

Creating Something New in Growing XR Market by Utilizing Agile Management



Seiji Maruyama
President and Chief Executive Officer,
NTT QONOQ

Abstract

NTT QONOQ was created by NTT DOCOMO, which focuses on communication between people. NTT QONOQ aims to create new experiences that zigzag between real and digital spaces with the hopes to enrich people's minds and energize society, going beyond distance, time, and imagination. We interviewed Seiji Maruyama, president and chief executive officer of NTT QONOQ, who is working toward creating a market for extended reality (XR), about the status of the company's business and his mindset as a top executive.

Keywords: XR, metaverse, remote operation

Entering the XR market in three areas: the metaverse, digital twins, and XR devices

—More than a year has passed since NTT QONOQ was established and you were appointed president and chief executive officer. Could you please tell us how you feel looking back on the past year and the progress of the company's business?

Since NTT QONOQ was launched in October 2022, things have been going well. We have developed a variety of extended reality (XR)* services and established NTT QONOQ Devices, a joint venture with Sharp Corporation. In addition to the approximately 200 employees of NTT QONOQ, the employees of our subsidiaries, and our collaborative partners, we are working together to develop XR technology; and I feel that we have finally formed NTT QONOQ into a company.

We provide various services and solutions in three

business areas: the metaverse, digital twins, and XR devices. Although these businesses are supported by XR technology, XR technology is still a developing field. The amount of data in the three-dimensional space that composes the XR space is enormous, and it is essential that communication networks and devices evolve to cope with this. However, current technology has not evolved enough, so what we can do is limited, and we are developing XR products within those limits.

Under the above-described circumstances, we are working with the research and development (R&D) departments of NTT and NTT DOCOMO to promote medium- and long-term technological development. To supplement expertise not available within the NTT Group, we are collaborating extensively with other companies to provide new customer value

* XR: A generic term for advanced technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR).



while adopting agile management by leveraging the advantage of being a small company.

—Regarding the XR business, you will have to compete with major domestic and global companies. In such a competitive market, what strengths does NTT QONOQ bring?

XR technology is still in its infancy, and the XR market is in its growth stage. Meta, Microsoft, Apple, Epic Games, and other major companies are actively investing in the XR business to achieve vertical integration, and the XR market is expected to grow significantly over the next few years. A variety of smaller companies, including startups, have also entered the XR market, and each one is specializing in areas where they can use their strengths to develop their businesses, which is boosting the market.

Under these circumstances, we have two strengths. One strength is that we cover the full range of XR components—from servers and networks to terminals. Our other strength is that we have a wealth of technology and human resources. Originally, each company in the NTT Group developed its own XR business under the NTT XR vision of “transcending the limits of reality to a world where people can experience and share their dreams and thoughts.” To achieve this vision, those technologies and human resources were consolidated to establish NTT QONOQ.

We are exploring various business possibilities by leveraging the NTT Group’s sales base and technological capabilities, while striving to provide value and flexibly, by combining our technologies we can meet customer needs in a speedy manner. Naturally, we are very grateful to NTT Group companies for their support.

Combining the strengths of the NTT Group to take on challenges in a wide-ranging and comprehensive manner

—NTT QONOQ is combining the strengths of the NTT Group to address the XR market in a broad and comprehensive manner. Is there any chance for us to experience its technological capabilities?

Yes. The NTT Group will participate in Expo 2025 Osaka, Kansai, Japan, and I believe this is a great opportunity to showcase technological capabilities of NTT QONOQ and the NTT Group. As one example, NTT will provide the Virtual Expo, which is a virtual reproduction of the Expo’s physical venue, and NTT QONOQ will be in charge of developing the software. The Virtual Expo is part of the future society showcase project at the Expo, which will incorporate cutting-edge technologies and systems into operations at the venue. This service will enable visitors to experience the Expo without actually visiting the venue by reproducing the Expo site and pavilions in

a virtual space (the metaverse). Visitors will be able to use their avatars (alter egos) to tour the Virtual Expo and enter the virtual pavilions and experience virtual events.

Before I go on, let me leap back in time. As an elementary-school pupil in rural Kyushu, I went to see the Japan World Exposition, Osaka in 1970. As a boy who loved science, I remember being very excited about the Expo. I feel that the experience influenced me into becoming an engineer. Through the Virtual Expo, I hope that many people will be able to experience similar hopes and dreams like I did.

As I mentioned earlier, XR is an immature technology, and the general public may not have a real sense of what it is. However, experiencing XR will help them realize how interesting XR is and change their impression of the technology. Therefore, to provide an experience of XR technology, we have opened “XR BASE produced by NTT QONOQ” (<https://www.nttqonoq.com/xrbase/>) at the Electric Town ticket gate of Akihabara Station in Tokyo. Admission to XR BASE produced by NTT QONOQ is free, so



please feel free to visit and experience it for yourself.

—Once we experience XR technology, how to apply it to the real world will become more realistic. NTT QONOQ has announced in press releases and through other media that it began offering a variety of XR solutions, correct?

In the metaverse business, we are focusing on representing avatars in a more human-like manner. Specifically, we will enable a human-like response by an avatar in the virtual space platform on the web called “DOOR” by using artificial intelligence (AI). NTT QONOQ offers the “XR Concierge” solution by combining an avatar and dialogue engine equipped with customized conversational AI. Using these technologies and knowledge on the metaverse, we will enable an avatar to respond to users in a user-friendly manner by analyzing the user’s emotions and estimating their state of mind. We are collaborating with NTT Group companies to incorporate AI technologies gathered by the NTT Group.

