CSR Initiatives Through Business

(KDDI Products and Services)

The business operations of KDDI affect in a significant way not only service users but also society in general. As a provider of telecommunications business needed worldwide to connect countries and regions, KDDI recognizes all people throughout the world as our stakeholders. In addition to providing telecommunications services and devices that are safe, secure, and comfortable, we also consider it important to politely explain how best to use them.

Management and Improvement of Network Quality

Policy **KDDI Group**

KDDI's Approach (Management and Improvement of Network Quality)
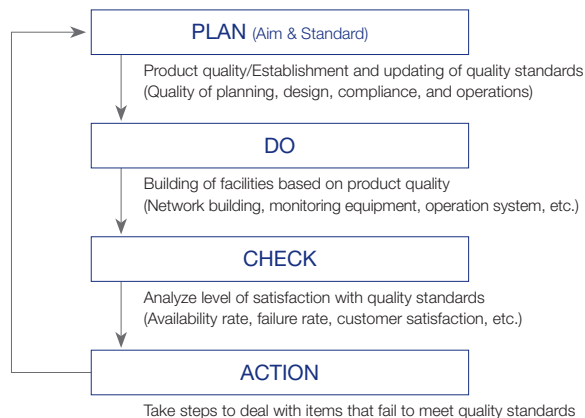
The mission of a telecommunications carrier is to provide a communications environment where customers can use mobile phones and smartphones easily anytime anywhere. KDDI will provide safe and secure communication services by engaging sincerely in every single operation from quality management and improvement of communication infrastructure, such as mobile phone base stations and switching equipment for fixed-line phones, to building next-generation networks.

System **KDDI**

Network Service Quality Management System

KDDI owns an array of telecommunications facilities including optical

PLAN (Aim & Standard)
Product quality/Establishment and updating of quality standards
(Quality of planning, design, compliance, and operations)

DO
Building of facilities based on product quality
(Network building, monitoring equipment, operation system, etc.)

CHECK
Analyze level of satisfaction with quality standards
(Availability rate, failure rate, customer satisfaction, etc.)

ACTION
Take steps to deal with items that fail to meet quality standards

cables and mobile phone base stations, which it maintains and operates via technical centers situated throughout Japan.

The operations centers conduct centralized monitoring of telecommunications conditions nationwide 24 hours a day, 365 days a year. In the event of an outage, these centers control communications as appropriate, communicating with maintenance departments throughout Japan. With regard to communications service quality, we configure, analyze, and improve our facility operating system in line with the stringent standards that we have set for ourselves. In this manner, we strive to provide reliable communications services of consistently high quality.

■ **Network Service Enhancement Project**
KDDI is promoting a "Network Service Enhancement Project" with the aim of identifying and speedily rectifying issues, based on customer feedback. Through this project, we aim to solve problems promptly by using cross-departmental systems including sales, operations, products, technology and equipment.

System **KDDI**

Frequency and Duration of Network Interruption

In the event that network failure or maintenance causes problems in communication lines that inconvenience our customers, KDDI will inform customers on the "Failure and maintenance information" page of our website.

Link Website	Failure and maintenance information (for personal customers) (Japanese)
Link Website	Failure and maintenance information (for corporate customers) (Japanese)

Policy **KDDI**

Expansion of Service Areas (Base Station Facilities)

The mission of KDDI is to provide a stable call and data transmission environment 24 hours a day, 365 days a year. The population coverage ratio of au 4G LTE (800MHz platinum band) exceeds 99%. Nevertheless, we continue to upgrade base stations and implement various measures with the aim of improving network connection even in places where radio wave connection is considered to be difficult, such as busy downtown areas, subways and remote underpopulated areas.

System **KDDI**

Expansion of 4G LTE Areas

To further improve communication quality, KDDI and Okinawa Cellular Telephone Company adopted 4G LTE. Currently, the population coverage ratio of au 4G LTE (800MHz platinum band) (maximum downlink speed of 75 Mbps) exceeds 99%, and customers can use our services easily even in remote islands and mountainous areas. Furthermore, the number of base stations that support a maximum downlink speed of 150 Mbps currently stands at over 30,000, and the population coverage ratio has reached about 90% as of March 2017.

System **KDDI**

Building Mobile Phone Base Stations and Neighborhood Care

With the aim to provide a reliable communications environment to

Management and Improvement of Network Quality

au mobile phone users, KDDI sets up mobile phone base stations in all parts of Japan in order to support new services and improve service area quality. When building a new base station, we abide by the Radio Act, Building Standards Act, and other relevant laws and regulations as well as municipal ordinances and guidelines in order to implement the design and construction.

Furthermore, in cases where the construction is expected to cause a nuisance or inconvenience to the neighborhood (for example, due to the traffic of construction vehicles and noise from construction) or if we received inquiries regarding a mobile phone base station, KDDI provides general information about the base station and explanation of the construction work so that we can earn the understanding and cooperation of the neighborhood.

System **KDDI**

Auditing of Base Station Equipment Production Plants

Because failures in base station equipment can lead to communication difficulties over a whole area, we conduct thorough quality management of equipment used in KDDI base stations, and perform audits at plants which produce the equipment.

Audits consist of strict checks of production processes and the production environment. If there are problems, we communicate them to the plant and take painstaking preventative action against breakdown of equipment.

<Specific Case Examples of Auditing>

・Ensuring that the 5S measures (Sorting, Setting in Order, Shining, Standardizing, and Sustaining Discipline.) are implemented properly
・Ensuring that the specified values are maintained within electrostatic protection areas

・Ensuring that the appropriate temperature and humidity are maintained within parts storage rooms
・Ensuring that the details of assembly procedures and visual inspections are clear, and that they are performed properly

Policy and System **KDDI**

Safety of Electrical Waves

■ KDDI's Approach (policy)

In regard to radio wave safety standards related to KDDI mobile phones and KDDI mobile phone base stations in Japan, KDDI complies with the provisions of laws and regulations regarding radio waves and operates at an electromagnetic wave level below the Radio Radiation Protection Guidelines.

■ System

The Ministry of Internal Affairs and Communications created the "Radio Radiation Protection Guidelines" to enable the safe use of electromagnetic fields, and regulations have been introduced in accordance with these guidelines. The Radio Radiation Protection Guidelines are equivalent to international guidelines advocated by the World Health Organization (WHO) and were created to keep electromagnetic radiation within a range ensuring an adequate safety ratio, in accordance with the results of international research. Experts from WHO and other international institutions are in consensus that safety will be ensured if these guidelines are met.

We take great care to ensure that the electromagnetic radiation from our mobile phone base stations poses no threat to safety. In order to ensure this, we design, build, maintain and periodically inspect our mobile phone base stations in strict compliance with the relevant laws and regulations, including the Radio Radiation

Protection Guidelines stipulated in the Radio Law and the Building Standards Law, as well as local government ordinances. We also explain to residents in local communities that the radio waves transmitted from our mobile phone base stations comply with the standard values of radio radiation protection stipulated in the Radio Radiation Protection Guidelines.

In addition, we provide mobile phone terminals that comply with the permissible values for radio wave strength and radio wave absorption by the human body stipulated in laws and regulations relating to radio waves, and disclose that information on our website.

Link Website About the absorption rates of au phones (SAR) (Japanese)

■ About Research to Ensure the Safety of Radio Waves

In November 2002, KDDI began conducting joint experiments with NTT DOCOMO Inc. and SoftBank Corp., using cells of human origin to evaluate the impact of mobile phone radio waves on living organisms. Some results of the experiments were issued in an interim report in 2005, and the final report issued in 2007 concluded that radio waves have no confirmed effect on living organisms at the cellular level or gene level. This research serves as an example of scientific evidence that refutes claims that radio waves have a cancer-causing effect on cell structure and function. It also reaffirms the safety of radio waves emitted from mobile phone base stations.

KDDI is also committed to providing accurate information to all. We will continue to actively collaborate with relevant organizations on research and testing relating to the impact of electromagnetic radiation from mobile phones on the human body and on medical equipment. We also continue striving to stay abreast of trends in research into the safety of electromagnetic waves, both domestic and abroad.

