

Enthusiasm Creates Surprise and Excitement—With the Spirit of DOCOMO, 5G Will Build a Richer Future



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Overview

Japan has reached the point in its advancement that it has to urgently and thoroughly address contemporary problems such as energy consumption, deterioration of infrastructure, and other social issues, including a declining birthrate and aging population. NTT DOCOMO is tackling these social issues using fifth-generation mobile communication systems (5G). At the same time as the Rugby World Cup 2019™ held in Japan this fall, NTT DOCOMO launched a 5G pre-commercial service, and such 5G services are expected to be applied in various scenarios. We asked Seiji Maruyama, Senior Executive Vice President, NTT DOCOMO, about NTT DOCOMO's endeavor to collaboratively create new value through contributions to industry, solutions to social issues, and expansion of its business.

Keywords: 5G, social issues, open collaboration

5G pre-commercial service has started. We want to support communication

—5G pre-commercial service started in conjunction with the Rugby World Cup 2019™ that took place in Japan. How was the reaction?

We are sensing expectations from everyone. We targeted starting the 5G pre-commercial service in conjunction with the opening of the Rugby World Cup 2019™*. I want as many people as possible to experience the splendor of fifth-generation mobile communication systems (5G).

5G has three features: high speed and large capacity, low latency, and multiple-terminal connection.

We can say that 5G is a delightful way to watch sports that require a sense of presence and reality. We proposed and offered a new viewing style, such as multi-angle viewing, by which users were able to freely switch and watch footage captured from several cameras located in the stadiums and view additional information (such as player data) during some games of the Rugby World Cup 2019™. Taking advantage of the experience we gained through this pre-commercial service, we plan to start a 5G commercial service in the spring of 2020.

In the 5G era, the way you use your smartphones

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will change too. NTT DOCOMO is advocating the My Network Concept that allows 5G smartphones to be used as hubs for various peripheral devices and services linked to them in a 5G environment. Collaboration with partners is also very important. DOCOMO is promoting the DOCOMO 5G Open Partner Program for creating new usage scenarios for 5G in collaboration with over 3000 partners (as of September 2019), including companies, universities, and local governments. At the 5G pre-commercial service presentation held on September 18, we exhibited eighteen examples of our efforts in various fields, including manufacturing, medical care, and education, and environments such as work and public areas.

One example, which is an initiative with Takenaka Corporation, is remote operation of tower cranes used in the construction of high-rise buildings. A tower crane cannot work unless the operator climbs to the operator's cabin at the top of the crane, and once the operator has climbed to the cabin, it is said to be troublesome to come down to the ground again. To alleviate this work burden, we plan to conduct a trial demonstration of 5G remote control. It will be possible to transmit on-site audio and video, as well as crane-vibration data, which is important for making appropriate operational decisions, by using 5G. Consequently, the crane can be remotely operated as if the operator were in the actual cabin.

The rollout of 5G has attracted the attention of various fields and represents a huge technological advancement. It will be one of the pillars of digital transformation. Although new mobile communication technologies and services have been introduced approximately every 10 years—starting from the first (analog) generation in the early days of mobile phones, to the second generation (digitized from the first generation), to the third generation (oriented to mobile multimedia), and to the fourth generation (based on LTE: Long Term Evolution), 5G is attracting unprecedented attention.

Said to be an advanced country in terms of issues to be solved, Japan is facing various social issues such as the declining birthrate and aging population, depopulation in rural areas and regional disparity, labor shortage, and foreign workers, and these have become hot topics. Under these circumstances, 5G, artificial intelligence (AI), and the Internet of Things can be used to provide telemedicine and medical support, remote operation of construction machinery, and automatic operation of agricultural machinery. With such potential, 5G can be supplemented with a variety of added value in a manner that makes it use-



ful for solving social issues.

—It seems that 5G will help solve the problems facing Japan.

