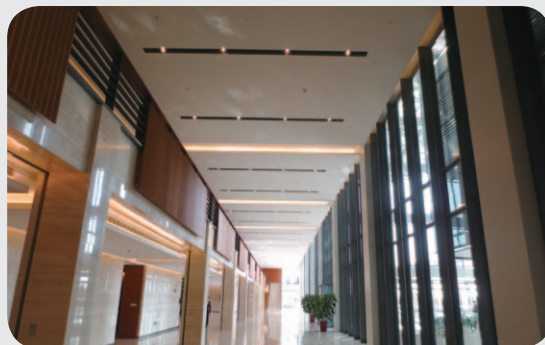
Lighting systems in the Shanghai Base

In 2012, utilizing energy conservation measures and technology, Huawei's ten bases in the China Region saved over 50 million kWh of electricity. Energy conservation data for Huawei bases:

Area	Key Energy Conservation Activities		Power Savings (10,000 kWh)
Shenzhen	• Renovation of lighting systems (halogen bulb replacement with LED bulbs and optical lighting control upgrade) • Installation of automatic glass doors and air curtain machines to reduce cold air leakage • Timing control adjustment of water heaters • Discharge management of testing devices in laboratories	• Automation of basement ventilation systems • Equipment upgrade and optimization of air conditioning operation • Optimization of transformer operation	2070
Dongguan	• Renovation of lighting systems • Wind machine optimization of clean rooms • Pipe testing and optimization of air compressor operation • Operational optimization of testing devices	• Optimization of air conditioning operation • Solar photovoltaic power generation • Timing control adjustment of water heaters • Optimization of experimental projects	724
Nanjing	• Timing control adjustment of water heaters • Elevator control optimization • Water cooling technology	• Energy-conserving renovation of lighting systems • Utilization of ice storage air conditioning systems and optimization of air conditioning operation • Utilization of natural cooling system and optimization of precision air conditioning operation in data centers	690
Shanghai	• Energy-conserving renovation of lighting systems • Timing control adjustment of water heaters	• Optimization of air-conditioning operation • Optimization of transformer operation	536
Beijing	• Energy-conserving renovation and optimization of lighting systems • Optimization of air-conditioning operation	• Timing control adjustment of water heaters	307
Langfang	• Energy-conserving renovation and optimization of lighting systems • Elevator control optimization • Optimization of air conditioning operations	• Optimization of transformer operation • Timing control adjustment of water heaters	55
Xi'an	• Energy-conserving renovation and optimization of lighting systems • Optimization of air-conditioning operation • Discharge management of testing devices in laboratories	• Timing control adjustment of water heaters • Optimization of precision air-conditioner system in data centers	220
Chengdu	• Energy-conserving renovation and optimization of lighting systems	• Timing control adjustment of water heaters	290
Wuhan	• Energy-conserving renovation and optimization of lighting systems • Timing control adjustment of water heaters	• Discharge management of testing devices in laboratories • Optimization of air-conditioning operation	130
Hangzhou	• Energy-conserving renovation and optimization of lighting systems • Elevator control optimization	• Timing control adjustment of water heaters • Optimization of air-conditioning operation	65

4.3 Sustainable Utilization of Resources

All countries, to varying degrees, are facing resource shortages, which are becoming even more critical as the world economy continues to develop. Contradictions between resource constraints and the demand for development have generated increased awareness of the crisis among the general population. Resource shortages are the main factor restricting the economic development of many countries. Ways on how to effectively reduce the consumption of resources and improve utilization efficiency through systematic management have become a strategic focus of Huawei.

Water Resources

Huawei is attentive to the protection of water resources and proper sewage disposal by focusing on the allocation, protection, and conservation of water resources. We have implemented stringent measures for water resource management, aiming to improve our capability in this regard and increase utilization efficiency.

Most of the water we consume is used for landscaping, food services, cooling, and production activities. To reduce water consumption, Huawei implements water conservation measures, such as collecting rainwater, using recycled cooling water, and using reclaimed water for cleaning and landscape maintenance of our campuses.

Huawei obtains production and domestic water from the municipal water supply system, and discharges wastewater to the municipal drainage system, without affecting external water sources, such as surface water and groundwater.

Water consumption of Huawei's China Region (10,000 tons)

Year	Value
2010	312.97
2011	356.62
2012	448.94
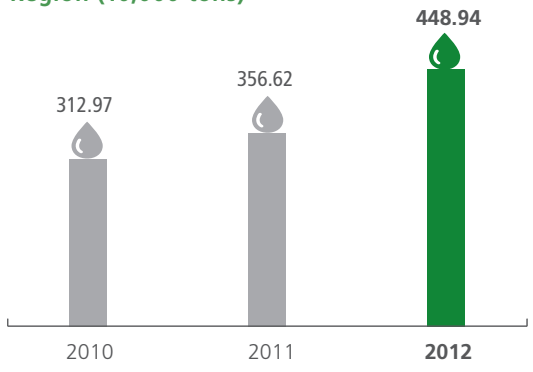
Case Study:
Water Conservation in the Nanjing Software Base

Huawei's Nanjing Software Base has adopted a variety of measures for water conservation, saving 364 m³ of water each day and reducing total water consumption by 25% ideally.

Technological Measures	Water Saved (%)
Water-saving devices for commodes	33%
Infrared faucet sensors	75%
Infrared urinal flush sensors	43%
Waterless urinals	90%
Air conditioning condensate recovery	8%
Rainwater recycling system	25%

4.4 Pollution Prevention and Treatment

Pollution prevention and treatment are an integral part of Huawei's environmental protection strategy. Through lean and clean manufacturing, we have successfully reduced wastewater, waste gas, and solid waste. Appropriate measures have also been taken to effectively dispose of waste in such a manner as to reduce environmental impact.

Wastewater

Huawei's wastewater effluents consist primarily of domestic sewage. In 2012, results from wastewater testing performed at our Shenzhen, Dongguan, Beijing, Shanghai, and Nanjing bases demonstrated compliance with national and regional standards.

Waste Gas

Huawei's waste gas emissions primarily consist of generator gas, kitchen fume exhaust, and welding gas. The results of testing performed in 2012 on waste gas emissions at our Shenzhen, Dongguan, Beijing, Shanghai, and Nanjing bases revealed compliance with national and regional standards.

Solid Waste

The communications industry, particularly the mobile communications industry, produces a great deal of electronic waste (mobile phones, SIM cards, mobile phone batteries, storage batteries, etc.) each year, resulting in direct or indirect pollution to the environment. As a manufacturer, Huawei has fully realized our responsibility in treating waste products by strictly adhering to electronic waste management laws and regulations of each country and by taking a proactive approach in the promotion of recycling and reuse of waste products.

According to the European Union (EU) Waste Electrical and Electronic Equipment Directive and regulations on waste packaging materials and battery recycling provisions of all countries, Huawei formulated a system for electronic waste equipment to manage scrapped products and materials, including the recycling, reuse, and disposal of waste equipment.

Huawei established a waste scrap disposal center in Shenzhen and jointly established regional scrap disposal platforms with waste service providers in Latin America, Europe, Africa, Asia Pacific, and China. This enabled us to provide one-stop services to dissemble and recycle telecom equipment waste from Huawei, along with waste delegated by customers. Electronic waste is handled in an environmentally friendly manner with resources recycled and reused. In addition, the recycling process

is monitored until the handling is completed. Therefore, the establishment of these platforms ensures sustainable utilization of resources.

In 2012, the total waste Huawei disposed of globally amounted to 7,336 tons. Among the total waste, 96.6% of raw materials were reused and 343 tons of hazardous waste incinerated, with only approximately 3% of waste that was disposed of in landfills.

3.4%

96.6%

Landfilled waste   Reused waste
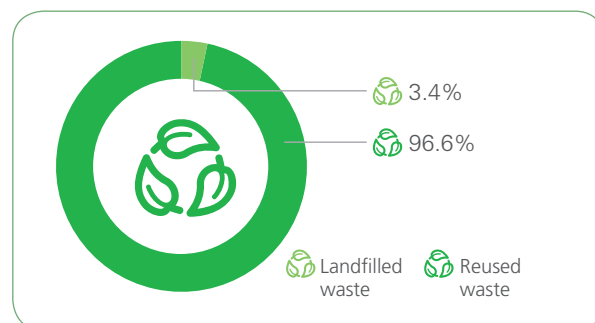
Case Study:
The Proportion of Scrapped Products that are Landfilled Falls to 3.4% in 2012

Supplier T, Huawei's Singaporean waste service provider in Asia Pacific, transforms circuit boards into raw materials for future products through crushing and refining. The sludge is then transported to Singapore's public waste incineration plants which transform heat generated from burning the sludge into electricity. This process has reduced the proportion of buried waste to only 0.04%.

Supplier D, Huawei's hazardous waste service provider in the China Region, is responsible for disposal of wastewater, waste residues, and waste organic solvents that are generated in production lines. In 2012, Supplier D helped to dispose of 343 tons of hazardous waste from the Shenzhen campus, 54 tons of which were incinerated. The heat generated from burning the scrapped products was transformed into electricity while residues were buried, bringing the proportion of waste buried down to 1.84%.

Huawei has always been a staunch proponent and practitioner of environmental protection. In the future, we will continue to innovate on technology conducive to energy conservation and emission reduction, and provide customers with end-to-end green communications solutions, including green site, green equipment room, green transmission, and green energy offerings. Together with partners, we will make continuous efforts to promote the environmental protection of the industry chain as well as the advancement towards a low-carbon society.

CHAPTER 05
Seeking Win-Win Development

Win-Win

- Care for employees and offer varied career paths that help realize their individual value
- Proactively make social contributions to countries and communities in which Huawei operates
- Operate with integrity and in compliance with applicable laws and regulations
- Focus on managing Huawei's own risks
- Cooperate closely with suppliers and play a leading role in assuring harmonious development across the industry chain

Amidst deepening economic globalization and growing social awareness, stakeholders are shifting their focus from the economic performance of an enterprise to the corporate social responsibility the enterprise undertakes. Stakeholders are increasingly concerned about whether the enterprise improves working conditions, operates with integrity and in compliance with applicable laws and regulations, and contributes to local communities to drive value chain sustainability. As a result of the global economic slowdown, enterprises are facing tremendous operating risks, with many companies suffering consecutive losses or going bankrupt. Reports about delayed salary payments, layoffs, and other negative news are flooding newspapers. In addition, certain companies forsake product quality for blind business expansion and short-term benefits, causing numerous customer complaints and dampening customer confidence. Enterprises should, instead, proactively shoulder social responsibilities by stabilizing employment, contributing to harmony in local communities, and exerting positive influence on the supply chain. Fulfilling social responsibilities is a way of demonstrating a sense of responsibility and a means to gather strength for further development. Driving value chain sustainability is both a challenge and an opportunity for any enterprise.

Maintaining value chain sustainability is a shared responsibility of all stakeholders in the value chain, including Huawei. Huawei's growth hinges on social progress. We believe that closely cooperating with players upstream and downstream is essential to building our unique competitive edge. It is through cooperation that we can achieve win-win results and contribute to sustainable social development.
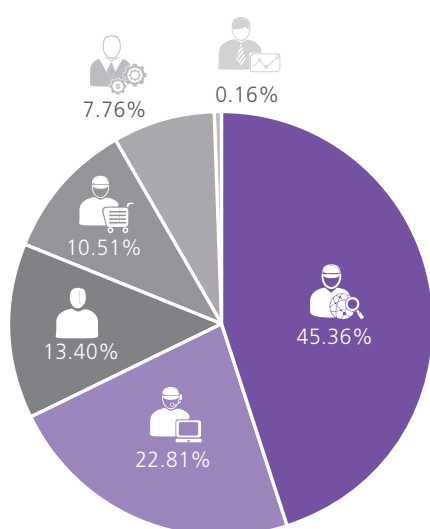
5.1 Caring for Employees

The individual value each employee has to contribute comprises the total value Huawei has to offer. Holding to the principle of "dedicated employees as the foundation", Huawei encourages all employees to give full play to their expertise and provides varied career paths to help them realize their individual value. We are confident that every employee is proud of being part of the Huawei team.

As of the end of 2012, Huawei has approximately 150,000 employees engaged in various business segments.
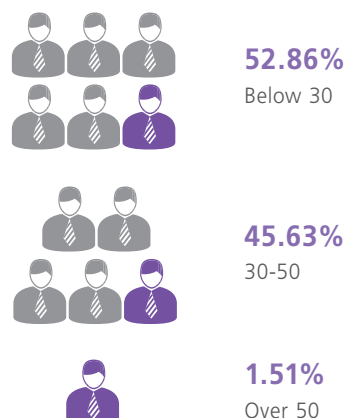
We Respect Our Employees and Protect Their Fundamental Rights and Benefits

We never use any type of involuntary, forced, or child labor. We respect the right of our employees to choose their own religious beliefs and safeguard their privacy in relation to these rights. Our policies on working hours and compensation are aligned with applicable laws and industry regulations. Furthermore, we respect the rights of our employees to communicate freely and participate in lawful events. We endeavor to wipe out discriminatory practices and promote equality of opportunities. We recognize the importance of increasing employee ethical and legal compliance. To ensure employee safety, health, and benefits, we create a sound work environment and provide reasonable and timely rewards to dedicated employees.