In addition, KDDI will continue providing information regarding

Management and Improvement of Network Quality

the safety of radio waves emitted by mobile phone terminals via the website and other sources. When constructing mobile phone base stations, KDDI strives to provide adequate explanations in response to inquiries from local residents regarding the safety of radio waves, in an effort to ensure their full understanding and cooperation.

■ **Organizations to which KDDI Belongs or Is Giving Its Cooperation**

Affiliation	The Association of Radio Industries and Businesses
Affiliation	The National Institute of Information and Communications Technology (NICT)
Research cooperation	mobi-kids Japan (study that investigates the effects of mobile phones on health)
	Link Website mobi-kids

Activity   **KDDI**

Providing a Convenient Usage Environment

As part of detailed quality improvement efforts for each of our customers, KDDI offers "Signal Support 24" an after-sales support service concerning radio wave problems, for all customers using au mobile phones. In this service, KDDI staff visit the homes of customers who have inquired about signal quality and examine the reception condition for au mobile phones. KDDI contacts the customer to set up an appointment within 24 hours of their inquiry. KDDI then implements service area improvements using au Femtocells or au repeaters.

We accept inquiries about signal quality not only in homes, but also outdoors and in offices and restaurants. The number of proposals KDDI made for measures to improve signal quality in 2016 was about 40,000 cases. We will continue to strive to improve service

area quality as well as deliver a reliable communication environment.

Link Website Signal Support 24 (Japanese)

Policy   **KDDI Group**

Approach to Next-Generation High-Speed Communication

The mobile network that supports communication on smartphones and mobile phones has evolved from the first generation (1G) to the fourth generation (4G) together with changes in the times and lifestyle. KDDI is engaged in research and development of next-generation mobile communication systems in order to provide communication services with greater stability and higher speed than currently to customers, and to promote dramatic change in ICT network infrastructure.

Activity and Results   **KDDI Group**

Advancing Research on 5G

With the evolution of devices and the proliferation of IoT, mobile networks are required to perform at much higher levels than expected so far. KDDI is conducting tests on the 5G next-generation mobile communication system (5G) that allows a massive number of high speed and high capacity connections to be made at low latency with the goal of launching 5G services around 2020. Research is being conducted throughout the world to study the potential for utilization of high frequency bands including 28GHz to achieve high speed and high capacity communication under 5G.

In May 2017, for the first time in Japan, KDDI and Japan

Broadcasting Corporation conducted tests on real time transmission of 8K video from moving vehicles using 5G technology.

Furthermore, in the same month, KDDI and Secom Co., Ltd. conducted tests of an advanced security system using 5G in the age of IoT, and we were the first in Japan to succeed in transmitting videos from multiple 5G devices using multi-user MIMO*.

* This is a technology that allows multiple users to transmit and receive large amounts of high-speed data simultaneously by using several antennas from base stations.

■ **Other Initiatives Related to Advancing Research on 5G**

Link Website About promotion of the 5G testing project in the Technology Testing Office of the Ministry of Internal Affairs and Communications (Japanese)

Link Website KDDI, OBAYASHI Corporation and NEC conducting tests on remote operation of construction machines using 5G (Japanese)

Activity and Results   **KDDI**

Initiatives in Remote and Underpopulated Areas

KDDI is engaged in initiatives that aim to provide a constantly available smartphone and mobile phone connection in remote and underpopulated areas as well. The population coverage of KDDI's 4G LTE 800MHz platinum band has reached 99%. In 2017, we are working on not only population coverage, but also further expansion by implementing measures in tourist areas that see an increase in customers according to the season. As an example of our initiatives in remote areas, one of KDDI's efforts to support a safe and comfortable mountain climbing experience on Mt. Fuji is to provide coverage at the peak of Mt. Fuji during the climbing season, which KDDI has been

Management and Improvement of Network Quality

doing every year since 2009. In addition, 4G LTE communication can be used at the starting point of the mountain trails and along the trails throughout the year.

Activity and Results — KDDI

Overseas Initiatives

KDDI is striving to provide high quality and highly reliable services in various countries based on a global network linking all parts of the world and a data center "TELEHOUSE" among other things. In addition, to allow smartphone and mobile phone subscribers in Japan to use KDDI services safely and comfortably even when they are overseas, we expanded coverage of the "au World Service" which lets customers use their au mobile phones overseas by making use of partnerships with overseas telecommunications carriers that we have cultivated in the course of providing international telephone services for more than 60 years. In July 2016, we started the "World Data Flat" service which allows customers to use data communication overseas in the same way as when they are in Japan at a flat rate for 24 hours.

■ Maintenance and Operation of Global Network

KDDI connects communications providers around the world to their networks. In cooperation with these companies, we maintain and operate a global network linking all parts of the world. As well as offering high quality international communication services using highly reliable optical fiber submarine cables, KDDI aims to offer services using new technologies centered on its IP services.

Submarine cables provide 99% of Japan's international traffic*, making them an important component of the social infrastructure. Moving forward, KDDI aims to provide an unprecedented level of reliability in communication services for the Asia-Pacific region,

where demand is expected to continue growing. In addition, through partnerships with companies such as INMARSAT and Intelsat, KDDI offers services using satellite communications, enabling call and data transmissions to anywhere in the world, including ships at sea, airplanes, the South Pole, other remote areas and islands where cables do not reach.

* According to research by KDDI.

Link Website	Complete opening of "TELEHOUSE LONDON Docklands North Two" (Japanese)
Link Website	Starting of "World Data Flat" service which can be used in the same way as in Japan at 980 yen a day (Japanese)
Link Website	INMARSAT service

Responsibility for Products and Services

KDDI's Approach (Responsibility for Products and Services)

KDDI implements total integrated quality control from product design to after-sales service. Together with mobile phone manufacturers, KDDI pays due regard to the impact of products on customer safety, presenting KDDI standards for durability and safety to mobile phone manufacturers, without relying solely on the manufacturer's standards. When products are shipped, they are delivered after checking the safety and durability, software and hardware quality, as well as the labels required under the associated regulations.

In addition, if any defects or quality issues arise after products are released, KDDI makes efforts to quickly identify the causes and take all available measures to improve the quality of both the hardware

Quality control flow diagram

Product design
- Verification based on durability standards
- Verification based on safety standards

Quality check of the product
- Verification of hardware performance
- Verification of software
- Safety verification of battery packs, etc.
- Verification of labels required under the associated regulations

Introduction judgment
- Final verification of safety and performance

Sales

After service

and software through inquiries received on the webpage, telephone, and au retailers such as au shops.

In FY2016, KDDI has expanded the same-day delivery area to include the Kansai region as well as the scope of designated delivery destinations of the Replacement Mobile Phone Delivery Service in order to be capable of delivering the same au mobile phone model (refreshed product) of the same color to customers earlier if any problems occur to customer au mobile phones.

KDDI operates a system whereby, if any serious defects are found, policy is determined by the market response screening committee. This committee is under the chairmanship of the company president and it ensures that prompt action is taken.

> Link
> Website   Delivery service for mobile phone exchange (Japanese)

Education of Safe Use through Products and Services

Smartphones, mobile phones, and the Internet have become irreplaceable aspects of our daily lives. However, with the rising number of cases in which Internet users experience trouble or become victims of crime, particularly among children and senior citizens, it is increasingly important for individuals to have proper Internet usage skills.

KDDI is making efforts to promote awareness by distributing products and services that educate users of important matters to be considered and manners to be practiced while using KDDI products and services so they can be used securely and safely regardless of the user's level of information literacy.

■ "Nagara Smartphone Driving" Accident Prevention Project "Driving BARISTA"

KDDI, in collaboration with Toyota Motor Corporation and Komeda Co.,LTD., introduced the "Nagara Smartphone Driving" (driving while operating a smartphone) accident prevention project using the smartphone app Driving BARISTA in Aichi Prefecture that has the most traffic accident related deaths in Japan.