Regarding the 5G pre-commercial service, through our DOCOMO 5G Open Lab, which we have expanded from four to eleven locations, NTT DOCOMO is providing 5G base-station equipment and video-transmission equipment connected to mobile stations free of charge to partners undertaking verification. We hope that partners who want to use 5G will use this testbed and deepen their collaboration with us in creating new 5G services. Aiming to solve the social issues that I mentioned earlier, we will accelerate our endeavors through the activities of our DOCOMO 5G Open Partner Program and DOCOMO 5G Open Lab.

For example, the revitalization of regional communities is promoted as a countermeasure against depopulation. In addition to creating industries using 5G, it is important to support the lives of people living in regions to be revitalized. If a new telemedicine infrastructure is put in place by connecting medical services in depopulated areas with hospitals in other areas via 5G, it would be possible to nurture a sense of security in residents with regard to being able to receive high-quality medical care, and that sensibility may lead to attracting more residents.

Regional revitalization tends to be a story of a particular region; however, as in the above example of telemedicine, cooperation among regions is vital. Communication between “people and people,” “people and systems,” and “systems and systems” is essential for this collaboration. 5G excels at communication providing a high sense of reality, real-time

information, and expanded networks, and providing communication services and infrastructure with such features is one of DOCOMO's major missions, which goes hand-in-hand with another of our major missions: providing solutions to social issues.

The marketing environment has entered a period of change

—Would you tell us about the present environment surrounding DOCOMO?

The revised Telecommunications Business Law came into effect in October 2019. It has thus become necessary to review our sales methods, including adaptation to the separation of communication charges and device charges. In addition, a fourth operator was allowed to enter the market by the Japanese government to promote competition. It is rare for a large over-the-top player to enter a market as a mobile operator; accordingly, the Japanese mobile communication industry is attracting attention worldwide. Since that player is expected to enter the market with technologies and methods that differ from the methods we have cultivated thus far, we will study them thoroughly and adopt their good points.

The market also demands price competition among service providers, and by anticipating such changes in the environment, we introduced a new billing plan in June. Under a simple and easy-to-understand mechanism, the charges paid by certain customers will be cut by up to 40%. I want our customers to understand the features of DOCOMO services and continue to use them for as long as possible.



—It seems that various services will be created according to the changing times and needs.

We announced our medium-term management strategy in October 2018. To achieve sustainable growth in the 2020s, we are developing our business based on the basic policies of “transformation to business structure centered on customer membership programs” and “rollout of 5G and business creation.” To implement those policies, we are focusing on creating revenue opportunities based on our customer base, growth with 5G, and rewarding customers and evolving customer contact points.

I explained the rollout of 5G and business creation earlier. Regarding transformation to business structure centered on customer membership programs, the definition of *customer* has changed. In the past, only subscribers to our mobile phone service have been defined as customers, but now all users of any of our services are defined as customers. For example, among our members of d POINT CLUB (customer loyalty program), nearly 20 million have contracts with other mobile phone service providers. Those people are also our customers, and together with customers having a mobile phone contract with DOCOMO, the number of customers is close to 70 million.

We are promoting marketing activities tailored to each individual so that all our customers can use various services more conveniently and actively. Our business operations centered on customer membership programs are steadily expanding, and the number of members is also increasing. Payment methods such as d CARD (credit card) and d PAYMENT (mobile payment service) are also spreading. By leveraging a wealth of assets, we will expand the number of members and partner companies and link them through digital marketing in a manner that forms continuous relationships with customers and provides new value.

This information of nearly 70 million members represents valuable big data. We currently have about 30,000 pieces of data per person, and we have accumulated those data for 70 million people. However, some customers may be worried about how these big data are used. Accordingly, to guarantee customer security and gain their trust while providing new value through data utilization, we announced DOCOMO's data-utilization policy in August 2019 as a personal data charter. In December, a personal data dashboard will be launched so that our customers can check their permission status concerning

different types of data and change their settings as desired.