Workforce Allocations to Each Operational Field

0.16%
7.76%
10.51%
13.40%
45.36%
22.81%

R&D
Sales
Delivery and Service
Manufacturing and Supply Chain
Others
Strategy Marketing

Age Range of Employees in 2012

52.86%
Below 30

45.63%
30-50

1.51%
Over 50

Ratio of Female Employees to Male Employees

79.11%
Male

20.89%
Female
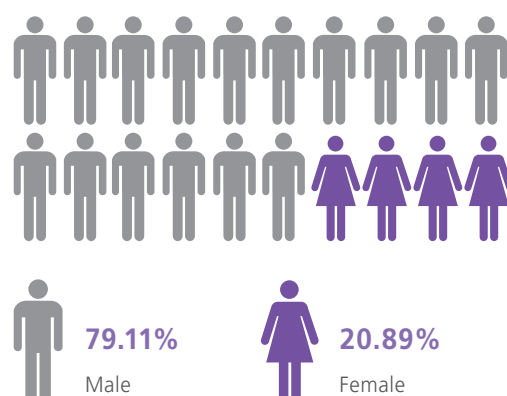
Workforce Diversification

Huawei is a truly global employer, with employees from 156 countries and regions across six continents. We promote a multicultural workforce with around 30,000 non-Chinese employees, a number that has increased each year from 2010 to 2012. On China's mainland, as many as over 4,000 Huawei employees represent 34 of China's 56 minority ethnic groups. Our diversification strategy brings together a diversified workforce, inclusive of all ethnicities, languages, and belief systems.

Area	Percentage (2012)	Percentage (2011)
China	**72.09%**	79.81%
Other Asian countries	**11.32%**	7.56%
Oceania	**0.28%**	0.21%
Africa	**3.84%**	2.85%
Europe	**6.64%**	4.92%
North America	**1.95%**	1.72%
South America	**3.88%**	2.93%

Percentages of employees from different areas worldwide

According to the percentages of Huawei employees by area, the percentage of Chinese employees in 2012 decreased by 7.72% compared to that in 2011, while employees on other continents increased, indicating that Huawei's workforce has become more varied and multicultural.

With a global workforce, Huawei respects the lifestyle choices of all employees and encourages employees from different regions and departments to interact and communicate with each other in a way that suits their particular needs. We provide employees

from minority ethnic groups with venues and opportunities to practice their religions and customs. We deeply value every employee as an individual and we actively promote a culture of respect.

Workforce Localization

Huawei's recruitment policy stipulates that local hires shall be managed in accordance with the laws and regulations of local countries in which they are recruited. Provide local laws permit, Huawei prefers to source talent locally in its operations.

- Huawei emphasizes the development of local hires in countries where they work. Huawei strives to promote local employment and drive the economic sustainability of households and society.

- Huawei selects, nurtures, develops, and retains outstanding local hires, both management and non-management employees, and is devoted to developing local technical and managerial professionals.

In countries outside China, 22% of our mid-to-high-level managers were local hires, and that percentage increases to 29% if entry-level managers are included in the 2012 statistics. The number of local hires in mid-to-high level management positions has been growing year by year.

Percentage of local hires outside China

| 69%	72%	73%
2010	2011	**2012**
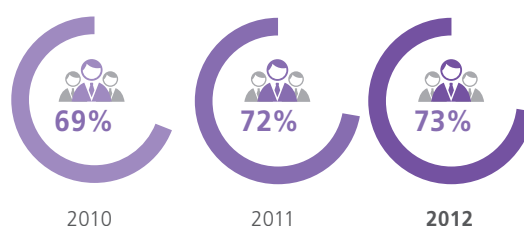
Equality in Employment

Huawei ensures equality in employment and development for all employees in accordance with the laws and regulations of the local countries in which we operate as well as international conventions. To date, Huawei has never been involved in a discrimination case with an employee. Additionally, Huawei offers training and courses concerning labor laws and regulations to ensure legal and respectful working conditions for all employees.

From 2010 to 2012, the proportion of female employees has remained stable, averaging 20.9%. For the last three years, the attrition rate of female employees has been decreasing, while the number of new female employees has been increasing. Huawei has formed the Women's Club where female employees can share their thoughts about learning, work, and general daily life.

Huawei has implemented a female manager development plan that ensures that women are offered equal opportunities to their male counterparts, thus encouraging female employees to play to their strengths and further enhance their achievements.

Percentage of mid- to high-level female managers among all female employees from 2011 to 2012

7.15%
2011

7.90%
2012
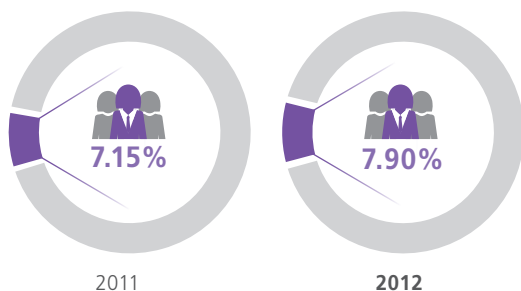
Employment Contract Renewal with Over 98% of Employees in 2012

Huawei holds positions for employees that choose to take parental leave. Most returning employees continue in their previous positions while others choose to transfer to other positions or exit for personal reasons.

Channels for Employees to Lodge Complaints Relating to Their Rights and Benefits

Huawei encourages employees to play a part in corporate operations management. The company has established a labor rights protection mechanism and informs employees of the ways to protect their rights. Specifically, Huawei has opened up the following channels for employees to lodge complaints: hotline of the Committee of Ethnics and Compliance (for issues concerning manager morality and employee benefits/performance appraisals); BCG hotline; hotline for personnel service complaints and recommendations; and email for performance rating complaints.

Employee Career Development

As part of our initiative to help employees grow and realize their individual value, Huawei offers equal and extensive opportunities for learning, training, and promotion. Our performance management system creates win-win results between the company and employees, linking individual employee growth with the company's progress. Huawei provides two career development paths; namely, the management path and the professional path. These paths allow employees to play to their strengths and interests in their pursuit of personal growth.

The performance of all employees has been appraised each year from 2010 to 2012. Outstanding employees are eligible for promotion.

Employee Capability Development

Huawei believes that employees are the foundation of the company. Enhancing their capabilities not only benefits individuals but also contributes to the company's overall growth. In line with employee needs and the particular requirements of their positions, Huawei provides a series of training programs to help employees enrich their knowledge of the company, products, and management while also developing general and specialized skills in all working fields of Huawei.

Year	Total Participants	Total Training Person-time	Average Training Hours Per Employee	Training Investment (Formal Learning Programs) (CNY)	Training Investment (Work-related Learning Programs) (CNY)
2012	76,833	1,136,930	20.67	61,466,400	368,798,400

Making Employees Happier

Apart from emphasizing work performance, Huawei also strives to increase employee happiness and help them achieve work-life balance. For example, at Huawei, there are a variety of corporate and departmental level prizes which give timely material and non-material rewards to employees who either make a significant contribute to an area of work or improve their individual skills and capabilities. For example, employees who pass English qualification exams with high scores will be recognized throughout their department and receive material rewards.

To make life safer and more convenient for employees, Huawei's overseas representative offices provide employee dormitories in places where the surroundings are favorable and public security is sound. In areas where materials are limited, Huawei allocates funds to purchase TVs, table tennis equipment, fitness facilities, books, and DVDs for employees. Huawei builds cafeterias and libraries in subsidiaries outside China and funds round-trip airline tickets for the family members of our employees working abroad.

Easing Employee Stress

Huawei considers our employees as our most valuable assets and strives to help them achieve a work-life balance. To that end, Huawei utilizes a variety of means to ease the stress of employees. For example, Huawei organized several self-check activities to measure stress, attracting more than 70,000 participants as of the end of December 2012. While promoting these activities, we handed out brochures with useful physical and mental tips, inspiring employees to take care of themselves and others. We also encouraged employees to carry out the "3+1" campaign (make a friend, join in a sports activity, take up a hobby, and read a thought-provoking book), which proved good for their physical and mental health.

Overtime Management for Employees of Manufacturing Departments

Huawei's overtime management regulations stipulate that employees can decide whether they choose to work overtime, which must be declared beforehand and approved. Overtime shall, in general, not exceed two hours a day, or three hours a day under special circumstances. Employees are expected to take at least one day off per week. Huawei has introduced the following measures to ensure that the overtime policy is implemented:

1) Established the overtime management system, work assignment system, and other IT systems for the manufacturing departments to monitor, analyze, report, and adjust overtime when appropriate.
2) Strengthened cross-skill training to help with manpower adjustments at peak demand times for different products by developing employees with skills for multiple positions.

Management of Employees with Special Needs

Huawei has established a Special Needs Employee Management Process which is used for managing employees with certain physical disabilities. We have constructed dedicated passages and lavatories for the disabled. In addition to paying mandatory social insurance, Huawei has bought commercial personal accident insurance, so that employees with work-related injuries can receive benefits two times higher than the payout for non-work-related injuries.

Case Study: Colorful Life After Work

At Huawei, there are a wide range of clubs that add flavor to the lives of employees and their family members. We routinely invite employees and their family members to our Family Day and other activities so that they can experience the pleasure of being part of our "big family". Our employees form and join associations that interest them most, including calligraphy, painting, dancing, photography, tennis, table tennis, and social networking among others. Backed by the company, these associations organize activities to enrich the lives and strengthen emotional bonds among employees. Additionally, Huawei celebrates a variety of holidays, such as International Women's Day, Mid-Autumn Festival, Christmas Day, and New Year's Day among others.

Case Study: Leisure Facilities for Employees

Leisure Facilities – New World Cafe and New World Train

Employee Compensation

While complying with minimum wage requirements as stipulated by local laws, Huawei has established a competitive compensation system. Through long-term cooperation with Hay Group, Mercer, Aon-Hewitt, and other consulting firms, our Human Resource Management Department regularly investigates compensation data and promptly adjusts employee compensation in accordance with the results of these investigations, the overall performance of the company, and the individual performance of each employee. Huawei ensures no gender bias in its setting of compensation standards.

The bonus plan of Huawei employees is closely related to work performance. Huawei distributes bonuses to employees according to fulfillment of quarterly responsibilities, performance level, and the completion of major projects, while considering the total compensation package. According to our compensation policy, we review and modify the compensation plan every year to strike a balance between the market competitiveness of the plan and our costs.

Under our long-term incentive mechanism, Huawei shares benefits with employees worldwide and grows with them. Our long-term incentive mechanism aligns the personal contributions of employees with the company's long-term development, fostering the continuing success of Huawei.

"Safety Umbrella" for Employees Worldwide

Huawei continuously scrutinizes measures for managing employee insurance and benefits to further optimize its global employee benefits system, thus providing a "safety umbrella" for all of its over 150,000 employees (including over 40,000 non-Chinese employees) around the globe. We have established a global IT platform that increases the efficiency, standardization, and employee satisfaction with the handling of matters related to employee benefits.

Employee Benefits

Huawei has established a comprehensive employee benefits system. In addition to providing mandatory insurance, Huawei offers a series of commercial insurance plans for employees, including personal accident insurance, critical illness insurance, life insurance, medical insurance, and business travel insurance, not to mention the medical rescue plans for emergencies.

Investment in global employee benefits in 2012: CNY**5.81** billion

To minimize the impact of emergencies on employees scattered over 140 countries and regions, Huawei has established emergency response processes and set up permanent organizations that initiate emergency response procedures immediately following emergencies. Furthermore, Huawei has built emergency assurance work teams at its headquarters, regional, and representative offices, with the headquarters team coordinating resources to develop emergency response plans.

Case Study:
Huawei Charters a Rescue Plane to Save an Employee in Danger

On the evening of December 4, 2012, a 28-year-old employee surnamed Wang, who worked for the Angola Representative Office of Huawei, felt sick and went into a coma. The Representative Office immediately sent the employee to a local hospital specializing in malaria treatment. The employee was diagnosed with cerebral malaria, and suffered from liver and renal failure, for which the hospital issued a Notice on Critical Illness. In response, Huawei immediately initiated emergency rescue procedures and took the initiative to transfer the employee to another country with advanced medical facilities. On the morning of December 7, Huawei chartered a rescue plane that transported the employee to a top hospital in Johannesburg, South Africa. During treatment, colleagues from the Angola Representative Office took turns looking after the employee, while our representative offices in Angola and South Africa called upon people to donate over 10,000 mL of blood to ensure an adequate blood supply for the treatment efforts. At present, the employee is in good condition.

Seeking Win–Win Development

Prohibition of Forced Labor

There is no case in which Huawei has used forced labor in its operations. Adhering to labor laws and regulations, Huawei explicitly forbids the use of forced labor by formulating reasonable regulations on key procedures, including recruitment, employment, and resignation.

Apart from forbidding forced labor in our own operations, we have positively influenced suppliers by requiring them to abide by labor laws and regulations.

Non-Discrimination

Huawei has formulated non-discrimination policies and observes applicable laws and regulations. In terms of recruitment,

training, promotion, compensation, and benefits, Huawei never discriminates against employees on the basis of race, gender, region, nationality, age, pregnancy, disability, or other factors.

Employee Health and Safety

Huawei prioritizes employee health and safety. We have developed management processes and operational guides and implement an occupational health and safety management system to prevent accidents in workplaces, manufacturing, firefighting, and employee services (logistics). In addition, Huawei has appointed a Chief Employee Health and Safety Officer and set up a vocational health and safety leadership team that periodically communicates with representatives of Huawei's Union Committee and resolves issues to further safeguard employee health and safety.

Safety-related operating indicators from 2010 to 2012:

Item/Year	2010	2011	2012
Work-related Injury Rate (per thousand employees)	0.415	0.282	**0.353**
Number of Work-related Fatalities	1	0	**1**

Note: Data only includes the injury rate of employees who were employed by the China Region.
Data only includes the work-related fatalities of employees who were employed by the China Region. In 2012, an employee died in a car accident on the way to work.

Safety of Working Environment

Huawei is devoted to creating a personalized working environment that promotes employee health and safety.

In 2012, Huawei extensively implemented the Enterprise Asset Management (EAM) system, enforced the *Employee Working Environment Standards*, and complied with strict safety requirements by shutting off power supplies to overhaul electrical systems.

- We implemented the EAM system to manage such services as basic data, preventive maintenance, corrective maintenance, planning, energy, and materials. The system monitors preventive and corrective maintenance on key equipment with safety implications, thereby ensuring the safe operation of various equipment and facilities.

