

## Dawn of the 5G Era



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In Japan, March 2020 marked the launch of commercial services for the fifth-generation mobile communications system (5G). Up to now, the mobile communications system has evolved to the next generation of technology about once every ten years, starting with the first-generation analog system and moving on to the second-generation digital system, third-generation IMT-2000, fourth-generation LTE, and today's 5G. During this time, transmission speeds and network capacity have increased dramatically, which has helped to make our daily lives more convenient and, in industry, to increase productivity and foster the creation of added value. In 5G, even higher speeds and greater capacities will enable advanced media such as high-definition video transmission, Virtual Reality (VR), and Mixed Reality (MR) to be used in an exceptionally smooth manner. Furthermore, thanks to other features such as low latency and massive device connectivity, we can expect 5G to be used in the gaming field including esports that requires rapid reactions and in the Internet of Things (IoT) field that uses many and varied sensors.

The introduction of 5G should drive the evolution

of the mobile communications infrastructure through these improvements in technical performance. It should also drive the evolution of the business infrastructure by facilitating the creation of new lines of business and the evolution of the social infrastructure by helping to solve pressing social problems and contributing to regional revitalization. The DOCOMO 5G Open Partner Program has been in operation since February 2018 to provide a boost to this evolution through the creation of services and solutions in collaboration with a wide range of companies and organizations, local governments in Japan, and research institutions including universities.

Some of these collaborative activities were presented at DOCOMO Open House 2020 held in Tokyo in January of this year. Many visitors to this event were able to learn about and comment on the achievements made so far by these activities.

In this way, the 5G era will stimulate the creation of a wide range of services and industries, and we envision that a diverse array of devices in addition to smartphones and tablets will come into widespread use. For example, the use of Head-Mounted Displays (HMDs) to view VR video services via 5G smartphones or the use of future HMDs capable of 5G communications will enable users to have truly immersive and intuitive experiences in a mobile environment. In addition, the linking of high-definition cameras, wearable devices, sensors, and other types of devices should free us from the limitations of smartphone/tablet-based User Interfaces and User Experiences (UI/UX) and lead us into an era of truly novel experiences. Device vendors will find it easy to participate in a 5G ecosystem where a wide range of business opportunities will take form.

To meet customer needs that look to become increasingly diversified and sophisticated from here on, it will be vitally important to give birth to added value through cutting-edge ICT of the era and to determine how such added value should be used. Today, we anticipate future service and product designs that will make effective use of 5G as an important infrastructure supporting the next ten years and that will enable our customers to experience this added value.