A commercial cloud infrastructure was built in half a year

Zero-touch platform deployed with automation to ensure consistent operations

Increased agility and enhanced flexibility through the use of a single, easy-to-deploy architecture

NTT DOCOMO develops a co-creation platform for the 5G era

NTT DOCOMO, Japan's leading mobile communications service provider, has been pioneering the development of wireless communication services in the country since its inception in 1991.

With a corporate philosophy of creating a new world and culture of communications, the company's history dates back to when it was a pager service provider under Nippon Telegraph and Telephone Public Corporation (NTT), established in 1968. Since then, NTT DOCOMO has been the first to drive market innovation in mobile services from 1G to LTE 4G.

In March 2020, NTT DOCOMO took the lead in launching 5G at a commercial scale and wanted to develop a zero-touch operations platform for the creation of new 5G service solutions. This was an important step for the Japanese market, with 5G setting a new, powerful communication standard of over 500,000 times (multiple Gbps) the communication speed of 1G (2.4kbps) during the 1980s.

"DOCOMO Open Innovation Cloud" for co-creation

In May 2020, NTT DOCOMO launched the "DOCOMO Open Innovation Cloud" in hopes of developing a service co-creation platform that could be used by participants of its DOCOMO 5G Open Partner Program. Key priorities included usability and ensuring low operational load through automation functions.

NTT docomo

Leading Japanese mobile communications operator, NTT DOCOMO Inc. (NTT) started as a pager service provider in 1968, and transitioned to take over mobile cellular operations in 1991.

In 2015, DOCOMO started implementing various initiatives as part of its goal to become a "value co-creator" for partners and customers.
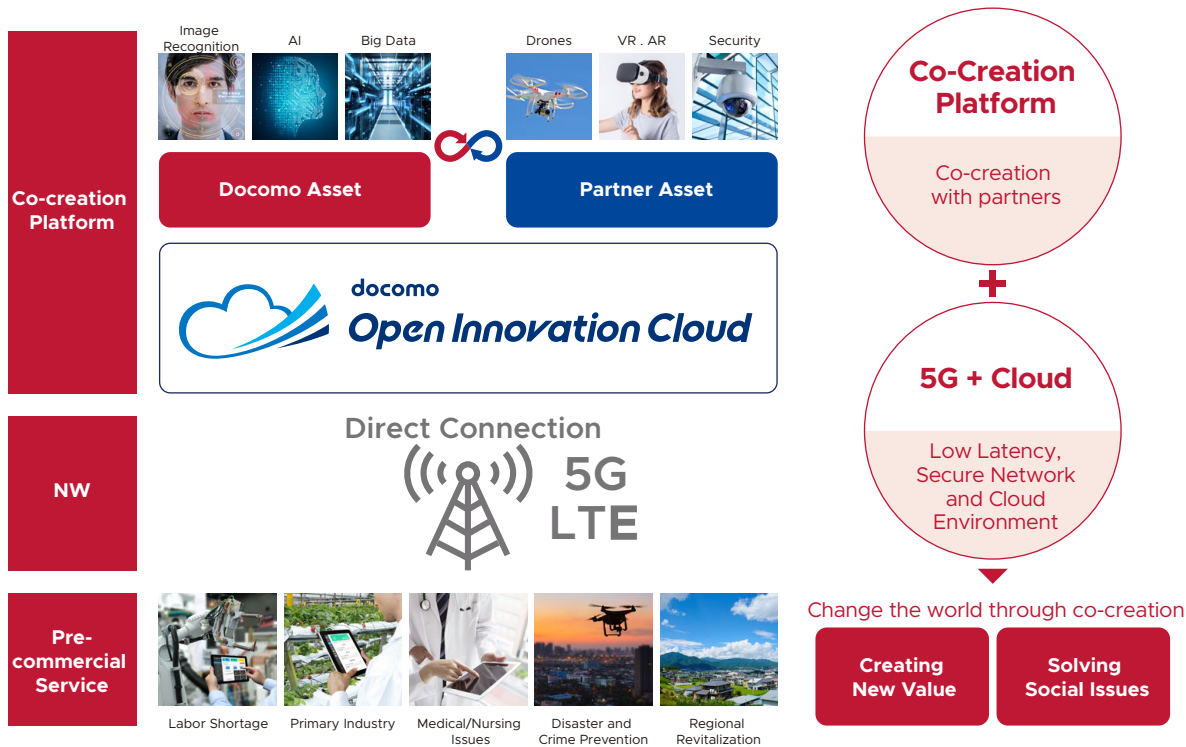
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VMware vRealize® Network Insight™
VMware Cloud Director™
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A co-creation platform for the 5G era