- We formulated and enacted the *Employee Working Environment Standards* to continuously monitor workplace data (e.g., formaldehyde, carbon dioxide, noise, aerobic bacterial count, lighting, temperature, and humidity) and resolve any problems identified. In newly constructed buildings, we installed variable air volume systems and building automation systems to monitor and control such parameters as indoor temperature, humidity, and density of carbon dioxide.

- During weekends and holidays, we shut down power supply to check or overhaul transformers, high- and low-voltage cabinets, uninterrupted power supply systems, direct current cabinets, power distribution boxes, and bus plug boxes, in order to ensure their safe operations. In 2012, 95% of power distribution systems in all our bases were checked or overhauled.
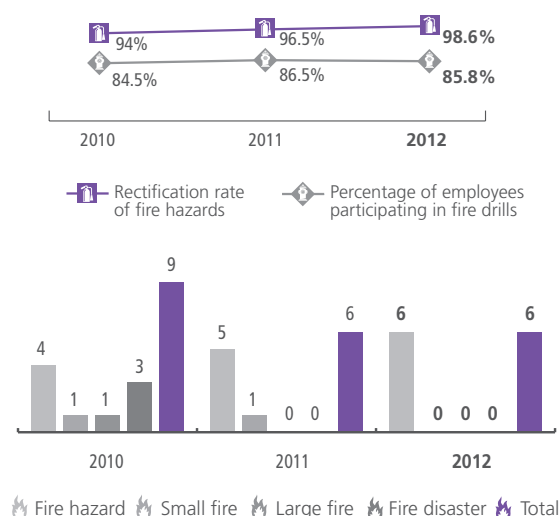
Manufacturing Safety

In 2012, Huawei promoted our "I Want Safety" management concept throughout all manufacturing departments. This strategy involved implementing regulations and policies and establishing a multi-level safe manufacturing inspection model in multiple locations. As a result, no serious accident occurred in 2012. Over the past three years, the accident occurrence rate has been significantly reduced.

Fire Control Safety

Fire control and management ranks high in terms of ensuring employee safety at Huawei. In 2012, Huawei designated 787 employees to take charge of fire control. Throughout 2012, six fires occurred, with a total loss of CNY3,250. The number of accidents and total reported losses is at the lowest level for the three years. In 2012, we organized 54 fire drills. During these drills, 77,231 employees were evacuated, accounting for 85.8% of the employees on-site.

As part of our efforts to define fire control responsibilities worldwide, we successfully implemented the fire control responsibility system in 27 representative offices in China and 72 overseas organizations. We released the *Regulations on Safety and Fire Control Responsibility System in Overseas Organizations* and delivered documents titled *Practical Training for Fire Control and Safety Managers* and *Training Materials on Safety and Fire Control in Overseas Organizations*.

Fire Control Efforts and Fire Accidents from 2010 to 2012

	2010	2011	2012
Rectification rate of fire hazards	94%	96.5%	98.6%
Percentage of employees participating in fire drills	84.5%	86.5%	85.8%

Legend: 🔲 Rectification rate of fire hazards — 🔷 Percentage of employees participating in fire drills

	2010				2011				2012		
Fire hazard	4				5				6		
Small fire	1				1				0		
Large fire	1				0				0		
Fire disaster	3				0				0		
Total	9				6				6		

🔥 Fire hazard 🔥 Small fire 🔥 Large fire 🔥 Fire disaster 🔥 Total

Employee Service (Logistics) Safety

By adopting market-oriented operating models, our organizations in China meet employee needs for catering, transportation, and other services. In offering quality services, we always put safety first.

Food Health and Safety for Employees

Apart from implementing hazard analysis critical control points (HACCPs) in the operation of Huawei's own cafeterias, we instituted several programs in 2012 to ensure food safety. These programs focused on providing a wider variety of food choices, improving food sourcing processes, monitoring food preparation procedures online, and testing food safety.

1) Providing a wider variety of food choices: In 2012, our Dietary Management Department provided diversified catering services and upgraded cafeterias to deliver a better experience and meet the dining needs of various tastes.

2) Improving food sourcing processes: To ensure food safety, Huawei controls food quality from the very beginning of the food supply chain. Our food sourcing project teams in both Shenzhen and other regions spent almost one year qualifying approximately 80% of bulk food suppliers, including rice, flour, oil, meat, bean product, live poultry, frozen food, and egg suppliers. With the help of Huawei, our smaller food suppliers are able to directly cooperate with large-scale food companies. Through these efforts, we reduce procurement risks and guarantee food safety.

3) Monitoring food preparation procedures online: We installed video monitoring systems in kitchens in Chengdu, Shanghai, Nanjing, and Sections F and H in Shenzhen.

4) Testing food safety: In May 2012, Huawei established a laboratory in Shenzhen to spot-check pesticide residue, nitrites, and other high-risk elements in food. In 2012, the laboratory tested a total of 1,000 samples, thereby effectively monitoring major food items from suppliers. In October, offices in China purchased and used equipment capable of quickly testing food products.

Employee cafeterias

Huawei Helps Employees Prevent Traffic Accidents

Huawei requires employees to sign driving commitment letters and pass examinations on driving theory and skills. By developing and deploying EADMIN and other IT tools around the globe for vehicle management, Huawei keeps track of statistics about vehicles, drivers, accidents, car insurance, and vehicle dispatching. In China, over 1,000 employee shuttle buses are managed by GPS, which monitors the running of buses in real-time. In countries outside China, more and more GPSs are being installed on Huawei's official cars. Through analysis of the characteristics of local areas with harsh weather conditions and low public security, Huawei develops specific driving tips to effectively prevent driving risks and improve driving safety.

From May 23 to May 26, 2012, Huawei organized the Fifth Traffic Safety Week activities themed "Legal Compliance Ensures Safety, Legal Breach Leads to Accidents," aimed at increasing employee awareness regarding traffic safety. During these activities, Huawei attracted 120,000 participants, handed out over 20,000 promotional leaflets, and delivered driving safety training to over 10,000 employees.

Fifth Traffic Safety Week

On-site training on driving safety

Huawei's safety protection department has developed a training mechanism that reflects Huawei's corporate culture to deliver training sessions to safety protection staff. The training sessions focus on professional ethics and human rights protection. All our safety protection staff receive methodical training and undergo assessments before taking up office. After they assume the safety protection job, they are required to regularly go through safety-related assessments.

Medical Examinations and Disease Prevention

Huawei provides several types of free medical examinations for employees, including medical examinations for new employees, annual medical examinations for regular employees, occupational health examinations, and medical examinations for employees who return to China from overseas countries. In addition, Huawei cooperates with medical examination suppliers to provide value-added services for employees after checkups, including tracking health problems found during checkups and providing guidance on how to handle health issues.

Snapshot of Medical Examinations for Employees in 2012:

Medical examinations for new employees	20,000
Special medical examinations for employees outside China	3,200
Annual medical examinations for regular employees	79,000
Occupational health examinations for employees	3,400

Health Assurance for Overseas Employees

Huawei supports health initiatives for employees working outside China by developing healthcare policies, publicizing knowledge on how to prevent infectious diseases, providing consultation and training, and distributing healthcare materials.

Our overseas representative offices are very concerned about the health impact of local infectious diseases and fully equipped to manage these risks. In areas where infectious diseases are prevalent, our representative offices delivered training to provide knowledge about the diseases, including prevention measures and how to handle emergencies, and developed the *Guide to Preventing Malaria, Typhia, and Dengue* and *How to Keep Mosquitoes Away* brochures. They also distributed first-aid kits for individuals, vehicles, and office areas, and handed out mosquito nets, screening doors and curtains, lamps, medicines, and other articles for deterring or killing mosquitoes. Regarding drinking water safety in harsh areas, representative offices offered appropriate guides, tested water quality, and supplied barreled pure water or water purification devices in places where tap water is undrinkable. By actively cooperating with international travel healthcare centers, Huawei vaccinated employees, assessed their health conditions, and released early warnings against epidemics. As a result, the incidence of infectious diseases decreased by 46% in 2012 compared to the previous year. In addition, Huawei optimized emergency response plans in order to promptly allocate resources (such as a chartered rescue plane) should employees become seriously ill or injured. With these initiatives, Huawei has saved the lives of a number of employees.

5.2 Social Contribution

We believe in the power of communications to connect people and enable information access across economic, social, and geographic boundaries. We are aware that access to education is vital for creating opportunities that support sustainable and fair development. We recognize the need for everyone to take part in protecting the world's environmental resources. We support the countries and communities where we operate by contributing to the local charity, health, and disaster relief needs of these societies.

UK:
Continued to implement the Huawei Undergraduate Work Experience Program
Supported The Prince's Trust Foundation

Germany:
Donated laptops to Labdoo, a non-profit organization which supports child education in developing countries

France:
Continued to implement the Huawei Undergraduate Work Experience Program
Organized the first technical conference at ESIEE Engineering School

Italy:
Signed an MOU for launching the Huawei Undergraduate Work Experience Program

Spain:
Donated instant networks to the Vodafone Foundation to quickly restore communications services in case of disasters
Signed an MOU for launching the Huawei Undergraduate Work Experience Program

US:
Volunteered at schools in Santa Clara
Sponsored the NGO K to College

Mexico:
Supported an ICT innovation contest among youngsters

Bolivia:
Carried out volunteering activities aiming to raise educational awareness

Zambia:
Upgraded equipment at the University Teaching Hospital

Tanzania:
Implemented the Huawei ICT Star Program for Tanzania Education

Angola:
Supported the E-Net Project that provides free Internet access to youngsters

Tunisia:
Sponsored the Chinese Bridge Competition to promote cultural exchanges

Morocco:
Continued to implement the Telecom Seeds for the Future Program

Nigeria:
Granted scholarships to ICT students at the University of Lagos
Supported the Nungtso Charity Foundation

South Africa:
Supported campaigns against child abuse

An Overview of Huawei's Main Charitable Activities in 2012

Poland:
Supported the School with Class 2.0 Program in education

Turkey:
Provided post-disaster relief following an earthquake in the Van Province

Hungary:
Continued to implement the Huawei Innovative Leaders of Tomorrow Scholarship

UAE:
Continued to implement the Huawei Undergraduate Work Experience Program

Russia:
Established an ICT Training laboratory

China:
Donated to the Care Association and carried out charitable activities

Japan:
Provided post-disaster relief following an earthquake and ensuing tsunamis
Supported the Keidanren Committee on Nature Conservation Fund in environmental protection projects

India:
Continued to implement the E-Hope Program
Supported students enrolled in Chinese universities through the Huawei Maitree Scholarship Program

Philippines:
Offered help in areas swept by Typhoon Washi
Supported the Eagle Conservation Program Foundation to carry out environmental activities

Malaysia:
Continued to implement the Telecom Seeds for the Future Program

Indonesia:
Continued to implement the Telecom Seeds for the Future Program

Australia:
Supported the Tour de Cure Foundation to fight against cancer

Seeking Win–Win Development

Bridging the Digital Divide

With our Telecom Seeds for the Future Program, we have established and made available 16 training centers worldwide. We provided thousands of students with ICT training, scholarships, internships, and work experience programs.

Huawei takes the initiative to work with partners on programs that help nurture talent, foster educational opportunities, and enhance information access to underserved communities around the world by leveraging the full potential of communications technologies. We also establish training centers and launch joint teaching initiatives to develop local talent, transfer knowledge, and encourage regional building and participation in the digital community.

Huawei's Telecom Seeds for the Future Program Nurtures ICT Talent

The fast growing ICT industry has brought constant changes to the needs of our customers and therefore our business model(s). As a result, across the ICT ecosystem, there is an urgent need for a large number of technical staff that can address the challenges posed by this transformation. In many countries there is a knowledge gap between what is learned in the classroom and what skills are necessary in a real-world setting. Therefore, the pool of skilled personnel should be provided opportunities to learn about the latest technologies. Huawei developed the Telecom Seeds for the Future Program to develop local ICT talent, transfer knowledge, promote a greater understanding of, and interest in, the telecommunications sector, and encourage regional building and participation in the digital community.

The program has been implemented in a number of countries, including Congo, France, Ghana, Guinea, Indonesia, Italy, Kenya, Malaysia, Morocco, Singapore, Thailand, Uganda, United Arab Emirates, and the UK. Through the program, Huawei:

- Works with universities and other local organizations to provide some training on communication technologies. For example, Huawei Authorized Network Academy (HANA) offers technology courses, teacher training and qualification, and career certification. We also establish or make available existing ICT training centers. These facilities help to enhance the education experience available to students in local markets.

- Provides scholarships and internships for top students.

- Offers a work experience to selected students. The Huawei Undergraduate Work Experience Program provides ICT students with the opportunity to gain valuable hands-on work experience at Huawei's offices in China, enabling students to be fully immersed in a global business operation, cross-cultural work practices, and Chinese culture.

What makes this program unique is that, in addition to providing scholarships and internship programs that can boost students' understanding of the telecoms world; it also offers first-hand learning opportunities through interactions with Huawei staff and visits to Huawei laboratories, where program participants can witness live demonstrations of the latest technology.

In some countries, Huawei, in partnership with local universities, promotes localized innovation by encouraging ICT students to develop mobile applications that improve the daily lives of people around the world.

Thanks to the program, students are able to enhance their ability to adapt in the ICT industry as they gain an understanding of the most up-to-date technologies and skills, as well as local innovation needs. By acquiring hands-on skills, students are able to gain confidence, which helps them further excel in their careers and in multi-cultural business environments. Local universities are able to improve their offerings in the ICT sector and provide a higher level of education to students. The program has also enhanced the available pool of skilled personnel in the technology sector, which in the long term will help reduce unemployment rates; and is in line with the strategic digital plans of many countries as they seek to bridge the digital divide.