An example of using another form of big data is our service called Mobile Spatial Statistics. This service allows the user to track or obtain anonymized information and see the distribution of people's movements on a map in a specific area in real time. Combined with AI, it is used for predicting demand of visiting commercial stores, optimally rearranging bicycles for bicycle-sharing services, and predicting traffic congestion on expressways.

Moreover, various sensors and cameras are installed in smartphones, so by linking these features with AI, many unique services are being created such as estimating concentration and mental state as well as selecting food from food packages and labels according to what food cannot be eaten for religious reasons. Some of these services have been put to practical use based on excellent ideas proposed in the Challenge Project that employees put forth voluntarily.

The NTT Group's DNA: exerting its strength during challenging moments

—In addition to new services, the mechanisms of DOCOMO seem to be structured to motivate young people and make them meet their potential in the company. Can you give a word to researchers and engineers inside and outside the company?

It is my job to create an environment in which employees are motivated. This is a great opportunity for us when the 5G and information and communication technology (ICT) revolutions gather pace. I want to create a company in which employees can work proactively in this era. I think this situation is the same for each company in the NTT Group. So many opportunities are being formed, so I'd like our employees to grab them as many as possible. It is therefore important to work with enthusiasm. If we keep working with enthusiasm and a sense of purpose, chances will come in any environment.

Since joining NTT, I have been saying, "I want to do that," or "Let me do this." The first time was when I was assigned to the Mobile Communications Division. At that time, I belonged to the department responsible for developing services in the era of car phones. However, I didn't know the elements of the technology, so I requested to be assigned to a research center to study the technology more thoroughly. I applied for a transfer and was allowed to conduct



research and development of wireless communications. However, when I was doing this, I wanted to know more about the entire business, so I applied again for another transfer. Thinking back now, I was probably being a bit out of line, but I am very grateful to my seniors who fulfilled my request.

Again, I think we are in the midst of changing the world through the use of ICT. The NTT Group is at the very center of that change, and I think this is very fortunate. NTT Group employees can take advantage of this opportunity. I believe that by working with enthusiasm and purpose, our achievements will surely be useful to the world.

—What is the source of your enthusiasm?

When I was in charge of developing handsets, I was very happy to actually see that what I had been working on was out in the world. I was delighted to see people pointing to a cell phone and saying, "It's cool!" or when I saw a cell phone actually being used. In my case, that feedback may be a source of my enthusiasm.

Moreover, I think that the work hard/play hard mentality, which is now called "work-life balance," is another source of my enthusiasm. On weekends and holidays, I get a good rest by doing some reading. Most of the books I read are novels because I think it is important to just let your mind go. It is good for people to do things they like to reset the body and mind and tackle things without worrying. Such actions will also be a source of energy.

What's more, a sense of mission may be a source of enthusiasm. An example is a story about recovery from a communication failure caused by Typhoon Faxai that hit Chiba Prefecture in September. Due to

a power outage, it was difficult to use mobile phones, or they could not be used at all over a wide area. Although the restoration took time and inconvenienced our customers, our employees from Chiba and all over the country worked together tirelessly to restore communication services. NTT Group's cohesion accompanies such unforeseen disasters, and the response is a spirit that has been handed down from generation to generation. That spirit comes from a sense of mission to provide infrastructure that is crucial to society. If an incident occurs, a system is in place to respond to it immediately. The president and other executives gather at the disaster-response headquarters, and all employees—not only the executives—are prepared to respond. I think this commitment is both NTT's DNA and a source of enthusiasm.

Interviewee profile

■ Career highlights

Seiji Maruyama joined NTT in 1985. In 2010, he became NTT DOCOMO General Manager of the Product Department; in 2016, he became Senior Vice President and General Manager of the Human Resources Management Department; and in 2018, he became Executive Vice President and General Manager of the Corporate Strategy & Planning Department, Responsible for Mobile Society Research Institute and Preparation for the 2020. He assumed his current position in June 2019.