The project grants drivers with free coffee coupons if they drive a certain distance without "Nagara Smartphone Driving". The driving distance collected accumulated to approximately 2.6 million km within the project's 17 day span. This project allowed drivers to take part in "Nagara Smartphone Driving" prevention while enjoying the app and was featured in various media, helping spread the recognition of "Nagara Smartphone Driving" prevention in Aichi Prefecture as well as other regions of Japan.

■ Initiatives to Promote Safe Use

Measure	Content
Smartphone use while walking caution app	KDDI provides a smartphone use while walking caution app in an effort to prevent accidents caused by walking while looking at the smartphone screen and to improve manners.
Measures against money transfer scams	• Individual subscriptions: KDDI's measures include the enhancement of identity confirmation by restricting the payment methods for usage fees, the prevention of mass fraudulent subscriptions by restricting the number of subscribed lines, and the enhancement of screening by enhancing the sharing between mobile telephone and PHS providers of subscriber information for lines where identity confirmation is not possible • Measures for fixed-line phones: Introduced the Nuisance Call Light-up service
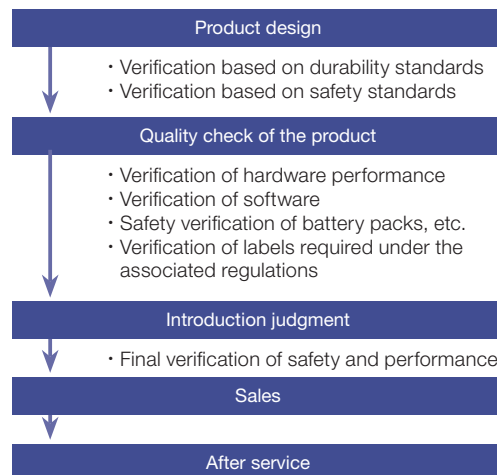
Responsibility for Products and Services

## KDDI's Approach (Accessibility Enhancements)

The concept of "digital inclusion" --creating a society in which everyone can benefit from the advantages of ICT --is gaining attention as ICT comes into use in all areas of people's lives. To enhance its customer experience value, KDDI believes it is important to provide products and services that allow all customers to experience the joy of communication more than ever.

KDDI is committed to providing products and services from a customer perspective to allow even more people the world over --adults, children, the elderly, and those with disabilities --access to the benefits of a variety of products and services without disparity, and to create a society in which ICT is accessible to all.

Initiatives through Products

Product	Target	Characteristics
miraie f	Children	A smartphone for young people, equipped with functions to prevent overuse and exposure to the dangers of the net. Also equipped with a security alarm and a feature that allows parents to confirm the location of their children. Link Website — miraie f Product Information Page
BASIO2	Seniors	This phone focuses on making the phone, email, and camera functions easy to use. Also features a text entry assist function that displays text entry hints on the screen.
Simlple Phone KYF32	Seniors	A feature phone focused on ease of use, with a high-quality audio communication function, simple menu screens, and larger keys. Link Website — Simple Phone KYF32 Product Information Page
Simlple Phone K012	Users with visual disabilities	Features voice-enabled functions that can read out operating instructions and mail, as well as a voice recognition feature for bringing up a contact list or launching apps by voice.

Initiatives through Services

■ Provision of "Age Confirmation Service"

KDDI offers an "Age Confirmation Service" that transmits age information (information to determine whether the customer is over or under the specified age by the content provider) when the customer uses CGM services* including SNS. This is in compliance with the requirement for CGM content providers to ensure age authentication as part of the youth protection policy in relation to using CGM services. We believe that the introduction of this service will be conductive to the improved safety and security of our customers.

* CGM (Consumer Generated Media): Collective term for media in which consumers contribute their own content; examples include social networking services (SNS), blogs, and word-of-mouth sites.

■ Provision of Braille Request Service

KDDI operates a braille request service for visually-impaired customers through which it is possible to receive monthly usage billing information in braille (including amount charged and breakdown).

Responsibility for Products and Services

■ **Other Initiatives KDDI**

Initiatives	Target	Content
Spreading of awareness of filtering services	Children	KDDI offers setting support for filtering services in order to promote safe and secure Internet use for young people
Provision of educational website "Family Guide to Children and Mobile Phones on WEB"	Children Guardians	An educational website where both parent and children can enjoy learning about the important points and rules when using smartphones and mobile phones
Sign language support	Hearing-impaired	KDDI offers support for contract procedures in sign language at outlets managed directly by KDDI (au SHINJUKU, and au NAGOYA). In certain au shops in the Tokyo metropolitan, Kanto, and Chubu areas, KDDI offers remote sign language support using tablet-based video conferencing functions

System **KDDI**

Inexpensive Price Plans

■ **Smile-Heart Discount**

Mobile phones are becoming more and more indispensable in people's daily lives. KDDI offers the "Smile-heart Discount" to make au mobile phones easier to use by providing discounted rates for disabled persons. As of March 2017, the target segment is expanded to include holders of a physical disability certificate, rehabilitation certificate, certification of the psychiatric disordered, medical care certificate for specified diseases, registration certificate for specified diseases, and medical expenses certificate for specified intractable diseases.

■ **Senior Plan (V) Offers Low Rate for Seniors**

For seniors who would like to use a smartphone but are concerned about the higher usage fees, KDDI offers a price plan that makes it comfortable to switch to a smartphone.

"Senior Plan V" is available to customers age 55 or older who purchase the "BASIO" or "BASIO2" smartphone for seniors. This plan is offered at a lower cost than other flat-rate plans by reducing the amount of data that can be used each month.

■ **Initiatives through MVNO**

The Ministry of Internal Affairs and Communications is developing policies to promote MVNO as a means to improve user benefits by further vitalizing the mobile business market. KDDI aims to expand its customer base as well as maximize sales for the entire KDDI Group by having its consolidated subsidiaries including UQ Communications Inc., Jupiter Telecommunications Co., Ltd., and BIGLOBE Inc. provide communication services at low costs to reduce cost related burdens for customers.

Customer Relationship Management

Policy — KDDI

KDDI's Approach (Customer Relationship Management)

KDDI regards all its stakeholders as "customers" and is making efforts to increase customer satisfaction. KDDI has formulated the "KDDI CS Policy" as a guideline for the actions and judgements of employees to achieve TCS (Total Customer Satisfaction), an effort to improve customer satisfaction, as a company-wide activity that involves all our employees including executive managers in order to ensure an enduring relationship of trust with our customers by exerting the utmost effort for the benefit of our customers.

Link Website KDDI CS Policy

System — KDDI

Customer Satisfaction Promotion System

KDDI aims to become a "Life Design Company" capable of providing services other than in communication including payment, sales, energy, and financial services by transforming into a business that offers customer experiences that exceed customer expectations which was a business management policy established in FY2016. The Consumer Experience Promotion Department is making concerted efforts to improve customer experiences from the customer's perspective by discovering all points of contact between customers and KDDI through the customer journey, then identifying and eliminating pain points that are the areas of dissatisfaction to customers in order to provide valuable customer experiences. In order to provide better products and services, efforts are made to

resolve issues in various committees attended by the president and management executives, and initiatives for improved services and quality are posted on the website as the occasion arises.

System — KDDI

Collection of Customer Voices

KDDI believes the basics of customer response involve listening closely to the voices of our customers, promptly translating their views into action, and continuing to refine our services and quality. The views and requests that we receive from our customers are processed through our in-house system that is updated daily and analyzed in order to highlight problems and issues. Problems that require prompt determination are discussed at committees attended by management executives as well as representatives of related divisions in order to solve them through a company-wide effort. In order to share the voices of our customers company-wide, the received opinions are publicized on our intranet excluding that customer's personal information.