Uganda students learning to assemble tech products

Malaysian students

With our Telecom Seeds for the Future Program, we have established 16 training centers worldwide and granted scholarships to thousands of students from 50 universities across 14 countries.

British interns at Huawei

French students learning in Huawei's showroom

Case Study:
Huawei's E-Hope Program Popularizes Computer Education Among Young Students in India

Through the E-Hope Program, we have popularized computer basic skills among students in rural and outlying areas across India. Furthermore, we have taught computer operation skills and provided the latest information technologies to these students, thereby promoting equal opportunities in information education and narrowing the knowledge gap in digital technology in India.

Following the implementation in Delhi, Uttar Pradesh, Rajasthan, and West Bengal in 2011, the E-Hope Program was carried out in Hamirpur, Bilaspur, Una (Himachal Pradesh), and Haldwani (Uttrakhand) in 2012.

Huawei plans to empower 100,000 students each year with access to computer knowledge and education. The program is being implemented across India step by step and is expected to establish a knowledge network that spans 1,000 schools over the next two to three years.

Opening ceremony of the E-Hope Program in Farrukhabad, India

Students benefiting from the E-Hope Program

Seeking Win–Win Development

Creating Opportunities Through Education

Huawei believes that access to education is critical to creating opportunities that will support sustainable and equitable levels of development in the countries in which we operate. Telecommunications can play a critical role in making that access possible and we help form effective education systems, sharing our expertise in the ICT area with local communities and providing and developing technologies that enable online learning and multimedia classrooms.

Case Study:
Huawei Implements the Innovative Leaders of Tomorrow Scholarship Program in Hungary

In early 2011, Huawei initiated the Innovative Leaders of Tomorrow Scholarship in Hungary, benefiting 15 students from two leading universities, the Technical Institute of Budapest and the Budapest University of Technology and Economics. In addition to the scholarships, students will be offered the opportunity to take part in Huawei's events such as roadshows, conferences, and factory visits. All these activities are conducive to helping students increase their ICT knowledge and skills. Huawei plans to support 75 outstanding students by 2015, awarding scholarships amounting US$150,000.

Mrs. Rózsa Hoffman, Secretary of State for education, is congratulating a scholarship winner

Case Study:
Huawei Supports the School with Class 2.0 Program in Poland

The objective of the program is to encourage the use of ICT to educate young global citizens. Teachers, students, and experts are working together, gathering and sharing ICT good practices in teaching and learning.

Huawei supports the School with Class 2.0 Program in cooperation with the Polish Minister of Education, and in partnership with the Centrum for Civic Education and the Gazeta Wyborcza (the biggest Polish daily newspaper). As a partner of the program, Huawei donated PLN100,000 (around US$33,000).

Since 2010, 24 on-site trainings were organized; 789 schools participated in the program; 1,800 educators were involved in conferences and workshops; 3,500 teachers were trained on an e-coaching platform; and approximately 65,000 students were reached.

Children using Huawei devices

Promoting Environmental Initiatives

Huawei recognizes the need for everyone to take part in protecting the world's environmental resources. Huawei actively collaborates with public and private partners on programs that leverage communications technologies and expertise to promote sustainable development and environmental protection in order to achieve our objective: "Green Communications, Green Huawei, and Green World."

Case Study: Huawei Supports Safaricom Marathon in Kenya

Huawei has sponsored the Safaricom Marathon in Kenya for five consecutive years. On June 30, 2012, Huawei donated US$100,000 to the 13th Safaricom Marathon themed "Run Wild for the Wild." Funds were donated to the Lewa Wildlife Conservancy to improve living conditions in rural areas and to preserve the natural environment in Kenya.
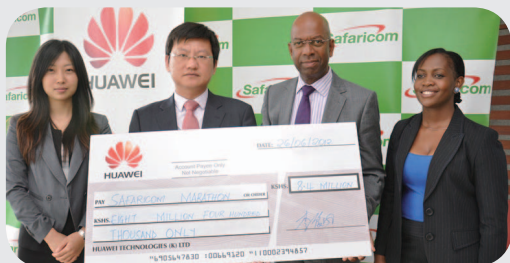
Donation ceremony for the Safaricom Marathon in Kenya

Case Study: Huawei Protects Biodiversity in the Philippines

Huawei and the Carrier G donated 500,000 Philippine Pesos to the Eagle Conservation Program Foundation in order to help improve the living conditions of people and to protect biodiversity in the Arakan valley.

Contributing to the Societies Where We Operate

Huawei is committed to supporting the countries and communities where we operate by contributing to the local charity, health, and disaster relief needs of these societies.

Case Study: Huawei Fights against Cancer with Tour de Cure Foundation in Australia

As a corporate partner of the Tour De Cure, a cycling foundation committed to finding a cure for cancer, Huawei supported the tour in 2012 with an AUD50,000 (about US$52,000) sponsorship. Lisa Connors, Huawei Australia Employee and Tour de Cure Rider, personally raised over AUD15,000 (about US$16,000) for cancer research, support, and prevention on top of Huawei's AUD50,000 donation. Huawei also contributed a number of its consumer devices (such as Mini Wi-Fi hotspots) as fundraising prizes.
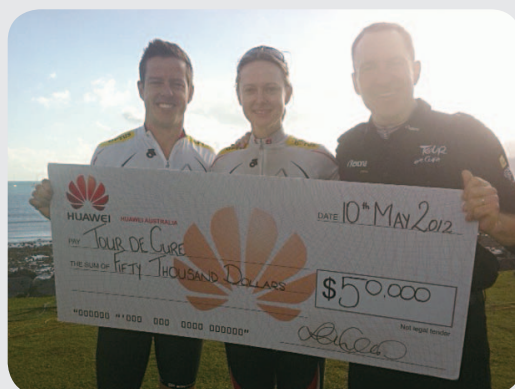
Donation to Tour de Cure Foundation to fight against cancer

Case Study:
Huawei Partners with K to College to Support Underprivileged Students in the US

Huawei US partnered with K to College, a non-profit organization that operates the largest free school and dental supply program for underprivileged students in California. Support from Huawei US will provide about 2,000 underprivileged students across the state with school supplies for learning and dental care kits for health maintenance.

"I'm proud to see this partnership form between Huawei, a large International technology company, and K to College to help provide educational support for the future of our nation's economic competitiveness and success," said US Congressman Mike Honda.

School supplies donation at Scott Lane
Elementary School

Case Study:
Huawei Provides Post-disaster Relief Following the Van Earthquake in Turkey

In October 2011, the city of Van was stricken by an earthquake. Huawei restored quickly the infrastructure needs in 24 hours. In addition, we provided primary school students with 330 sets of 7 to 12-year old childrens clothing. Huawei also participated in the Vodafone Foundation's First Step project to establish three new nursery classrooms, in partnership with the Turkish Red Crescent and the Mother Child Foundation (AÇEV). We also took part in the Turkey's Moneybank for Van program initiated by Turkcell under the auspices of Ministry of National Education (MEB) and the Turkish Education Foundation (TEV), to build a campus that includes houses for 192 teachers and a dormitory for 132 students. Scholarships were also given to 100 students.

School children benefiting from Huawei's support

Case Study:
Huawei Supports the Nungtso Charity Foundation in Nigeria

Since 2010, Huawei has partnered with the Nungtso Charity Foundation, a non-governmental organization whose aim is to provide assistance with life and education for orphans and widows. Each year, Huawei and the Nungtso Charity Foundation also co-organized a Christmas Party and a Happy Children's Day Event for local orphans in Abuja. Huawei supports the Nungtso Charity Foundation, reaching 5 million Naira per year (around US$31,500), and around 500 orphans and widows already benefited from the program.

Christmas party for underprivileged children in Nigeria

Huawei was awarded with the 2012 Communitas Awards in the US for its dedication to community services with the following activities: Telecom Seeds for the Future Program, Innovative Leaders of Tomorrow Scholarship in Hungary, and support to the School with Class 2.0 Program in Poland, to Tour de Cure in Australia, and to Nungtso Charity Foundation in Nigeria.

Huawei was honored with the Support & Improvement in Quality of Education Awards from Blue Dart World CSR Day and Star News thanks to the E-Hope Program in India and the Telecom Seeds for the Future Program.

The School with Class 2.0 Program was nominated for the UNESCO King Hamad Bin Isa Al-Khalifa Prize for the Use of Information and Communication Technologies in Education.

Our Engagement for a Better Society

Huawei aims to contribute to improving the livelihood of people and developing the communities in which we operate. We are fully committed to exemplifying good corporate citizenship to maximize economic, environmental, and long-term social benefits.

5.3 Operations in Compliance with Applicable Laws and Regulations

Huawei abides by ethical business practices, conforms to international conventions as well as laws of local countries, and operates with integrity. We adhere to the *BCG*, implement "transparent procurement" and "transparent sales," and oppose bribery and corruption. In addition, we advocate fair competition and obey antidumping and antitrust laws and regulations defined by local countries, thereby creating a harmonious business ecosystem.

We have incorporated compliance management into every business scenario. Our Legal Affairs Department provides legal guidance in export control, cyber security, trade competition, human resource management, and anti-bribery and anti-corruption tasks. The department also identifies, assesses, and provides warnings against internal and external legal risks, and assists other business departments in ensuring legal compliance. To mitigate risks related to intellectual property rights (IPR), the department protects our own IPR while respecting the rights of other intellectual property holders and ensures that Huawei complies with international IPR regulations.

Export Control

Huawei strictly abides by all applicable export control laws and regulations enforced by Chinese and international authorities. We effectively fulfill our export control responsibilities and obligations, and prioritize these obligations over Huawei's commercial interests.

To better honor our commitment to export control, Huawei has set up the Trade Compliance & Customs Compliance Committee and Trade Compliance Office led by the Chief Legal Affairs Officer. These organizations approve and oversee the implementation of Huawei's trade compliance policies and ensure legal compliance to the greatest extent possible in terms of policies, organizations, and processes. Regarding projects involving export control, we have established a standard export control process in which we carry out many export control measures, including customer reviews, checks on the ultimate purposes of products and solutions, and investigations into risk factors. Through these measures, we ensure our Internal Control Program (ICP) is effectively implemented across the company.

As a global company, Huawei adheres to internationally accepted rules and integrates trade compliance into all day-to-day operations. Huawei insists that an effective, responsive, and preemptive trade compliance management system provides the ultimate foundation for earning the trust of our partners and ensuring operational security while also protecting our corporate reputation and enhancing competitiveness.

Huawei's Trade Compliance Office

The Trade Compliance Office is tasked with formulating and revising Huawei's export control policies, establishing the standard operations procedures for export control, archiving documents and information concerning export control, carrying out publicity and training activities regarding export control regulations and systems, performing internal and external audits, and supervising and guiding other business departments to meet export control requirements in their business activities.

Huawei's Commitments on Export Control:

Huawei pledges to abide by all applicable export control laws and regulations of China, the United Nations, the US, the European Union, and other organizations, countries, and regions. In addition to this commitment, Huawei acts responsibly in matters related to export control, and the company judiciously addresses global trade compliance requirements.

Huawei has established internal control mechanisms for trade compliance that include but are not limited to:

- Training programs and audits on trade compliance
- Product categorization and de minimus calculation
- Customer reviews
- Transaction reviews
- Licensing management
- Document management

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Trade Competition

Openness and competition are the cornerstones for the market economy system. Huawei firmly believes that openness, competition, and cooperation play crucial roles in promoting economic growth and prosperity. Therefore, we abide by ethical business practices, advocate fair competition, and comply with all applicable laws and regulations enforced by international authorities and countries in order to build a sound industry chain ecosystem and enhance fair competition.

To accomplish these tasks, Huawei has established a series of processes and systems that clearly prohibits employing unfair approaches in market competition and requires employees at designated positions to attend training programs.

Prevention of Child Labor

Huawei has never used any form of child labor in any of its operations.

Huawei abides by all labor laws and regulations and prohibits child labor. A comprehensive system is in place for such important processes as recruitment and deployment to help ensure the individuals we hire are of the appropriate age.

In addition, Huawei requires all its suppliers to abide by applicable child labor laws and regulations, contributing to the overall efforts of the global community to improve this area of human rights.

Intellectual Property Rights Protection

Huawei respects the IPR of other holders, complies with international intellectual property laws, and resolves IPR issues through negotiations, cross-licensing, and product cooperation in an open, positive, and friendly manner. Huawei adopts legal means to protect itself against malicious infringements on our IPR.

Huawei Joins and Actively Supports International Mainstream Standards Organizations

As of the end of 2012, Huawei was a member of more than 150 industry standards organizations, including 3GPP, IEIF, IEEE, ITU, BBF, ETSI, ATIS, TMF, CCSA, and OMA. Huawei submitted over 5,000 proposals to these standards organizations and holds more than 180 positions, including board memberships in ETSI, ATIS, OMA, and WFA.

As of December 31, 2012, Huawei has filed 41,948 patent applications in China, 12,453 international patent applications based on the Patent Cooperation Treaty (PCT), and 14,494 patent applications in countries outside China. Huawei has been granted a total of 30,240 patents.

Anti-corruption and Anti-bribery

Huawei prohibits bribery in all its business operations. Huawei abides by business ethics, operates with integrity, and adopts effective systems and proactive measures to oppose and prevent bribery and other corrupt activities. Huawei formulated new regulations on anti-corruption and anti-bribery and implemented these regulations in 2012.

> **To enhance the anti-corruption and anti-bribery efforts of 2011, Huawei took the following actions in 2012:**
>
> - Released updated anti-bribery policies.
> - Required all employees at key positions to sign a letter of commitment.
> - Built a comprehensive anti-bribery system architecture.
> - Established a complete mechanism for handling complaints and feedback.