Remote work has become widespread due to the COVID-19 pandemic, and some people say it is difficult to communicate remotely compared to face-to-face. With that concern in mind, we started a service called “NTT XR Lounge.” As a small metaverse space containing avatars, NTT XR Lounge is designed to facilitate informal communication such as chatting among team members.

Amidst the labor shortages due to the declining birthrate and aging population in Japan, the augmented reality (AR) field is addressing social issues through remote operation. We offer “NTT XR Real Support” (<https://www.nttqonoq.com/realsupport/>), a remote-operation support solution using mixed reality (MR) technology, for reducing on-site maintenance in the infrastructure industry and supporting machine operation and on-site maintenance in the manufacturing industry. It is already being used in a variety of fields, including agriculture and fire departments, where it allows the transmission of skilled techniques remotely. We are also investigating applying it in the medical field, such as dentistry, and in the educational field by taking advantage of its ability to represent objects in three dimensions.

XR is active mainly in the industrial sector, and we exhibited our XR solutions at the 7th Smart Factory EXPO Tokyo in January 2023 to help people realize the advantages of our XR solutions. At our booth, we added a new device model compatible with NTT XR Real Support and offered visitors the chance to



experience hands-free MR remote support. We are also developing a lightweight eyeglass-type device, which we plan to launch in 2024.

Intuition is cultivated from experience

—Is the experience you have gained since joining NTT useful in your work as the head of NTT QONOQ?

I became president of NTT QONOQ following my previous job as the senior executive vice president of NTT DOCOMO. After assuming my new position, I have felt a big change because the scales of the two companies are completely different. Since joining NTT, I have worked as an engineer and served as a top executive several times. The experiences I had during that time have been useful in my current position, and I want to talk about one of those experiences I had at DOCOMO PlusHearty, of which I was the president for about two years.

DOCOMO PlusHearty was established to promote employment, primarily for people with severe intellectual disabilities. The company offers cleaning and other services and is about the same size as NTT QONOQ. At that time, I strived to create a good environment and devised ways to make it easier for employees with disabilities to work and make progress in their tasks. The employees took this to heart and worked diligently on various job sites, and we received feedback from our customers that they were very pleased with our employees' work, which made me very happy.

In fact, now I again realize the importance of communication. I think the success of DOCOMO PlusHearty shows the advantages of being a small company—speed of response, quick decision making, and agile management—which allow the voices of the workers in the field to be delivered directly to a top executive, who can then respond quickly.

Because of that experience, I continue to place importance on direct communication with employees at NTT QONOQ. For example, I hold in-house events, such as wine parties and participate in e-sports tournaments, to increase opportunities to communicate directly with front-line employees, and I find those activities meaningful and fun.

Another thing I continue to emphasize is to be unafraid of failure. Of course, we are in business, so it is important to reduce failures; but even so, it is equally or even more important to be willing to take on challenges. If you are afraid of failure, you cannot take on any risks.

As I already mentioned, XR is in uncharted territory, and it is our job to create something new with XR. I remind our employees daily that even if they fail, they should keep trying.

—It sounds like you are taking the helm of NTT QONOQ and leveraging your various experiences. What do you think is required of top executives? And do you have a message for everyone?

First, top executives are the ones who make the final decision. In a large organization, the heads of

each department make careful decisions from their respective standpoints, and those decisions are then taken into consideration when a top executive makes their final decision; however, in an organization the size of ours, employees in the field consult directly with a top executive. Therefore, quick decision making is required, which can be difficult, but I try to make decisions on the spot as much as possible.

While it is important to analyze past cases, figures, and failures, it is also important to listen to your heart to confirm the true meaning and gravity. At the final moment of decision making, intuition plays a key role. Intuition may sound irresponsible, but I think it means making instantaneous judgments based on previous experience. In that sense, intuition may be an “unconscious lessons learned from experience.”

Top executives should also value the curiosity of not only their employees but also themselves. Curiosity shows us new things and teaches us how to look at things from different angles. We do not know everything about the world. Curiosity is stimulated by talking with people from a wide range of perspectives, and I try to stay curious no matter what position I find myself in.

Considering these experiences, I hope that all of you, especially researchers, will embrace curiosity and engage in your work without fear of failure. They say that failure is the mother of success, but without the accumulation of results and efforts, no awareness

can be gained. Considering my experience as an engineer, I believe that the research and development you are engaged in is important and you need to respect your desire to take on this challenge.

To our corporate and consumer customers, XR technology is rapidly evolving. Please try it out and let us know what you think. Your impressions and experiences will help us open new doors. To all our partners, there are limits to what one can do alone, so let's continue to work together.

Interviewee profile

■ Career highlights

Seiji Maruyama joined NTT in 1985. In his career at NTT DOCOMO, he became general manager of the Product Department in 2010, senior vice president and general manager of the Human Resources Management Department in 2016, executive vice president and general manager of the Corporate Strategy & Planning Department, responsible for Mobile Society Research Institute and Preparation for the 2020 in 2018, and senior executive vice president and representative member of the board of directors in 2019. He assumed his current position in October 2022.