Framework for Collection of Customer Voices
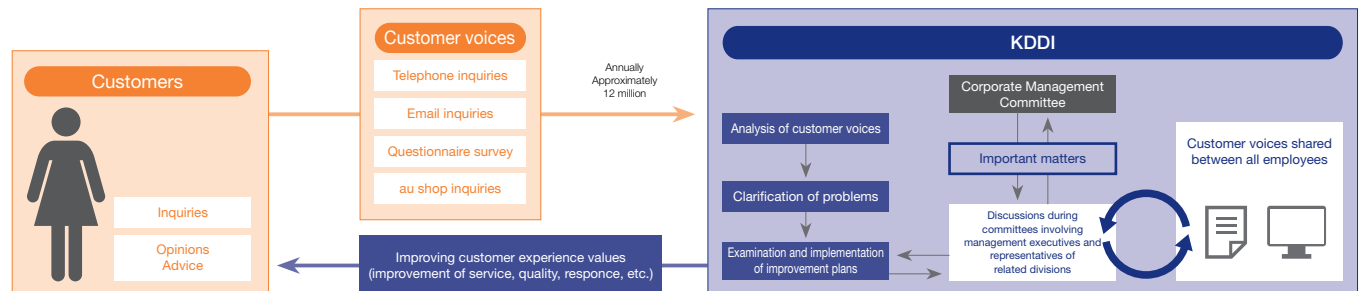
Activity — KDDI

Services and Products That Have Been Improved through Customer Voices

KDDI has released products developed utilizing various customer voices for the 2016 summer models of "au +1 collection", an official au accessory.

Examples of Development Implementing Customer Voices (Excerpt)

Customer voices	Improved items	
Smartphones and tablets slip out of my hand	Fall prevention ring and band, smartphone/tablet case with strap	
I want to maintain my flip mobile phones scratchless and clean	Dedicated hard cover, multi pouch, multi long strap	
I want to be able to operate my phone or check my calls and SNS while the case is closed	Book type case with window (compatible with all smartphone models)	
I want a USB cable that is easier to insert	KDDI-original dual end USB cable	

Customer Relationship Management

System and Activity　　　　　**KDDI**

Initiatives for Customer Satisfaction

■ Efforts to Improve Customer Experience Values at au Shops

KDDI, through its au shops that can be found at approximately 2,500* nationwide, are facilities where customers actually come into contact with au, is making efforts to improve customer experience values.

　　As an example of a pain point from customer's point of view, we have received reports that the waiting time was too long. Following this, KDDI included a benefit (au STAR passport) to "au STAR", a flat-rate free membership program that was released in 2016, which allows customers make reservation at the shop in order to eliminate waiting time. In addition, in the shop facility and design aspect, KDDI is working to create a satisfying environment for customers by offering a shop design that makes them more accessible. KDDI is also working to make it more comfortable for customers to browse through products other than communication services and create a cozy layout environment where they can visit for detailed consultation.

* Numbers of au shops including Okinawa Cellular Telephone Company

■ Strengthening of Multilingual Support at au Shops

KDDI has prepared multilingual questionnaires for visitors to shops following the rise in foreign customers. Based on the results of the questionnaires, we aim to strengthen multilingual support at each branch, branch store, and au shop to improve experiences for foreign customers. With these activities, there has been a rise in customers that have chosen au.

Initiatives	Content
Maintenance of multilingual environment	Performed environment maintenance for multilingual response at over 1,300 au shops across Japan (as of June 2017)
Introduction of interpretation system through video conferencing	Promoting introduction of an interpretation system through video conferencing that supports a total of 12 languages (English, Chinese, Portuguese, Korean, Vietnamese, Tagalog, Spanish, French, Thai, Nepalese, Hindi, Russian)
Translation of each tool	Translated reports, information, catalogs, flyers, etc. for customers in up to 9 languages
Production of multilingual au video guides	Translated au service introductions and videos that explain common inquiries in up to 4 languages (English, Chinese, Portuguese, Vietnamese)

> **Link** Page_43　Sign language support

> **Link** Website　Multilingual correspondence at au shops

■ Improvement of au International Services

KDDI and Okinawa Cellular Telephone Company is making efforts to improve international services so customers can comfortably and conveniently use communication services with peace of mind at their travel destinations.

　　Responding to customer opinions stating they are "worried about billing and setting methods" concerning data transmission overseas, KDDI started providing "World Data Flat" in July 2016. This service allows customers to use data communication for 24 hours in 32 countries and regions around the world available at a fee less than a third of the conventional overseas roaming services "Kaigai Double-Teigaku".

　　Concerning call quality, as a first in the domestic communication business*, VoLTE (Voice over LTE), a high quality voice call service between Japan and America was released in June 2016, enabling clear voice calls even for long distances.

* As of June 6, 2016, researched by KDDI

Activity　　　　　**KDDI**

Results and Initiatives for Customer Satisfaction

Name	Overview of initiatives
Action! (service improvement activities)	KDDI is promoting service improvement activities based on customer voices to enhance services and quality **Link** Website　Action! Making use of customer voices (Japanese)
au CX AWARD	Each year, KDDI holds the customer service contest in locations throughout Japan in an attempt to enhance the customer service skills of au shop staff
au Support Movies	Explains how to operate smartphones and how to use popular apps through video guides **Link** Website　au Support Movies (Japanese)
au Osekkai-bu	Introduces smartphone usage based on various lifestyles **Link** Website　au Osekkai-bu (Japanese)
au Smart Support	KDDI offers a support service for members that provides the best support according to the customer's situation when using smartphones **Link** Website　au Smart Support (Japanese)

Customer Relationship Management

KDDI's Approach (Approach for Corporate Customer Satisfaction)

In an ever-changing market environment, customer needs are becoming more and more diversified and sophisticated. KDDI contributes to our customer's businesses through fine communication in our customer perspectives with the business management policy of transforming KDDI into a business that provides a positive customer experience.

Initiatives for Corporate Customer Satisfaction

KDDI is performing various efforts including employee training to become the business partner chosen by customers and help them solve any problem they may have. Specifically, we are implementing in-company workshops as well as in-company contests, and are conducting several other measures including sharing of good practice that contributes to the main businesses of our customers.

■ KUG: KDDI ENTERPRISE USERS' GROUP

KDDI ENTERPRISE USERS' GROUP (KUG) is an organization operated by corporate members who are users of KDDI's services. In KUG, which KDDI acts and supports as the organizer, member companies from various industries gather for seminars, observation tours, and workshops that are held for the purpose of interchange, study, and friendship. The member gatherings also serve as an opportunity for various activities to reflect the voices of our corporate users concerning improvements to KDDI's services and the

development of new products.

Through exclusive observation tours and seminars, KUG aims to enliven the communication between KDDI and the group members.

FY2016 Activity Results	11
Example of initiatives	・Introduction of efforts concerning disaster response and service quality maintenance through tours of the KDDI Shinjuku Building and KDDI OCEAN LINK ・Organizing seminars to share new issues related to IoT and ICT solutions

Customer Satisfaction Surveys

■ Evaluation for au Services in the Consumer Market

Research name	Evaluation
J.D. Power "2016 Japan Mobile Phone Service Satisfaction Study"	Winner of the Satisfaction Award
J.D. Power "2016 Japan Mobile Data Communications Service Satisfaction Study"	Winner of the Satisfaction Award

■ Evaluation for KDDI Services in the Consumer market

Research name	Evaluation
J.D. Power "2016 Japan Network Service Satisfaction Study" <Mass Market Segment>	Winner of the Satisfaction Award
J.D. Power "2016 Japan Business Mobile Phone Service Satisfaction Study" <Mass and Medium Market Segment>	Winner of the Satisfaction Award
J.D. Power "2016 Japan Business IP Phone & Direct Line Phone Service Satisfaction Study"	Winner of the Satisfaction Award (4 consecutive years)

KDDI's Approach (Providing Online Convenience)

Following the growth of the domestic communication market, it is difficult to assume major growth in the number of customers. To realize continuous growth and improvement in corporate value even under these social conditions, KDDI aims to change into a "Life Design Company" that proposes services following customer lifestyles and provides experiences that exceed customer expectations. KDDI is promoting services other than those in the communication field including billing, sales, energy, and financial services from both offline services at approximately 2,500 au shops nationwide and online services including billing platforms.