Business Conduct Guidelines

The *BCG* includes regulations on day-to-day business activities that all Huawei employees must obey. Within our ever evolving business environment as well as the world at large, new ethical and legal issues constantly emerge. As a result, the *BCG* or specific business rules may have new interpretations and the applicability may change. Huawei adheres to two principles: "Gaining Might from a Small Hole" and "Obtaining Benefits from One Source". These principles provide the general direction for uniting its more than 150,000 employees and encouraging them to remain dedicated to Huawei's core corporate values. Huawei's management personnel act with a high-level of personal integrity and self-discipline. All employees, from top executives to entry-level personnel, can derive their income only from their salaries, bonuses, and dividends distributed by Huawei. We have effectively leveraged organizational and institutional approaches to prevent employees at all levels from seeking private interests, protecting the interests of individuals and of the company as a whole.

> **Huawei has included the *BCG* in the document package that must be studied and signed by new hires.**

5.4 Focus on Managing Huawei's Own Risks

Huawei has established a sustainability management system to manage its risks in a more standard way. Through systematic assessments and by studying stakeholder concerns, we have identified several types of sustainability risks and developed appropriate measures.

For example, Huawei has always attached great importance to employee health and safety management. With increasing investments in employee health and safety, we develop processes and guides and adopt improvement measures to prevent safety incidents. We also spare no efforts to provide secure products to customers and consumers. Centered on customer needs, we remain committed to providing quality products and services while lowering operating costs. In addition, we insist on ensuring that product and service sustainability is integrated into every routine task across the company, thereby protecting consumer rights and improving customer satisfaction.

Product Safety

Product safety directly impacts the health and safety of our customers and consumers. Therefore, we do everything in our power to ensure product quality and provide secure products to customers and consumers.

Noise Reduction

Deployment of telecommunications equipment is coming into closer proximity to residential areas. To minimize the impact of equipment noise on people's physical and mental health, Huawei strives to offer customers more competitive products and solutions with less environmental noise, and actively cooperates with customers to support green and healthy lifestyles for the public.

Huawei has made considerable progress in noise reduction design. We no longer stop at traditional approaches that merely measure the sound pressure level (SPL); instead, we have introduced sound array, transmission path analysis, and other techniques used in the industry to diagnose and locate noise. These enhanced efforts aim to limit equipment noises that increase as a result of growing equipment power consumption. In addition, we have significantly enhanced the sound quality of our enterprise device products. Huawei remains dedicated to sound quality research and meets all applicable noise standards for product entry while providing users with superior audio and all-around user experience. At the same time, we keep abreast of the research dynamics on the latest noise reduction technologies. We also joined Network Equipment-Building System (NEBS), European Telecommunications Standards Institute (ETSI), and other international standards organizations to actively participate in developing noise-related standards in and outside China.

Some Laboratories of Huawei
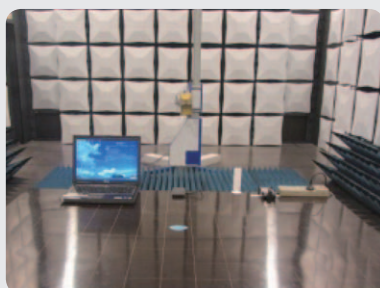
Laboratory for testing electronic magnetic compatibility (EMC)

Laboratory for testing radio frequency signals emitted from mobile phones

Laboratory for testing the specific absorption rate (SAR, an indicator of electromagnetic radiation) of devices

Seeking Win–Win Development

Electromagnetic Radiation

As a major wireless equipment provider, Huawei is particularly concerned with the potential health impact of electromagnetic radiation. We established a mechanism to strictly control electromagnetic radiation to ensure that the wireless communications equipment designed and produced by Huawei complies with associated laws and regulations and is safe for customers and consumers to use. Huawei actively participates in developing electromagnetic radiation control standards in and outside China, and tracks and drives development of basic research as well as related international standards in this field. To date, Huawei has joined and participated in research projects of the International Electrotechnical Commission (IEC), ITU, IEEE, ETSI, China Communications Standards Association (CCSA), WPC, CTIA, PTCRB, TAF, and other standards organizations. Huawei's professional laboratories for electromagnetic radiation are operated in accordance with international standards. Huawei has established many laboratories in different research centers to test products in terms of electrical safety, electromagnetic radiation safety, mechanical environment reliability, environmental protection and energy conservation, and product compatibility, to ensure product security. The laboratories have been ISO 17025 certified by the A2LA and CNAS and accredited by internationally authoritative certification organizations, such as CETECOM, TÜV Rheinland, TÜV SÜD (BABT), and Intertek Testing Services (ITS).

Case Study:
Huawei Devotes Continuous Efforts to Provide Customers with More Comfortable and Low Noise-emitting Products and Solutions

1) We have improved the heat dissipation structure of a case-shaped product and lowered the operating point of its fan, thereby reducing noise emission by 5dB (A).

2) By improving the structure, renovating air ducts, and adjusting the operating point of fans, we reduced the noise emission of an indoor device by 6dB (A). As a result, the device can be deployed in the outdoor cabinet of a customer because the device was compliant with local outdoor noise requirements.

3) Huawei developed a noise reduction module equipped with improved air ducts and extra sound absorption materials, thereby significantly reducing the noise generated from indoor communications cabinets.

Wireless communications cabinet with noise reduction module

Protection Against Electromagnetic Radiation

Huawei has many R&D departments and professional laboratories engaged in researching, testing, and assessing electromagnetic radiation technologies for a variety of products, such as mobile phones, data cards, tablets, fixed stations, wireless access points (APs), wireless routers, and wireless base stations. These departments have partnered with product security certification organizations in key countries and regions around the world to ensure our products meet all laws and regulations on health and safety in each locale.

1. We developed the first LTE TDD mobile phone of the industry, for which testing standards are not in place yet. To gain market entry for this product, we communicated with supervisory agencies in the US, namely, the Federal Communications Commission (FCC) and the Telecommunication Certification Body (TCB). After multiple rounds of rigorous reviews, we were granted FCC certification, thereby signifying a product entry permission issued by the country with the most stringent electromagnetic radiation controls in the world.

2. With its power-reducing technology for hotspots, an LTE TDD mobile phone can automatically adjust the radiant power of its Wi-Fi transmitter or 3G transmitter based on the application scenarios. This feature allows this mobile phone to meet the FCC's multiple legal requirements on using a mobile phone as a wireless router.

3. The wireless APs, wireless routers, and other equipment Huawei launched for the enterprise market were tested in the most severe conditions to measure the electromagnetic radiation emitted by built-in Wi-Fi transmitters. The testing results verified that the electromagnetic radiation emitted by such devices is well within safe ranges provided the equipment is used as intended.

4. We developed a hearing-aid compatibility (HAC) assessment mechanism for devices used by those with hearing impediments. With this mechanism, users can safely and conveniently use mobile phones.

In the carrier market, the deployment environment for wireless communications sites is becoming increasingly complex, and environmental protection and healthcare authorities have reinforced supervision and control over electromagnetic radiation. In response, Huawei has invested a significant amount of human and other resources to help our customers tackle the challenges of controlling electromagnetic radiation. In addition, we always collaborate with our customers to support a green and healthy lifestyle for the public.

Small-sized base stations are expected to become the mainstay in the industry in the future as evidenced by their popularity in recent years because of their superior hotspot and indoor coverage performance. Huawei tested the electromagnetic radiation emitted by small-sized base stations using the testing method designed for handheld devices. According to the testing results, the electromagnetic radiation emitted by the APs and ePico base stations produced by Huawei for households and small enterprises is well below the limits set forth in applicable standards, even though the equipment is placed very close to humans. The results even demonstrated that the radiation emitted from such equipment is far less than that emitted by some types of handheld devices. For example, the SAR of an indoor UAP base station is 0.38W/kg (averaged SAR over a mass of 10g); far below the allowable limit (2W/kg, averaged SAR over a mass of 10g). Deployment of such base stations has almost no health impact on the general public.
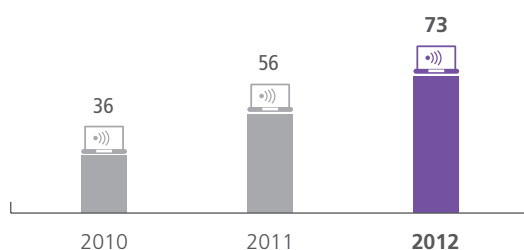
Ergonomics Engineering

The main principle of ergonomics engineering is to ensure all products comply with applicable health and safety standards. Huawei considers ensuring product safety and security its first priority, holding itself to this commitment before any product is delivered to customers. Huawei established a design team to implement ergonomics engineering. The team adopts the user-scenario-based product safety design concept and incorporates the concept throughout the product R&D cycle from planning, designing, and developing to testing. Through these efforts, we provide products that suit users' engineering habits and technical requirements while reducing potential product-related risks to health and safety. (Note: User scenarios, which are used as early input in product design, include the environments in which products are used as well as the skills, habits, and behavior of users when using the products.)

In 2012, we added an additional country to our analysis of user scenarios, expanding to major carriers in 18 countries in North America, Europe, Africa, and Asia. Our analysis helped us fully understand the engineering delivery habits and user skills of people in these countries. By adopting the innovative user-scenario-based design, we were able to develop products that are easy to install and use. Based on our in-depth understanding of user scenarios, we applied ergonomics engineering in product design to make our products conform to the engineering habits and skill requirements of users.

Number of ergonomics design and evaluation projects

2010	2011	**2012**
21	27	**27**
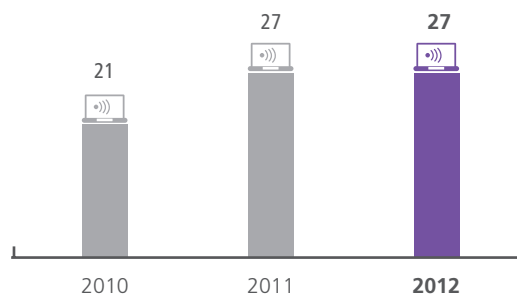
User scenarios analyzed by Huawei globally

2010	2011	**2012**
36	56	**73**

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Case Study: Ergonomics Engineering Projects

1. Active Antenna System (AAS)

   AAS products comprise an innovative, highly integrated, and modular solution which addresses customers' multi-frequency and multi-mode requirements, caters to the market trend, and can be deployed within a limited space in base stations. Huawei successfully conducted AAS field trials in the UK and Germany.

   1) Compared with traditional antenna feeders, the AAS can be transported by two people more conveniently despite its slightly heavier weight.
   2) The installer we use to deploy an AAS in a tower is the same as that for traditional antenna feeders, but the installation method has been simplified. The AAS can be easily installed and maintained at heights by only one person with improved operation safety.
   3) Only one tool is required for AAS maintenance and capacity expansion, simplifying and quickening the operation at any height. The entire maintenance and capacity expansion process can be performed by one person in five minutes.
   4) The installation efficiency for AAS and the required cabling has been improved by over 30%, while the maintenance and capacity expansion efficiency has been improved by 90%.

2. Atomcell

   Atomcell enables networks to cover hotspots and dead zones in cities in a flexible, accurate, and efficient way, thus improving the user experience.

   1) Atomcell is lightweight, highly integrated, and aesthetically pleasing, with a facade that easily adapts to blend in with the surroundings.
   2) Installation personnel can complete deployment of a single Atomcell base station within 30 minutes without prior training.

Customer Satisfaction

More and more customers are shifting their focus from product and service quality to overall sustained success during decision making. Huawei has prioritized the needs of our customers. We strive to provide high-quality products and responsive services while driving down operating costs. We insist on ensuring that product and service sustainability is integrated into every routine task across the company, thereby giving priority to satisfying customer needs. We help customers enhance their competitiveness and profitability, and we will continue to take steps to establish a global customer satisfaction management system.

Huawei has set up regions and representative offices in major countries around the world. We listen attentively to customers and better understand their needs by establishing multi-layer customer-facing organizations and communication channels through such activities such as open discussions, annual meetings, third-party satisfaction surveys, service hotlines, receptions for customers who come to audit Huawei, summits, and routine visits.

| Open discussions and annual meetings	Third-party satisfaction surveys
In 2012, we organized nearly 900 open discussions globally with 239 high-value customer groups. In 2013, we will further leverage open discussions and maintain a high level of customer interaction.	Huawei entrusted third parties with our global customer satisfaction surveys. In 2012, the surveys covered more than 170 customer groups in over 80 countries. In 2013, we will further expand the survey scope to cover enterprise customers.

Service hotlines	Audits by customers
We have established 12 LTACs that provide comprehensive assistance for our operations in over 140 countries. These centers handle and resolve customers' technical issues. Contact personal at these centers are reachable by phone or email. In 2012, Huawei received 69,959 pieces of feedback from customers through the hotlines, of which 430 were negative. We have analyzed the causes and made improvements. In 2013, we plan to expand the service scope to cover enterprise customers.	Since 2003, Huawei has passed the audits of multiple world-class carriers as well as the subsequent routine assessments and audits for various areas. These audits include assessment of management systems, quality, safety, risk management, and sustainable development. These results of these audits help Huawei better understand the key requirements of customers.

To ensure customer satisfaction, Huawei has set up a customer satisfaction survey project team that commissions third parties to conduct customer satisfaction surveys each year. These surveys help us gain a fair assessment of our customer satisfaction indexes, determine the key driving forces behind these ratings, and identify existing problems so that we can fulfill our customer-first commitments and design our main business processes around customer expectations. In doing so, we ensure that all customer requirements and expectations are incorporated into the appropriate processes and addressed in a timely and closed-loop manner.

Tackling technical issues for customers	Handling of customer feedback and complaints
Based on a requirement management process and a unified IT platform, Huawei manages customers' technical issues in an end-to-end manner, from tracking the status of customer requirements to incorporating them into R&D version development. The tracking process is highly visible so that representative offices and account departments can quickly track the status of customers' technical issues related to network, wireless, and other products.	Huawei has established a hierarchical management mechanism at the representative office, regional, and corporate headquarter levels to solve customer complaints in a prompt manner. We have also appointed a dedicated customer satisfaction management team in organizations at all levels to drive the rapid closure of customer complaints and organize efforts to effectively resolve common problems and problems with management systems that have occurred.

Moreover, we have set up a dedicated work team to deal with crucial customer complaints and coordinate internal resources across the company to solve problems quickly. |

Overall customer satisfaction (China)

Overall customer satisfaction (Overseas)
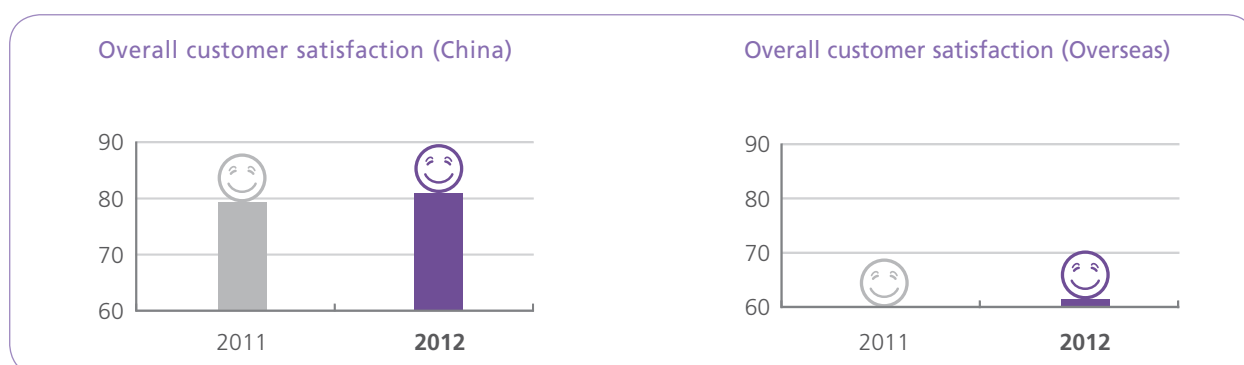
Note: The metrics used to calculate the overall customer satisfaction amongst customers outside of China were changed in 2011; as such, this figure only compares the customer satisfaction scores for 2011 and 2012.

Huawei attaches great importance to protecting the privacy and IPR of customers. Huawei has never infringed on the privacy of any customer nor received any significant complaint related to social responsibility or product safety from its customers. Huawei is improving our customer satisfaction and continuing to earn the recognition of more and more customers who see Huawei as a strategic partner.

5.5 Supply Chain Management

A strong industry chain is essential to the survival of any company. The asset-light business model adopted by Huawei requires us to follow the approach our CEO set forth in his "Dig In, Widen Out" speech and work with suppliers worldwide to build a business ecosystem in which all participants jointly create value and share resources, risks, and benefits. We believe that closely cooperating with our suppliers is essential to building our unique competitive edge. It is through cooperation that we can achieve win-win results and contribute to sustainable social development.

Vision

To manage a self-sustaining supply base rooted in a proactive, innovative and innate commitment to sustainability as opposed to driving compliance via audits. Benchmark favorably against best-in-class

Supply chain sustainability involves labor standards, health and safety, environmental protection, business ethics, and many other topics. At Huawei, our efforts to ensure supply chain sustainability are reflected in our business processes, products and services, and the words and deeds of all employees. We have made supply chain sustainability an integral part of our business development.

Approaches in supply chain sustainability can be separated into three general segments: risk management, efficiency management, and business innovation. All three work in unison, with risk control serving as the foundation, thereby making efficiency improvement the ultimate goal while allowing business innovation to provide the direction. We will help encourage the sustainable development of the industry by focusing on these three segments in addition to emphasizing cooperation with industry peers.

1. Risk management – Focus on high-priority suppliers and manage suppliers on a level-by-level basis to incorporate sustainability risk management into the end-to-end procurement process and supplier lifecycle. Direct continuous improvement efforts amongst suppliers during business interactions, effectively monitor and control risks, and demonstrate industry-leading practices.

2. Efficiency management – Go beyond compliance and customer requirements. Analyze root causes of suppliers' sustainability issues, explore high-value opportunities, enhance the capabilities of suppliers, improve procurement efficiency, optimize business processes, reduce business costs, and strengthen competitiveness.

3. Business innovation – Incorporate forward thinking while cooperating closely with partners. Explore business innovation opportunities to promote sustainability, develop new products, expand into new markets, and work out new business models to fully incorporate sustainability into our business strategy and brand.

4. Industry collaboration – Pay attention to industry challenges and opportunities; organize cross-industry dialogue and cooperation activities through industry organizations; participate in formulating industry rules; set industry benchmarks and lead sustainable development trends; and participate in maintaining the overall strength of the business ecosystem.

As Chairman of Huawei's Supplier Sustainable Development Committee, the Chief Procurement Officer regularly reviews the sustainability strategies, principles, standards, processes, plans, and performance of our suppliers to ensure that sustainability is incorporated into our procurement activities, processes, and daily tasks. According to Huawei's regulations, our procurement departments are responsible for supplier sustainability. In addition, the sustainability performance of our suppliers is incorporated into the annual goals of our procurement departments and the individual performance targets of procurement staff; all of which are assessed on a routine basis. Our supplier sustainability departments organize efforts to develop and optimize supplier sustainability processes and standards, guide procurement departments to implement these processes and standards, and coordinate efforts globally to manage supplier sustainability. Our supplier sustainability work teams can reach any of our procurement organizations around the globe, ensuring that suppliers comply with sustainability requirements and make continuous improvements.

In 2012, Huawei issued supplier sustainability policies as our guiding principles in this area. We also released a redline management plan, which serves as the basic guideline requirements for supplier sustainability management. By following this plan, we adhere to sustainability practices throughout supplier qualification and selection, routine supplier management, supplier performance appraisal, all the way through to the dissolution of supplier relationship.
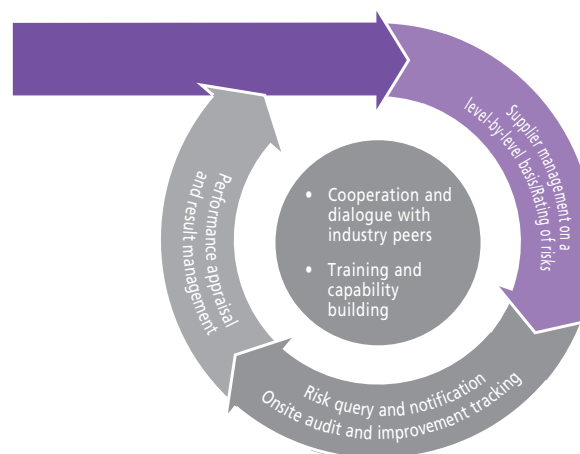
Supplier sustainability process chart

In the past decade, Huawei has adopted a customer-oriented strategy for managing supplier sustainability risks that focused on risks facing suppliers in fulfilling social responsibilities. Recently, Huawei proposed an all-around approach to sustainability which moves the focus from risk management to efficiency management. This new approach will improve our procurement efficiency as well as supplier productivity. Implementing approaches in efficiency management to strengthen sustainability requires us to first control sustainability risks and then analyze root causes, optimize processes, improve management, reduce consumption, enhance efficiency, and lower costs, thereby setting the trend for sustainable development in the industry chain. To successfully achieve this transition, we will enhance our cooperation on innovations with customers and suppliers; recognize opportunities for improvement; identify new products and services to suit requirements; and explore new markets, techniques, and business models conducive to achieving sustainability goals. In doing so, we will be able to judiciously incorporate sustainability requirements into business and corporate strategies; facilitate energy conservation, emission reduction, environmental protection, and innovation; improve industry competitiveness; promote healthy development of the industry; and ultimately achieve multi-win development throughout the business ecosystem.

CSR1.0 Risk Management
Legal compliance and monitoring
Identify and mitigate risks
Minimize business disruptions
Protect brand image and reputation

CSR3.0 Business Innovation
Promote sustainable products and operations
Create new markets through innovation
Optimize and synergize the value chain
Build corporate reputation and a trusted brand

CSR2.0 Efficiency Management
Supplier ownership and capability building
Reduce costs and wastes
Increase labor productivity
Enhance efficiency across the supply chain

Award: Huawei Granted the 2012 CSR Best Practice from United Nations Global Compact China Network

In 2012, United Nations Global Compact China Network granted the "2012 CSR Best Practice" award to Huawei in recognition of our management initiatives in supply chain sustainability. This award was included in the *2012 Global Compact China Network Yearbook*. Huawei incorporates sustainability into its procurement process, transforms its risk management approach into one that focuses on efficiency management, cooperates with customers and suppliers in innovation, and participates in building a multi-win business ecosystem. All of these initiatives and concepts have been widely recognized.

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Supplier Localization

With a global presence, Huawei cooperates with a number of suppliers around the globe, each of which possesses a distinctive technological or cultural strength. Huawei gives preference to suppliers from the local communities in which it operates. In doing so, we not only improve our own competitive edge, but also help local companies integrate into the global industry chain, provide jobs for locals, and promote continuous improvement of the local economy, society, and environment.

Supplier Sustainability Agreement

Huawei requires all suppliers to sign the *Supplier Sustainability Agreement*. Level of compliance with the agreement is one of the factors that Huawei considers when appraising the performance of each supplier. The agreement is based on the Electronic Industry Code of Conduct, Social Accountability 8000 International Standard, ISO26000 Guidance on Social Responsibility, and other applicable laws, regulations, and international standards with which our suppliers must comply. The agreement incorporates social responsibility and environmental protection requirements into decision-making and routine operating activities, thereby preemptively controlling potential social and environmental risks.
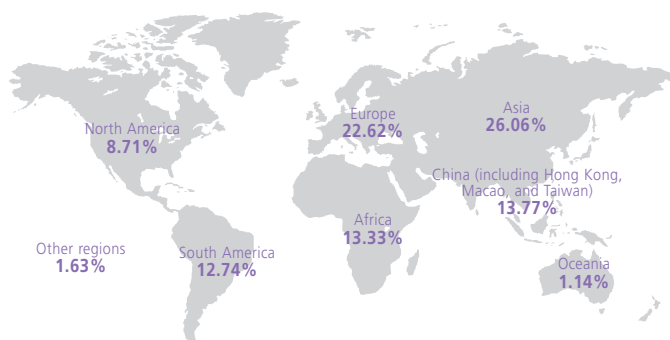
Huawei reserves the right to investigate or audit suppliers at anytime to assess whether they are complying with the requirements specified in the agreement. Huawei also requires suppliers to extend the same requirements to their vendors.

New Supplier Qualification

Huawei qualifies all management systems of candidate suppliers, including their sustainability systems. The qualification process assesses the ability of each supplier to comply with the *Supplier Sustainability Agreement* as well as applicable laws and regulations.

In 2012, Huawei appointed 29 senior sustainability auditors to qualify new suppliers and audit high-risk suppliers. Huawei conducted onsite audits to qualify supplier sustainability systems. During the onsite audits, Huawei interviewed non-managerial employees and managerial representatives, reviewed documents, conducted field checks, and queried third-party information to assess the sustainability management level of each supplier and identify their potential risks and opportunities for improvement. Subsequently, suppliers were classified into four grades (A, B, C,

Proportion of Huawei suppliers/contractors in 2012

North America
8.71%

Europe
22.62%

Asia
26.06%

China (including Hong Kong, Macao, and Taiwan)
13.77%

Africa
13.33%

Other regions
1.63%

South America
12.74%

Oceania
1.14%

and D) based on the audit results. Candidates assigned a D grade, indicating inability to meet sustainability requirements, cannot be endorsed. If sustainability issues are identified during the audits, Huawei requires the supplier to recognize the problems, perform comprehensive checks, take corrective and preventive actions in a timely manner, and track the issues until completely resolved.

To illustrate a case in point, a Shenzhen electronics manufacturer applied to become Huawei's supplier in January 2012. Initial inspections of the candidate revealed that it had met Huawei's entry-level qualification standards for suppliers, so the manufacturer was recommended to undergo our supplier qualification process. During an on-site audit from March 8 to 9, 2012, our supplier qualification experts discovered multiple issues, including blocked safety exits at employee dormitories, insufficient firefighting equipment in workshops, and excessive overtime. As a result, the candidate was assigned a D grade, which disqualified the manufacturer. The manufacturer resolved all of the identified problems within six months by adopting the ISO14001/OHSAS18001 management system to revamp its management regulations and processes and improve employee awareness through delivery of training courses to its managers and employees. In October 2012, the manufacturer passed the second-round audit and became a Huawei qualified supplier.

Year	Number of New Suppliers	Number of Audited Suppliers
2010	18	18
2011	55	55
2012	**48**	**48**

Routine Supplier Management

Huawei adopts a hierarchical method to manage the sustainability efforts of a large number of diversified suppliers across different geographic areas. At the beginning of every year, Huawei conducts prioritizing assessment for all approved suppliers based on the factors listed below before classifying them into high-, medium-, and low-priority suppliers.

1) Country or area where a supplier is based
2) Product or service type
3) Business volume and relationship
4) Performance in sustainability
5) Potential environmental risks
6) Risk management system and capability

Table: Prioritizing results of suppliers

Year	Number of Assessed Suppliers	Number of High-priority Suppliers	Number of Medium-priority Suppliers	Number of Low-priority Suppliers
2010	670	14	75	581
2011	633	19	144	470
2012	**686**	**45**	**56**	**585**

Note: The numbers of medium and high-priority suppliers are likely to increase as Huawei raises its sustainability assessment criteria for suppliers.

When managing supplier sustainability, we pay particular attention to high-priority suppliers and audit these operations on-site during the first half of each year. In the second half of each year, we audit medium-priority suppliers. Prior to on site audits, we require suppliers to organize self-assessment processes to identify their strengths and weaknesses in sustainability management and develop improvement plans aimed at offsetting such vulnerabilities. During on-site audits, we assess supplier self-management capabilities and performance while ascertaining weaknesses in their management systems and capacity, among other potential problems. We then use audit results as the basis for appraising supplier performance in sustainability.