Approach to Online Use

KDDI is expanding its online strategies that make billing and procedures more useful and profitable based on au customer foundations and

Customer Relationship Management

billing platforms. KDDI currently holds approximately 48.54 million au mobile phone contracts (as of March 2017) for conventional communication services. Aiming to become a "Life Design Company" from FY2016, KDDI is providing comprehensive products and services other than those in the communication field. Based on these customer foundations and billing platforms, KDDI plans to make use of omni-channeling by strengthening the link between online services including "au Smart Pass" and offline services at actual au shops.

To provide support for services that are becoming more sophisticated, the Customer Support platform on the website has been renewed with higher operability and easier-to-understand explanations. The net addition of FY2016 has increased to 2.63 million au users, with an au contract cancellation rate of 0.83%*.

Moving forward, KDDI will continue working to expand the customer base by offering the advantages of online convenience along with the sense of security of face-to-face customer service at approximately 2,500 au shops nationwide.

* Based on public terminals (feature phones including smartphones and prepaid phones) of personal segments

Policy		KDDI

Lifestyle Offers Using Online Services

KDDI proposes lifestyles that fit each customer for 15.22 million members of "au Smart Pass" (end of March 2017) and 5.7 million customers registered to "au WALLET Market" (as of June 2017), an online shopping service, by providing various au brand products and services in order to expand the "au Economic Zone". Especially important are the "au WALLET Prepaid Card"* and "au WALLET Credit Card". In the past, KDDI pursued efforts to expand sales on

the basis of indicators such as the number of subscribers or the usage bill related to communication services, but from now on, KDDI will pursue efforts to expand value-added sales that are not related to communication services, which use these payment platforms.

As of March 2017, 20.8 million au WALLET Cards have been issued. KDDI aims to expand the total value of "au Economic Zone" transactions to more than 2 trillion by the end of March 2019 through "au WALLET Card", online carrier billing (=au Simple Payment), etc.

* The "au WALLET Prepaid Card" is a payment service that can be used at most shops around the world that accept MasterCard®. (Some shops and services may not accept the card as a payment method.)

System		KDDI

Improvement of the Online Platform

KDDI and Okinawa Cellular Telephone Company renewed the official au website in 2016 and it offers "My au" a new customer support platform, as one of the policies in the aim to change into a "Life Design Company".

With "My au", customers can check information including their mobile phone information, points, and notifications as well as the content of their contract and billing information of all services of the "au Economic Zone".

System		KDDI

Support System through Online Services

KDDI provides an "Anshin Total Support" service for a fee for customers using the "au one net" Internet service provider. This service includes operator support for various Internet problems that is available 365 days a

year from 9AM until 11PM.

Specialist operators on the "Anshin Total Support" service answer many different kinds of questions relating to network connections and settings as well as user guidance via telephone and remote operation. By meeting a wide range of customer needs concerning PC peripheral equipment and software settings as well as KDDI equipment, we are creating a more convenient Internet environment.

| Link Website | Anshin Total Support (Japanese) |

Policy		KDDI Group

Approach to the Use and Application of Personal Data

Personal data can now be used and applied to new services by anonymizing the information following the revision of the Act on the Protection of Personal Information in 2015. KDDI will monitor and maintain regulations within the company based on relevant laws and regulations and appropriately use personal information of our customers following the privacy policy.

Brand Management

KDDI's Approach (Brand Management)

The telecommunications market continues to grow more homogeneous, making it difficult for companies to differentiate themselves from competitors in terms of the functions and performance of products, services and prices. Under such harsh conditions, to ensure that customers continue to choose KDDI in future, it is imperative for us to undertake exhaustive efforts to consider the customer's perspective and continuously pursue activities that boost customer satisfaction. We believe that these efforts help our brand become more established.

KDDI is making a company-wide effort to promote the improvement of customer experience by identifying the establishment of a strong brand as a key issue.

Furthermore, we are striving to raise awareness among our employees so as not to bring any disadvantage to our customers or society due to unauthorized use of trademarks or inappropriate use of logos by third parties.

Brand Management Promotion System

KDDI is making efforts to encourage deeper understanding and practice among our employees in order to strengthen our brand management.

■ Efforts in FY2016
· Group classes
· Distribution of e-learning for all employees
· Employee attitude survey within the company
· Distribution of related information through the company intranet

Responsible Advertising and Marketing

KDDI advertisements are created based on the rules and provisions of the Act against Unjustifiable Premiums and Misleading Representations as well as voluntary standards and guidelines on placement of telecommunication service advertisements, to avoid advertisement placement that may constitute unfair customer enticement.

When creating an advertisement, the departments share thorough and accurate information about the purpose of the advertisement and the details of the product or service. After it is created, the advertisement is inspected by each department before it is submitted to the review department for final approval. As a rule that has been in place since 2013, advertisements cannot be used without passing the final review. In addition, education activities are periodically conducted for all employees to ensure the appropriateness of advertising displays.

Going forward, KDDI will observe related laws and regulations and voluntary industry standard guidelines as well as continue to focus on improving and spreading internal systems, and strive to ensure the optimization of advertisement displays related to telecommunication services.

Furthermore, in FY2016, KDDI did not violate any regulations related to marketing or communication (in the Revised Act against Unjustifiable Premiums and Misleading Representations).

	FY2016 Result
Number of advertisements inspected by the review department	5,550
Results of review	Advertisements that might violate laws and regulations were all rectified
Implementation of measures to ensure spreading of policy within the company	Implementation of e-learning for all employees (Topic: About the Revised Act against Unjustifiable Premiums and Misleading Representations, 81.5% attendance rate)

| Disclosure of CSR Information | Top Message | KDDI Business and Strategies | KDDI's CSR | KDDI Code of Business Conduct | CSR Promotion Framework | Stakeholder Engagement | Four Material CSR Issues | Material Issues - Highlights | CSR Initiatives Through Business | CSR Initiatives Supporting Operations | External Assessment | CSR Data |

Brand Management

Activity KDDI

Improving Brand Value by Maintaining the Popularity of the Santaro TVCM Series and through Sponsorship Agreements

Starting in January 2015, KDDI rolled out the Santaro TVCM series in an effort to spread the brand image of au under the brand slogan of "New Freedom". In FY2017, we continued to run the Santaro series with the aim of further increasing the popularity.

In addition, we signed new sponsorship agreements with sporting events and organizations as one of our initiatives to improve brand value. KDDI hopes that new values can be created together with the sponsored organizations through such support.

HAKUTO	Provision of support using communication technology for HAKUTO - the first and only private-sector lunar exploration team from Japan to participate in the lunar exploration race, Google Lunar XPRIZE.
Japan national soccer team	Signing of an agreement with the Japan Football Association to be a supporting company of the national soccer team.
Sport climbing	Signing of an official sponsor agreement in the sport climbing category with the Japan Mountaineering & Sports Climbing Association. "TEAM au" was formed with 4 sport climbing athletes.

Activity and Results KDDI

External Assessment (Subject: The Santaro TVCM Series)

Name	Evaluation
CM Research Center FY2016 Commercial Popularity Ranking by Company FY2016 Commercial Popularity Ranking by Brand	First place
2016 56th ACC CM FESTIVAL Film Division Category A	The Minister for Internal Affairs and Communications Prize / ACC Grand Prix
Nippon TV Network CM Awards 2016	Nippon TV Network CM grand prize
46th Fuji Sankei Group Advertising Awards Media Mix Division Media Division - TV Public Division	Award of excellence
54th Galaxy Awards CM Division	Award of excellence

Innovation Management

KDDI's Approach (Innovation Management)

Advancements in communication are moving toward a ubiquitous network society enabling a new business and lifestyle not dependent on time or location. To achieve this, KDDI's Research and Development (R&D) is developing the most advanced technology in the world to take on these challenges in future information and communication for contributing to society.

Approach to R&D

In the field of ICT, the speed of technological evolution and globalization continues to accelerate, while trends in technology change at a more dizzying pace than ever.