If an audit result shows that a supplier fails to meet our redline requirements for sustainability, we require the supplier to take corrective measures within the required timeframe. Suppliers are required to adopt our Check, Root Cause Analysis, Correct, Prevent, and Evaluate (CRCPE) five-step approach to recognize their shortcomings, identify root causes, take corrective and preventative measures, and incorporate issues found into supplier corrective action requirements (SCARs) until the issues are fully resolved.

Table: Suppliers that underwent Huawei's on-site audits from 2010 to 2012

| Year	Number of High-priority Suppliers	Number of Medium-priority Suppliers
2010	14	28
2011	19	68
2012	**45**	**56**

In 2012, Huawei conducted joint audits with British Telecom, Vodafone, and other customers. We explored differences between Huawei and customers in terms of how we understand international standards in addition to audit methodologies and grading. During joint sustainability audits on component suppliers, electronic manufacturing service suppliers, power supply suppliers, and other typical suppliers, we found that our methodologies and understanding of the process are highly consistent with those of our major customers.

Supplier Performance Management

Huawei manages supplier performance from such dimensions as technology, quality, response, delivery, cost, environmental, and cyber security, with corporate sustainability as a key underlying factor. We regularly appraise the sustainability performance of each supplier based on the results of sustainability audits, the effectiveness of improvement measures, and updates to sustainability efforts. In addition, we synchronize the sustainability performance appraisals with activities targeting quality performance management. We periodically release appraisal results to our internal departments that engage with suppliers and have our procurement managers convey the results to senior executives of our suppliers. We communicate performance-related matters with strategic suppliers every quarter, with preferred suppliers every six months, and with qualified suppliers every year. With open communication, we strive to help suppliers continuously improve.

Seeking Win–Win Development

Huawei determines the extent to which it does business with each supplier according to their sustainability performance. Suppliers with good performance will receive higher procurement quotas and more business opportunities, while suppliers with poor performance will have lower procurement quotas and less business opportunities. Depending on the situation, Huawei instructs unqualified suppliers to correct existing issues within a specified timeframe and may even terminate business relationships with suppliers that have exceptionally poor performance.
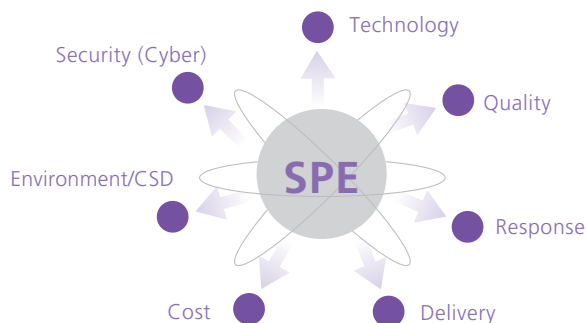
TQRDCES:

T: Technology	C: Cost
Q: Quality	E: Environment/CSD
R: Response	S: Cyber Security
D: Delivery	

Green Procurement

• Supplier Environmental Performance

Since 2008, Huawei has been a part of the "Green Procurement" program initiated by the Shenzhen Environmental Protection Bureau. As part of this program, we use the statistics on enterprise environmental performance released by the governmental department to help manage our suppliers. Since 2011, we have extended the criteria in this program to cover our supplier management efforts throughout China. We joined the "Green Choice" initiative organized by the China Institute of Public & Environmental Affairs (IPE), an NGO. We apply the information in the environmental performance databases of Chinese enterprises released by this organization to our supplier management activities. Every month, the NGO collects environmental performance data about enterprises from the Chinese government to create the China water and air pollution map, the largest online environmental protection database in China. Huawei integrates this database into our supplier qualification and audit tools, through which we can query if a supplier has been cited for any environmental violations, keep track of their environmental performance, and encourage them to better manage themselves.

• Huawei Green Partner Certification

Huawei continued implementing the Huawei Green Partner (HW GP) Certification Program in 2012 in which 68 suppliers became certified. This program covers major green product regulations, directives, criteria, and requirements in such areas as management systems, design, development, materials management, manufacturing, and logistics among others. Through this program, we ensure that our products and components are free of chemical substances restricted by law or prohibited by our customers. Suppliers can initiate requests to apply for the certification.

Logo of the HW GP Certification Program

The HW GP Certification Program inspires suppliers to systematically manage environmental protection and attend to their green initiatives throughout product lifecycles ranging from green design to green manufacturing. By controlling the use of restricted substances from the outset, we contribute to a greener supply chain.

• Supplier Carbon Emission Investigation

Controlling supplier carbon emissions is a new trend in ensuring supply chain sustainability. Through procurement-related efforts, some leading companies are prompting their suppliers to adopt energy-saving and emission-reducing measures to decrease greenhouse gas emissions. Huawei always encourages our suppliers to adopt green guidelines surpassing those stipulated in environmental protection laws and regulations. We audit the energy resources used by our suppliers, promote clean manufacturing approaches, and integrate green requirements into our supplier qualification and audit processes. In 2012, Huawei organized training on carbon emission investigations. We also launched a pilot program to investigate 12 suppliers with typical carbon emissions issues. Through the experience we gain from this program, we intend to step up our investigation efforts to cover more suppliers.

Conflict Minerals

"Conflict minerals" refer to cassiterite, coltan, wolframite, gold, and other minerals that are mined in conditions of armed conflict, notably in the Democratic Republic of the Congo and adjoining

countries. The profits from the sale of these minerals finance ongoing armed conflicts in countries where they are mined. Issues surrounding conflict minerals have attracted wide attention from the electronics and other industries, and have even compelled the US government to issue bans on the purchase or use of conflict minerals. These issues are so complicated that they cannot be addressed without the collective commitment and close cooperation of businesses, governments, and NGOs. Huawei recognizes the weight of such issues and has taken action to help mitigate these instances. Since 2002, Huawei, in tandem with our customers, has investigated matters of conflict minerals in the supply chain.

In 2012, Huawei published the *Statement on Prohibiting the Use of Conflict Minerals*, pledging to never procure or support the use of conflict minerals. Huawei requires all its suppliers to boycott conflict minerals and also asks them to extend this requirement to their vendors. To date, 441 key suppliers have signed commitments not to procure or use conflict minerals.

In conjunction with GeSI, industry organizations, our customers, and suppliers, we seek a sustained solution that resolves the issues surrounding conflict minerals.

Transition from Risk Management to Efficiency Management

Huawei shifted the focus of supplier management from risk-based to efficiency-based management in 2012. Joint research with suppliers reveals that reactive management approaches incur greater costs, while proactive management measures promise higher levels of efficiency. When we proactively manage sustainability by incorporating requirements into business activities and performing comprehensive planning, we can improve processes, increase efficiency, and reduce costs. In looking at case studies and root cause analysis, we found that most sustainability issues are often a result of the deficiencies of procurement practices and/or that of our supplier operations, compounded by a lack of communication with customers and suppliers. Management deficiencies lead to higher costs and lower efficiency.

The first item Huawei focuses on in managing sustainability performance is procurement activities. Huawei incorporates sustainability into our business strategies, processes, daily tasks, and performance appraisals. Specifically, we have carried out the following measures: continuously improving processes and guidelines for supplier sustainability; formulating the *Supplier Sustainability Policy* and the *Supplier Sustainability Agreement*;

optimizing templates for qualifying and auditing suppliers in terms of sustainability; developing sustainability-related redline management plans for material suppliers and engineering service suppliers; defining owners, performers, and vertical management roles in supplier sustainability activities; reaching consensuses through internal training and workshops; and ensuring that sustainability requirements are effectively integrated into supplier selection, qualification, audit, and performance management procedures.

Supplier Training and Capability Building

Supplier sustainability cannot be managed effectively without the commitment and engagement of suppliers. By promoting the CRCPE five-step approach, we guide our suppliers in analyzing the cost and effectiveness of certain approaches and the root causes of sustainability issues, identifying opportunities for improving their management systems and capabilities (including plant management), and actively incorporating sustainability into their business and daily operating activities. Thanks to the CRCPE five-step approach, we help suppliers boost efficiency, reduce consumption, and drive down costs. The CRCPE five-step approach comprises the following five steps:

1) Check: Conduct comprehensive checks, recognize the existing problems to identify and analyze similar issues and risks (particularly deficiencies in awareness and management regulations), and prioritize which problems to handle first.

2) Root cause analysis: Ask "five whys" against the recognized high-priority problems, explore the root causes, and identify management system failures.

3) Correct: Take measurable and traceable corrective actions to effectively eliminate the problems identified at the first step or minimize risks.

4) Prevent: Take preventative actions according to the root causes identified at the second step to raise awareness, and prevent the re-occurrence of similar problems by developing and optimizing management systems and allocating resources.

5) Evaluate: Evaluate the effectiveness of corrective and preventative measures by referring to applicable regulations, standards, and requirements to determine whether the identified problems are eliminated or whether risks are minimized, thus driving continuous improvement.

Check ⟩ Root cause analysis ⟩ Correct ⟩ Prevent ⟩ Evaluate
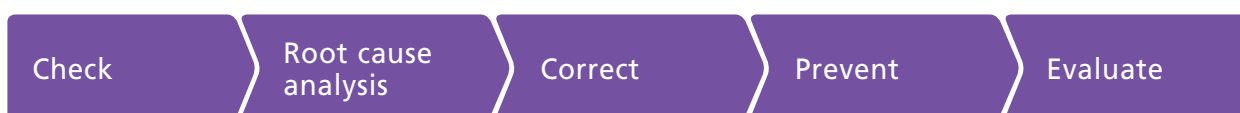
Seeking Win–Win Development

The CRCPE five-step methodology provides suppliers with a model to follow when resolving complicated problems. This model helps suppliers effectively identify their management deficiencies, optimize management processes, reduce costs, increase efficiency, and build up confidence in continuous improvements. Some suppliers remarked: "Reactive CSR leads to more costs, whereas proactive CSR boosts efficiency."

By organizing panel discussions and training in 2012, we enabled 460 participants from suppliers to establish viable management methodologies and systems, increase sustainability capabilities, and become familiar with sustainability laws, regulations, and standards.

Industry Cooperation

Communicating and cooperating with industry players are key factors when it comes to improving supply chain sustainability. Knowing that working together is better than working alone, we align our understanding of sustainability with that of industry-leading peers so as to effect concerted action. In 2012, Huawei hosted the annual GeSI meeting during which we exchanged ideas with leading communications companies about the existing opportunities and challenges in sustainability and reached a consensus on work priorities. Huawei also attended the Joint Audit Cooperation (JAC) Organization meeting to explore hot issues and difficulties in terms of supplier sustainability. We advocate the idea of adopting consistent standards and performing joint audits to promote sustainability in the supply chain. Additionally, we maintain open lines of communication with major customers so we can listen attentively to their opinions and suggestions while sharing our experience and challenges with them.

Case Study: Regional Core Supplier Conference

In 2012, Huawei convened regional core supplier conferences in 16 key countries across ten regions including; China, the Middle East, Southeast Asia, Russia, and Western Europe to elaborate on our requirements and share our experience in sustainability, health, and safety.

Supplier Conference

Achieving supply chain sustainability requires all players to have the same understanding and take concerted action. Holding discussions and sharing information allows players to reach agreements and create synergy. Every year, Huawei convenes the Global Supplier Sustainability Conference and regional supplier conferences. At the events, our executives convey Huawei's sustainability strategies, requirements, and plans. We also invite industry experts and NGO members to introduce industry trends and business opportunities. In addition, representatives from our suppliers are invited to share their success stories.

Case Study: 2012 Huawei Global Supplier Sustainability Conference

On October 18, 2012, Huawei hosted the 2012 Global Supplier Sustainability Conference, which attracted 360 attendees, including international sustainability experts, NGO members, and representatives from 170 suppliers and five carrier customers (British Telecom, Deutsche Telekom, France Telecom, Vodafone, and China Mobile). Mr. Xu Zhijun, Rotating CEO of Huawei, and Mr. Peng Zhiping, President of the Huawei Integrated Business Service Department, addressed the audience and underscored the need to transition from risk management to efficiency management. Two representatives from our suppliers shared their experience that echoed the idea of "reactive management approaches incur greater costs, whereas proactive management measures promise higher efficiency." At the conference, 14 suppliers were recognized for their excellent sustainability practices.

Industry chain growth requires the joint efforts of all players who cooperate with one another to achieve win-win results. By leveraging its strengths, Huawei actively influences the industry chain to drive sustainable development. Holding to the principle of "dedicated employees as the foundation," Huawei provides varied career paths to help diversified employees realize their individual value. Huawei focuses on growing with and contributing to local communities, thereby boosting harmonious and prosperous development. Huawei abides by ethical business practices and operates with integrity and in compliance with applicable laws and regulations. Through close cooperation with stakeholders upstream and downstream, Huawei promotes industry chain sustainability and strives to create a sound business ecosystem that produces win-win results.