In this environment, KDDI is making efforts to conduct practical,

advanced, long-term R&D in important technical fields related to network infrastructure, platforms, devices and applications with the aim of providing a positive customer experience with an emphasis on the customer perspective and innovation. In addition to basic research, KDDI pursues R&D with a flexible approach ranging from applied research and development to the creation of practical applications, while monitoring global trends in technology and services, and incorporating open innovation technology.

R&D Fields

| Research	Future design	
Infrastructure	Network architecture	Innovation center
	Next generation access network	
	Connected networks	
Platforms	Data intelligence	
	Security	
Applications	Media ICT	
	Human communication	
Promotion	Research promotion	

Research and Development Promotion System

KDDI has established the KDDI Research, Inc., a separate organization from technology departments within the head office, with the purpose of operating a research and development framework systematically that can respond quickly to technological innovation, and we are conducting a wide range of activities from basic research to applied research.

A variety of processes are required in order to develop research results into practical applications, including the collection of information, development of individual technologies, evaluation, and design. For information collection in particular, KDDI deploys a staff of researchers specializing in each field in each country and region, and constantly gathers and analyzes the latest information from abroad by coordinating with KDDI Group overseas offices and other organizations such as external research institutions.

Furthermore, with respect to the use of open innovation technology, KDDI is proactively engaged in efforts to facilitate cooperation and cocreation with many stakeholders.

Changes in R&D Expenses and Number of R&D Employees*
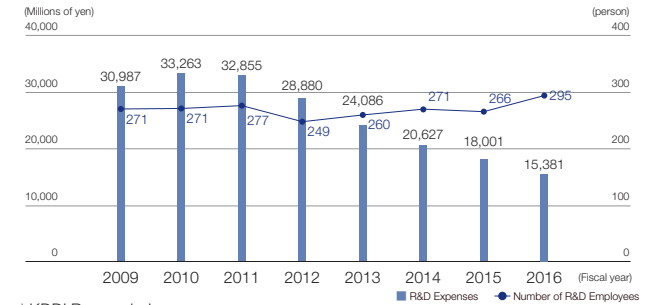
* KDDI Research, Inc.

Promoting Open Innovation

To create products and services that will truly give customers a sense of value in the age of IoT* where everything is connected to the Internet, we need to form partnerships with research institutions, universities and companies both in Japan and abroad. KDDI is promoting open innovation from the perspectives of technological innovation inside and outside the company as well as training and development of human resources.

* Internet of Things

■ KDDI Open Innovation Fund

KDDI Open Innovation Fund is a corporate venture fund operated by KDDI and Global Brain Corporation for investment in promising startups both domestically and internationally. We provide full-scale support for the growth of our partner startups through utilization of our business networks and marketing skills and collaboration with our services including "au Smart Pass".

Innovation Management

We have specialist personnel based in San Francisco, USA, and Seoul, South Korea, where we are looking to invest in startups with the latest technologies or innovative business models.

We will provide wide-ranging support for business development, marketing and localization by companies looking to expand their business in Japan.

> 🖥 Link Website KDDI Open Innovation Fund

■ KDDI ∞ Labo (Mugen Labo)

In 2011, KDDI launched KDDI ∞ Labo, a program designed to support young engineers who are passionate about creating revolutionary Internet services for use around the world. This program provides total support to teams selected from a pool of applicants. This support ranges from service development support from the perspective of telecommunications carriers to business support and promotion when they start up their business. In addition, KDDI provides a variety of other kinds of support such as communication space within its offices and free loan of terminals required for service development work.

Since 2014, we have been working on industry-academic partnerships that aim to commercialize the research techniques of universities, and initiatives that aim to achieve cocreation through the collaboration of established companies from a wide variety of industries (a total of 36 partner companies including KDDI) and startup companies.

> 🖥 Link Website KDDI ∞ Labo (Mugen Labo)

■ Next Generation Human Resource Development for the Support of Open Innovation
<CHIRIMEN Open Hardware>

KDDI is participating in an open source community, CHIRIMEN Open Hardware, with the objective of creating IoT using only Web browser technology.

In CHIRIMEN Open Hardware, we are working with experts and students to achieve the above objective by developing CHIRIMEN, a development environment that includes a board computer and the software that functions on the board computer. In the process of development, we will realize and learn new things, and create the seeds of innovation.

> 🖥 Link Website CHIRIMEN Open Hardware

<"Miraiwo Tsukuru" Project>

The "Miraiwo Tsukuru" Project was launched in May 2015 at the KDDI Research, Inc. with the goal of cultivating human resources who can bring about innovation and foster a challenging climate. To bring together human resources from all parts of the organization, researchers have been putting up their hands to participate in the activities of the project. One of the results of the project is the development of an IoT gadget, Charging Robo, which finds and charges smartphones automatically. The IoT gadget won a special prize at Android Experiments OBJECT (organized by Google).

<au×HAKUTO MOON CHALLENGE>

KDDI and the first private-sector lunar exploration team HAKUTO have signed an official partners agreement, and are taking on the challenge of Google Lunar XPRIZE, a lunar exploration race using robots.

Missions on the lunar surface are conducted using remote control from earth, and telecommunications technology plays an important role in lunar exploration. HAKUTO is looking into applying frequency bands that are used in mobile data communication on earth for communication on the lunar surface. This is the first such attempt in the world, and can be considered a major step in extending civil technology developed on earth to space exploration. KDDI is supporting this attempt of HAKUTO, which will be a first in the world, with our technology.

> 🖥 Link Website KDDI's mission in the HAKUTO Project (Japanese)

Policy and Activity   KDDI Group

Conducting R&D for the Sustainable Development of Society

■ Approach to Product Innovation

As the global market becomes increasingly diversified, it is necessary to develop products and services that meet market needs, and achieve differentiation from competitors so that we continue to be a company of choice for our customers. KDDI is working on changing various products, services and processes, and creating new value based on IoT.

■ Product Innovation Example: IoT Security Technology Using SIM

There are many security issues in IoT such as illegal remote control, identity fraud and data eavesdropping. To use IoT machines more safely, KDDI and the KDDI Research, Inc. focused on the high security tolerance of SIM, and developed encryption key [1] management technology that introduces the high security tolerance of SIM in the communication of IoT machines. Through this technology, it is now possible to maintain remote control by utilizing the characteristics of SIM. The development of encryption key management technology for

Innovation Management

communication of IoT machines using SIM and verification of remote maintenance are the first such attempts in the world [2].

[1] These are values used in encryption so that data cannot be accessed by third parties. Encoding is done using common key encryption and public key encryption.
[2] As of October 20, 2016. Based on KDDI survey.

■ Other Examples of Product Innovation

Initiative	Developing organization	Content
Unique ID generation technology based on individual differences of acceleration sensors [2]	KDDI Research, Inc.	First attempt in the world* to develop technology that generates unique ID based on individual differences of acceleration sensors that are mounted on wearable devices.
KDDI IoT Cloud data market	KDDI	Service that contributes to the discovery of issues and business opportunities, improvement of service quality through comprehensive analysis of IoT operation data of corporate clients and diverse data.
Experiment to verify mango cultivation using IoT	KDDI, Okinawa Cellular Telephone Company, Skydisc, Inc., University of the Ryukyus	Participation in an experiment to monitor the state of mangoes growing in green houses using IoT.

* As of October 12, 2016. According to research by KDDI Research, Inc.

■ Approach to Process Innovation and Initiatives

Process innovation is a development method that responds to a rapidly changing market, and it is gaining attention for fundamentally reforming operating processes that supply products and services. In 2013, KDDI started working on agile development within the company, and we are providing services using agile development such as "KDDI Business ID" and "au Denki App". In October 2016, we established an agile development center with the aim of accelerating development speed throughout the company, and we are increasing the speed and value in the provision of products and services.

■ Other Example of Process Innovation Initiatives

Initiative	Content
Provision of agile development education program	Agile development education program following the Scrum* method which makes it possible to start IoT business quickly in a small way.
KDDI IoT Cloud Creator	Service that makes use of the agile development method to give thorough support from development to construction, and from operation commencement to tasks and duties in IoT business.

* One of the agile development methods advocated by Dr. Jeff Sutherland of Scrum Inc.

■ Approach to Environment Innovation

With the adoption and enactment of SDGs and the Paris Agreement (COP21), there are increasing expectations on the role that companies should play in the realization of a sustainable society. As a global company, KDDI considers it an important responsibility to work on solving environmental issues through the development of products that reduce the environmental impact and the provision of services.

■ Example of Environment Innovation:
Virtual Power Plant Construction and Demonstration Project

KDDI and KYOCERA Corporation's project to manage power supply and demand using home storage batteries and IoT technologies has been selected as a Virtual Power Plant Construction and Demonstration Project of Ministry of Economy, Trade and Industry.

This project aims to build and develop technology for a virtual power plant (VPP), and establish a related business model in response to the fact that the target of the negawatt power exchange market [1] will be extended to general households. The VPP will function like a power station by integrating and controlling energy resources from the storage batteries in homes and renewable energy from solar power generation among several households.

Through the provision of storage batteries for homes and HEMS [2], a VPP will be built with ENERES Co., Ltd., a core partner, to verify the control of charge and discharge power in storage batteries, negawatt transaction volume, incentive effects and the service fees system.

The project aims to achieve load levelling of electric energy, promote further energy saving, and expand the market for renewable energy.

[1] Business of trading incentives according to the amount of energy saved.
[2] Home Energy Management System – a management system for saving energy used in homes.

Innovation Management

■ Other Examples of Environment Innovation

Initiative	Developing organization	Content
KDDI IoT Cloud toilet water-saving management	KDDI	Development of service to monitor water data in individual toilet cubicles using IoT, which leads to water saving of 40～50%* compared to conventional toilets.
Tribrid base stations	KDDI	Development of power control technology that uses accumulator batteries to store commercial power supply, solar power generation, and nighttime power supply, and supplies the stored power efficiently on an hourly basis. **Link** Page_114 Biodiversity Consideration for Building Base Stations
Ecological survey of dolphins in the Ganges	KDDI	Implementation of an ecological survey of endangered river dolphins inhabiting the Ganges river using acoustic technology of underwater robots that was developed to inspect undersea cables. **Link** Page_114 Research on Behavior of Endangered Ganges River Dolphins

* Estimates based on actual data from valve manufacturers.

■ Approach to Social Innovation

As social issues become more complicated and diversified, KDDI is working on initiatives in collaboration with various stakeholders while utilizing KDDI's know-how to contribute to solving social issues through business.

■ Social Innovation Example (1): Smart Fishing Experiment Using Smart Buoys

The KDDI Research, Inc. collaborated with Higashimatsushima Organization for Progress and Economy, Education, Energy (HOPE) to conduct a smart fishing experiment with the aim of ensuring stability and efficiency in set net fishery. In the experiment, smart buoys [1] were installed on the sea surface, and the potential for long-term use of the buoys and the usefulness of the data obtained were evaluated. This is an attempt to create new IoT device related industries through the participation of local companies and by increasing young workers in the fishing industry, a primary industry that is facing problems due to an aging population.

The experiment was conducted as part of an effort to develop smart buoys in the "Smart Fishing Model Project Using Marine Big Data" which is one of the projects under the IoT Project For Daily Living initiated by the Ministry of Internal Affairs and Communications. Going forward, together with the participating members of the smart fishing model promotion consortium [2], KDDI will use the data obtained in this experiment to formulate sailing plans for fishermen, develop forecasts of the relationship among various data, and verify retail models for direct delivery from producing areas among other things.

[1] Designed and developed by HOPE and Ohno Denshi Kaihatsu Co., Ltd.
[2] Smart fishing model promotion consortium: Higashimatsushima Organization for Progress and Economy, Education, Energy (representative executive officers), Higashimatsushima City, Ootomo Suisan, Ohno Denshi Kaihatsu Co., Ltd., Tohoku University, Iwate Prefectural University, Waseda University, KDDI Research, Inc.

■ Social Innovation Example (2): Social Verification of Multi-Language Speech Interpretation System

KDDI and KDDI Research, Inc. have been conducting a social experiment that makes use of a multi-language speech translation system in sightseeing taxis for foreign tourists visiting Tottori Prefecture from November 2015 with the aim of helping taxi drivers to communicate smoothly with foreign tourists. In December 2016, we also started conducting a social experiment targeted at foreign tourists that makes use of a multi-language speech translation system in Tokyo Sightseeing Taxis* in Tokyo. These experiments aim to overcome disparities in social services that arise from language barriers by making it possible for taxi drivers and foreign tourists to communicate, which has been a long-running problem.

* Taxi service that drives around sightseeing spots in Tokyo. Drivers who have the "Certified Tokyo Sightseeing Taxi Driver Qualification" will introduce tourists to the new attractions of Tokyo while driving.

■ Social Innovation Example (3): Technological Support for Tsunami Disaster Training Organized by the Ministry of Land, Infrastructure and Transport

KDDI, KDDI Research, Inc., and the Kyushu Branch Offices of KDDI Matomete Office West Japan Co., Ltd. participated in Tsunami Disaster Training (organizer: Chile International Emergency Response Office, Ministry of Land, Infrastructure and Transport) by providing network infrastructure and technological support.

This training was held in conjunction with Valparaíso City in Chile and Hyuga City in Miyazaki Prefecture, Japan to prepare for tsunami disaster, and make it possible to achieve a fast response in association with "World Tsunami Awareness Day" which was established at the 70th United Nations General Assembly in 2015. To connect the disaster training site (Miyazaki Prefecture) and disaster response headquarters (Fukuoka Prefecture), the 3 KDDI group companies provided technological support, and loaned out infrastructure systems and "VistaFinder Mx"*, a remote operations support system developed by KDDI Research, Inc.

*VistaFinder Mx: A remote operations support system that allows videos taken by smartphones, tablets, and mobile PCs to be transmitted remotely from the field over various types of networks, simply, securely, and in high quality.

Innovation Management

■ Other Examples of Social Innovation

Initiative	Developing organization	Content
KDDI AI Translation	KDDI	Development of an application service that allows translation of English, Chinese and Korean from voice input or text entry.
KDDI TV Interpretation	KDDI	Development of a 3-party interpretation service* on a tablet device that allows an off-site operator to interpret the conversation between a customer service officer and a foreign tourist in a shop.
Project Ikebukuro – a verification experiment targeted at foreign tourists	KDDI, Liquid, Inc.	Commencement of a verification experiment to confirm the identity of foreign tourists when they check into hotels without having to present a passport with fingerprint biometric authentication.

* Available in 12 languages – English, Chinese, Korean, Tagalog, French, Thai, Vietnamese, Portuguese, Spanish, Nepali, Hindi and Russian.

Activity and Result　　　　　　　　**KDDI**

Protecting Intellectual Property

KDDI's commitment to creating and protecting intellectual property and respecting the intellectual property rights of others is defined in one of the basic policies of the KDDI Code of Business Conduct. KDDI has formulated intellectual property handling regulations to ensure the proper management and usage of KDDI's inventions, trademarks, and other industrial property; software and other copyrighted materials; and technologies, expertise, and other rights protected under the Unfair Competition Prevention Act. In addition, KDDI conducts educational activities every year through group training and e-learning classes, to provide employees with a deeper understanding of the importance of intellectual property, as well as the risks of infringement and its prevention.

KDDI plans and develops communication and IoT services and content as well as payment, energy and finance services, and conducts research and development of communication technology, such as LTE and 5G, as well as security technology that provides privacy protection. As a result of these activities, KDDI holds approximately 2,000 patents in Japan and 200 patents overseas, as of the end of June in 2017. In addition, KDDI has established an invention reward system to secure incentives for inventors based on the Patent Act.