Appendix I. GRI Index

Profile Disclosure		Disclosure	Page
STANDARD DISCLOSURES PART I: Profile Disclosures			
1.	**Strategy and Analysis**		
	1.1	Statement from the most senior decision-maker of the organization.	2-5
	1.2	Description of key impacts, risks, and opportunities.	2-5,21

Profile Disclosure		Disclosure	Page
2.	**Organizational Profile**		
	2.1	Name of the organization.	8
	2.2	Primary brands, products, and/or services.	8
	2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	14
	2.4	Location of organization's headquarters.	10
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	8
	2.6	Nature of ownership and legal form.	14
	2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	8
	2.8	Scale of the reporting organization.	8,12,64
	2.9	Significant changes during the reporting period regarding size, structure, or ownership.	No significant changes
	2.10	Awards received in the reporting period.	12-13

3.	**Report Parameters**		
	3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	inside the front cover
	3.2	Date of most recent previous report (if any).	inside the front cover
	3.3	Reporting cycle (annual, biennial, etc.)	inside the front cover
	3.4	Contact point for questions regarding the report or its contents.	inside the front cover
	3.5	Process for defining report content.	inside the front cover
	3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.	inside the front cover
	3.7	State any specific limitations on the scope or boundary of the report (see completeness principle for explanation of scope).	inside the front cover
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	inside the front cover
	3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report. Explain any decisions not to apply, or to substantially diverge from, the GRI Indicator Protocols.	inside the front cover
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g.,mergers/acquisitions, change of base years/periods, nature of business, measurement methods).	Not Applicable

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3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	No significant changes
3.12	Table identifying the location of the Standard Disclosures in the report.	95-101
3.13	Policy and current practice with regard to seeking external assurance for the report.	106-107

4.	**Governance, Commitments, and Engagement**	
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	14
4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	2012 Huawei Annual report
4.3	For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members.	2012 Huawei Annual report
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	2012 Huawei Annual report
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	2012 Huawei Annual report
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	14
4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity.	2012 Huawei Annual report
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	9
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	14,20
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	Sustainability has been incorporated into Huawei's business operations
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	21
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	23
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: * Has positions in governance bodies; * Participates in projects or committees; * Provides substantive funding beyond routine membership dues; or * Views membership as strategic.	23
4.14	List of stakeholder groups engaged by the organization.	15-17
4.15	Basis for identification and selection of stakeholders with whom to engage.	15
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	15-17
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	18

G3.1 DMAs	Disclosure	Page
STANDARD DISCLOSURES PART II: Disclosures on Management Approach (DMAs)		
DMA EC	Disclosure on Management Approach EC	19-22
DMA EN	Disclosure on Management Approach EN	19-22
DMA LA	Disclosure on Management Approach LA	19-22
DMA HR	Disclosure on Management Approach HR	19-22
DMA SO	Disclosure on Management Approach SO	19-22
DMA PR	Disclosure on Management Approach PR	19-22

Indicator	Disclosure	Page
STANDARD DISCLOSURES PART III: Performance Indicators		
Economic		
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	12
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	53-59
EC3	Coverage of the organization's defined benefit plan obligations.	69
EC4	Significant financial assistance received from government.	Not Reported
EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	69
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	88-95
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	65
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	74-80
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	74-80

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Indicator	Disclosure	Page
	Environmental	
EN1	Materials used by weight or volume.	Not Reported
EN2	Percentage of materials used that are recycled input materials.	Not Reported
EN3	Direct energy consumption by primary energy source.	56
EN4	Indirect energy consumption by primary source.	56
EN5	Energy saved due to conservation and efficiency improvements.	56-59
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	46-49
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	56-59
EN8	Total water withdrawal by source.	60
EN9	Water sources significantly affected by withdrawal of water.	60
EN10	Percentage and total volume of water recycled and reused.	60
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	48
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	48
EN13	Habitats protected or restored.	Not Reported
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	48
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	Not Reported
EN16	Total direct and indirect greenhouse gas emissions by weight.	53
EN17	Other relevant indirect greenhouse gas emissions by weight.	53
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	53-59
EN19	Emissions of ozone-depleting substances by weight.	53
EN20	NOx, SOx, and other significant air emissions by type and weight.	53
EN21	Total water discharge by quality and destination.	61
EN22	Total weight of waste by type and disposal method.	61
EN23	Total number and volume of significant spills.	No significant spills
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	61
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	Not Reported
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	46-52
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	52

EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	No fines and non-monetary sanctions
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	50-51
EN30	Total environmental protection expenditures and investments by type.	Not Reported

Social: Labor Practices and Decent Work		
LA1	Total workforce by employment type, employment contract, and region, broken down by gender.	64-65
LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	64
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	69
LA4	Percentage of employees covered by collective bargaining agreements.	Not Reported
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	Not Reported
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	Not Reported
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender.	70
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	69,72
LA9	Health and safety topics covered in formal agreements with trade unions.	70
LA10	Average hours of training per year per employee by gender, and by employee category.	66-67
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	66-67
LA12	Percentage of employees receiving regular performance and career development reviews, by gender.	66
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	64-66
LA14	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	69
LA15	Return to work and retention rates after parental leave, by gender.	66

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	Social: Human Rights	
HR1	Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.	Not Reported
HR2	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken.	90-93
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	66
HR4	Total number of incidents of discrimination and actions taken.	70
HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.	Not Reported
HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	82
HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	70
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	72
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.	No related incidents
HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.	Not Reported
HR11	Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms.	Not Reported

	Social: Society	
SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	76-80
SO2	Percentage and total number of business units analyzed for risks related to corruption.	82
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	82
SO4	Actions taken in response to incidents of corruption.	Not Reported
SO5	Public policy positions and participation in public policy development and lobbying.	81-82
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	No related contributions
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	Not Reported
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	No related fines
SO9	Operations with significant potential or actual negative impacts on local communities.	Not Reported
SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	Not Reported

Social: Product Responsibility		
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	49,83-87
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	Not Reported
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	Not Reported
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	No incidents of non-compliance
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	86-87
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	82
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	No incidents of non-compliance
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	87
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	No fines

Appendix II. Terms and Abbreviations

Abbreviation	Full Name
3D	Three-dimensional
3G	Third Generation Mobile Telephony
3GPP	Third Generation Partnership Project
AA1000	AccountAbility 1000
A2LA	American Association for Laboratory Accreditation
ADSL	Asymmetric Digital Subscriber Line
ATIS	The Alliance for Telecommunications Industry Solutions
BSS	Business Support System
CAPEX	Communication Automatic Processing Equipment
CCSA	China Communications Standards Association
CCTV	Closed Circuit Television
CDMA	Code Division Multiple Access
CDN	Content Delivery Network
CEO	Chief Executive Officer
CERN	European Organization for Nuclear Research
CSR	Corporate Social Responsibility
CSD	Corporate Sustainable Development
CAGR	Compounded Annual Growth Rate
CNAS	China National Accreditation Service for Conformity Assessment
CNNIC	China Internet Network Information Center
CRM	Customer Relationship Management

DDoS	Distributed Deny of Service
DSL	Digital Subscriber Line
EHS	Environment, Health and Safety
EICC	Electronic Industry Citizenship Coalition
ETSI	European Telecommunications Standards Institute
FTTx	Fiber To The x (e.g., x= [H, P, C, N], H=home)
FCC	Federal Communications Commission
GDP	Gross domestic product
GeSI	Global e-Sustainability Initiative
GIIC	Global Information Infrastructure Committee
GSM	Global System for Mobile Communications
GRI	Global Reporting Initiative
IDC	Internet Data Center
IT	Information Technology
ITU-T	International Telecommunication Union Telecommunication Standardization Sector
ICT	Information and Communications Technology
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IMS	IP Multimedia Subsystem
IETF	Internet Engineering Task Force
IP	Internet Protocol
IPTV	Internet Protocol Television

Appendix II. Terms and Abbreviations

ISO	International Standardization Organizations
ISO26000	Guidance on Social Responsibility
ITU	International Telecommunication Union
ICNIRP	International Commission on Non-Ionizing Radiation Protection
LCA	Lifecycle Assessment
LTE	Long Term Evolution
M2M	Machine to Machine
NGBSS	Next Generation Business Support System
NGN	Next Generation Network
NGO	Non-government organization
NEBS	Network Equipment-Building System
NSPCC	National Society for the Prevention of Cruelty to Children
OHSAS	Occupational Health and Safety Assessment Series
OPEX	Operating Expense
OSS	Operation support system
OTN	Optical Transport Network
OMA	Open Mobile Alliance
PC	Personal Computer
PCT	Patent Cooperation Treaty
P2P	Peer-to-Peer
PVR	Personal Video Recorder
SA8000	Social Accountability 8000

SDP	Service Delivery Platform
SCAR	Supplier Corrective Action Request
SAR	Specific Absorption Rate
SDN	Self-Defending Network
TCB	Telecommunication Certification Body
TD-SCDMA	Time Division-Synchronous Code Division Multiple Access
USB	Universal Serial Bus
UDS	Universal Data System
UNGC	United Nations Global Compact
UMTS	Universal Mobile Telecommunications System
VoIP	Voice over Internet Protocol
VOD	Video on Demand
WEEE	Waste Electrical and Electronic Equipment
WCDMA	Wideband Code Division Multiple Access
Wi-Fi	Wireless Fidelity
WiMAX	Worldwide Interoperability for Microwave Access
WDM	Wavelength Division Multiplexing
WHO	World Health Organization

![TÜVRheinland® Precisely Right.]

Independent Assurance Statement

Introduction:

TÜV Rheinland (Guangdong) Ltd., member of TÜV Rheinland Group, Germany (TÜV , We) has been entrusted by the management of Huawei Investment & Holding Co., Ltd. (HUAWEI, the Company) to conduct independent assurance of HUAWEI Sustainability Report 2012 (the Report). All contractual contents for this assurance engagement rest entirely within the responsibility of HUAWEI. Our task was to give a fair and adequate judgment on the HUAWEI Report 2012.

The intended users of this assurance statement are stakeholders having relevance to the HUAWEI overall Sustainability Performance and impacts of its business activities during 2012 (January 2012 ~ December 2012). TÜV Rheinland is a global service provider of CSR & Sustainability Services in over 61 countries, having qualified professionals in the field of Corporate Sustainability Assurance, Environment, Social and Stakeholder Engagement. We have maintained complete impartiality and independence during the assurance engagement and were not involved in the preparation of report contents.

Assurance Standard:

The Independent Assurance was carried out in accordance with AccountAbility, U.K Standard AA 1000 AS (2008) and related standards AA 1000 APS(2008), AA 1000 SES 2011 (Final exposure draft), Principles of Inclusivity, Materiality & Responsiveness, Global Reporting Initiative (GRI) Reporting guidelines Version 3.1(G3.1) and TÜV STAR (Sustainability-Trustworthy-Accountability-Responsiveness) assessment protocol.

Scope & Type of Assurance:

Our Assurance engagement covers the following:

- HUAWEI Corporate Sustainability performance as described in the report 2012 in accordance with GRI reporting guidelines and performance indicators from Economic, Environment & Social category (GRI application Level "B"), also defined in Reporting boundaries.
- Evaluation of disclosed information in the report as per the Assurance Standards.
- Type-1,Moderate as per AA 1000 AS (2008)

Limitation: The assurance engagement was carried out at HUAWEI Headquarter at Shenzhen and site visits to major manufacturing unit located at DongGuan within P. R. China. The consultations with external stakeholder were not carried out. We have not observed any significant situations to limit our assurance activity. The verification is carried out based on the data and information provided by HUAWEI, assuming they are complete and true. We did not verify the reported financial data as same is verified by another third party.

Assurance Methodology:

TÜV has challenged the report contents and assess the process undertaken by HUAWEI from source to aggregate in disclosure of information/data related to Sustainability performance. Our judgment is based on the objective review of reported information as per criteria defined under Assurance standards.

Analytical methods and the performance of interviews as well as verification of data, done as random sampling, to verify and validate the correctness of reported data and contents in light of contractual agreement and the factual HUAWEI Sustainable Development strategy as mentioned in the report. Our work included consultation with over 60 HUAWEI representatives including senior management and relevant employees. The approach deemed to be appropriate for the purpose of assurance of the report since all data therein could be verified through original proofs, verified database entries.

The Assurance was performed by our multidisciplinary team of experienced professionals in the field of Corporate Sustainability, Environment, Social and Stakeholder Engagement. We are of the opinion that our work offers a sufficient and substantiated basis to enable us to come to a conclusion mentioned below and based on the content of our contract.

Positive Observation:

We would like to mention some of the positive aspects observed during HUAWEI assurance engagement as below:

- HUAWEI has further improved and aligned its CSR strategy to Corporate Sustainable Development strategy and approach at the highest management level and established formal sustainability function by designating Chief Sustainability officer.

Opportunity for Improvement:

During assurance engagement, we found further opportunity for improvements reported back to HUAWEI management as below. However, these do not affect our conclusion on the report.

- To enhance further Corporate Sustainable Development (CSD) related process implementation and on-going compliance checks including entire value chain covering overseas HUAWEI operations.
- To develop the strategy for improved stakeholder participation & communication both internal & external, leading to Innovation, Learning and Sustainability Performance improvement.

Adherence to AA 1000 principles:

Inclusivity: HUAWEI has identified, prioritize and engaged with its internal and external stakeholders through formal and informal mechanism like supplier, customer survey by third party, employees weekly meeting, Employees blogs etc. as a response to sustainable development issue.

Materiality: HUAWEI has identified the material issues related to sustainable development viz. economic, environment & social performance and provide balance information in the report. The Corporate Sustainable Development strategy is align to address identified material issues.

Responsiveness: HUAWEI has responded to its stakeholders against identified material issues critical to sustainable development through disclosure made in report 2012, Corporate Sustainable Development strategy, Policies, implementation systems and processes, allocation of resources to stakeholder engagement and communication.

Conclusion:

In conclusion, we can mention that no instances or information came to our attention that would be to the contrary of the statement made below:

- HUAWEI Sustainability Report 2012 meets the requirement of Type-1, Moderate Assurance according to AA1000AS(2008) and GRI application level "**B+**"
- The Report includes statements and claims that reflects HUAWEI achievements and challenges supported by documentary evidences and internal records
- The performance data we found in the report are collected, stored and analyzed in a systematic and professional manner and were plausible.
- TÜV Rheinland shall not bear any liability or responsibility to a third party for perception and decision about HUAWEI based on this Assurance Statement.

For TÜV Rheinland Group

AA1000
Licensed Assurance Provider
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Ganga C. SHARMA

Lead Verifier

Andreas Münch

General Manager
Certification and Accreditation

Guangzhou, 10th April 2013

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