Moving forward, KDDI will continue to bolster its efforts on intellectual property assets and strengthen its competitiveness both in Japan and overseas.

Breakdown of KDDI's Patents (as of the end of June 2017)

- Other 6%
- Image processing & security 9%
- Communication technology 55%
- Application 30%
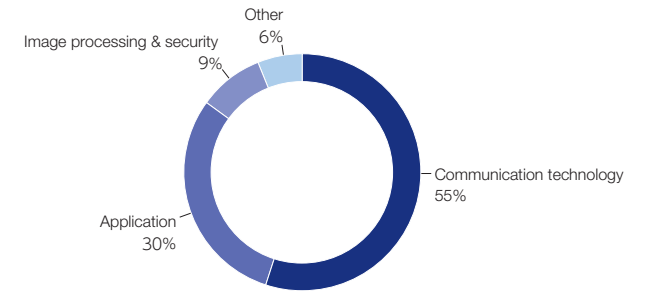
About Efforts in Growing Markets

Policies **KDDI Group**

KDDI's Approach (About Efforts in Growing Markets)

In emerging countries, the proliferation of information and communications services leads to the solving of various social issues. KDDI has set the active deployment of our business around the globe as one of our business strategies. Our goal is to supply emerging countries with the experience, expertise and technology of telecommunications services that KDDI has accumulated in Japan and abroad, and deliver stable communication quality in the hope that our efforts will help to develop the economy in these countries, and improve the quality of life of the people. In addition, the KDDI Foundation is also supporting the establishment of the communication infrastructure in developing countries where we have not deployed our business.

Activity **KDDI**

Business Expansion and CSR Activities in Myanmar

KDDI is working together with Sumitomo Corporation and Myanma Posts & Telecommunications (MPT) in a joint venture aimed at establishing a comfortable communication environment in Myanmar, where there is an urgent need to improve the communication infrastructure. The mobile phone adoption rate in Myanmar, which was 13% before the launch of the joint venture, has reached approximately 101%, and the number of MPT mobile phone subscribers reached 23 million in June 2017. In May 2017, LTE started in Yangon, Mandalay, Naypyidaw, and by late September 2017, this service will be expanded to some 30 cities throughout Myanmar.

	Before joint venture started	As of March 2017
Mobile phone adoption rate in Myanmar	13%	101%*

* Population is based on figures published by the Myanmar Ministry of Immigration and Population (September 2014). The number of mobile phone subscribers is calculated using figures published by various companies.

■ Digital Skills to Go Forward

MPT launched Digital Skills to Go Forward, a program to improve the digital literacy of young people. It donated 200 laptops and MPT Wi-Fi routers, and dispatched trainers to vocational training schools in the Yangon Region and Mon State under the NLD Education Network. Furthermore, MPT produced a promotion video on the Digital Skills to Go Forward program with the aim of increasing recognition of the program through the video, and at the same time, creating employment opportunities for young people, and narrowing the digital divide with rural regions.

■ MPT Launched Myanmar's First Charitable Donation Platform

MPT has launched "LoTaYa Helping Hands", Myanmar's first charitable donation platform. Buddhism is the dominant religion in Myanmar which is known as a country with the most active donation activities in the world. Through the donation site "LoTaYa Helping Hands", MPT customers are now able to donate conveniently and safely using the prepaid balance on their mobile phones. "LoTaYa Helping Hands" is a free service, and all donations received from customers are directed in full to the charitable organizations of their choice to be used in various charitable activities.

■ Donation of Solar Lanterns to Monastic Schools in Myanmar

2,000 solar lanterns were donated to 632 monastic schools in Myanmar where there are many regions that do not have access to electricity. In such regions, there is a severe problem in the learning environment for students who have to rely on candle light to study. Through this donation, about 58,000 students are now able to study with the help of electricity at night.

Activity **KDDI Group**

Business Expansion and CSR Activities in Mongolia

MobiCom Corporation LLC (MobiCom), a consolidated subsidiary of KDDI, launched a 4G LTE high-speed telecommunications service in Mongolia in May 2016. Using this opportunity, MobiCom aims to achieve business growth, and contribute to further development of the telecommunications environment in Mongolia.

■ W.A.S.H Project

In Mongolia, it is difficult to secure safe and clean water supply, and only 35% of the population is said to have access to safe and clean water. In cooperation with local governing bodies and NGO World Vision Mongolia, MobiCom constructed clean waterworks and toilets in primary schools, and contributed to improving public hygiene for about 35,000 children in 35 villages across 12 provinces. The "W.A.S.H Project" was selected as the Best CSR Project in Mongolia, and has made an impact on policy formulation in the country with further efforts being made to build clean waterworks and toilets in kindergartens and secondary schools in collaboration with the Minister of Health, the Minister of Education, Culture, Science and Sports, and the Minister of Construction and Urban Planning.

■ Child Helpline 108

Since 2014 MobiCom has been participating in "Child Helpline 108" in Mongolia by providing free calls that can be connected 24 hours a day, 365 days a year from children, parents, teachers and social

About Efforts in Growing Markets

welfare workers. MobiCom has received more than 5,000 calls so far, and contributed to solving problems related to child abuse.

Activity　　　　　　　　　　　　　　**KDDI Group**

Efforts of KDDI Foundation

■ **Data Standardization of Ambulance Transport System in Thailand**

The KDDI Foundation conducted joint research in Ubon Ratchathani Province to standardize emergency transport related information, and to build a prototype ambulance transport system that makes use of such information in an effort to reduce the number of people who die while being transported in an ambulance, which can be as high as 60,000 per year in Thailand. Going forward, the KDDI Foundation will continue with the joint research to put the prototype system into operation.

■ **Development and Testing of an Agriculture Mobile App in Bangladesh**

In Bangladesh, more than half of the population is engaged in farming, and the use of ICT in the agricultural field is highly anticipated. The KDDI Foundation established a cooperative system with the local Ministry of Telecommunications and the Ministry of Agriculture to develop a mobile app to support farmers, and a ceremony to mark completion of the project was held in April 2017.

■ **Making Use of Cloud Servers to Create a Network in Universities Specializing in Computer Studies in Myanmar**

By installing cloud servers in the University of Information Technology and connecting 6 universities specializing in computer studies in Yangon, Mandalay, Taunggyi and Dawei through a network, it is now possible for universities to share applications for higher education, and conduct training in virtual cloud technology. Efforts will be made to connect more universities to the network.

■ **Implementation of Overseas Training for Technicians from APT* Member Countries**

KDDI conducted technical training on telecommunications in cyber security and rural regions for technicians from APT member countries.

* Asia-Pacific Telecommunity

■ **Providing International ODA Technical Consulting**

Project		Details of operations and scale
Greater Mekong telecommunication backbone network project in Cambodia (CP-P5)		Consulting service agreement regarding the Telecommunications Backbone Network Project in Greater Mekong
	Implementation period	December 2007 to October 2017 (expected completion)
	Yen loan	3.029 billion yen
Dispatch of support personnel for consulting service concerning the communications network development project for major cities in Iraq (IQ-P17)		Consulting service on increasing the installation of IP related devices such as IMS-core equipment, Edge-router and PON
	Implementation period	December 2013 to May 2017 (completed)
	Yen loan	11.674 billion yen
Preparatory study of plan to develop an emergency telecommunications system in Bhutan		Preparatory study mainly to investigate the development of stronger telecommunications facilities for mobile phones in response to disasters
	Implementation period	December 2016〜December 2017 (scheduled)
	Yen loan	None (free)

Results　　　　　　　　　　　　　　**KDDI Group**

Evaluation of Our Efforts in Growing Markets

Evaluation	Subject
・First place in the 2016 TOP 10 Entrepreneur award organized by the Mongolian Chamber of Commerce and Industry ・Recognized for efforts to create a friendly workplace environment and given the very first Best Employer of Mongolia award	MobiCom
Selected as "The Most Loved Brand" in Myanmar in the BrandZ Spotlight brand ranking by Millward Brown, a research agency under the WPP Group, a British advertising company	MPT