Co-creation Platform

Image Recognition | AI | Big Data | Drones | VR . AR | Security

Docomo Asset   **Partner Asset**

docomo **Open Innovation Cloud**

NW

Direct Connection

5G LTE

Pre-commercial Service

Labor Shortage | Primary Industry | Medical/Nursing Issues | Disaster and Crime Prevention | Regional Revitalization

Co-Creation Platform

Co-creation with partners

+

5G + Cloud

Low Latency, Secure Network and Cloud Environment

Change the world through co-creation

Creating New Value   **Solving Social Issues**

Most importantly, NTT wanted to prioritize the completion of this project to accelerate deployment across its umbrella companies.

A cloud platform that would directly connect to NTT DOCOMO's secure and low-latency network, the Open Innovation Cloud would enable participants to develop their own assets and collaborate with the technical assets of other partners to provide all kinds of new services.

The addition of 5G brings low latency and support for multiple connections simultaneously. This is expected to play an active role as a network base for various services, such as stadium solutions, 4K/8K streaming of large-capacity video broadcasts, telemedicine, real-time face recognition and even agricultural ICT and smart homes utilizing multiple IoT devices.

VMware Cloud Foundation enables operability and low ownership costs

The goal was to achieve a fully automated, zero-touch platform where neither users nor administrators would have to perform any tasks manually, and where consistent operations could be managed using a simple configuration as all server/storage/network resources are virtualized.

Seiya Kawasaki, Manager of Service Design Department, said, "While the concept of a service co-creation platform was firmed up at the end of 2018, it had to be built by September 2019. Suffice to say, it was impossible to build a stable and

secure base from scratch within such a short period of time, especially with many participating players. This is why we chose VMware Cloud Foundation, an established solution to serve as the IT infrastructure for this project."

VMware Cloud Foundation™ served to ensure operability, freeing users from the need to prepare and manage the infrastructure on their own.

"With VMware Cloud Foundation, we were able to build a service co-creation platform to bring to life new 5G services within a short amount of time. We look forward to creating the ideal zero-touch platform on the cloud so that we can constantly innovate as technology evolves."

TAKASHI ITOU,
GENERAL MANAGER OF SERVICE DESIGN DEPARTMENT
NETWORK DIVISION, NTT DOCOMO, INC.

vmware®

Masanobu Yamagiwa, at the Service Design Department said, "We hope that the platform itself will continue to evolve with the development of other technologies and services. With VMware Cloud Foundation, the latest VMware features are automatically upgraded and can be managed collectively using SDDC Manager. This helps ensure that the operational load remains small and keeps the total cost of ownership low."

NTT Docomo wanted to achieve rapid provision of virtualization and virtual networks to partner companies and develop a flexible platform that can be easily updated as technology evolves. To achieve these aims, NTT DOCOMO chose VMware Cloud Foundation as its IT infrastructure. Understanding the customer's needs, the VMware team worked with NTT to deploy the solution within half a year. After starting the process, the VMware team utilized the automation function to run multiple updates within a short period of time.

Looking ahead

To ensure its usability, NTT DOCOMO's Open Innovation Cloud has engaged VMware Professional Services to leverage expert knowledge during the design stage. NTT will also consider the adoption of new technologies like containers in its future plans.

Mr. Takayuki Tsukagoshi, Assistant Manager of the Service Design Department, said, "Technology is evolving rapidly, and thus we have to keep up. We asked our VMware team in Japan to provide support across a wide spectrum of needs, including coordination with the development team in the US headquarters, coordination on the licenses, termination of

support for existing products, selection of new products, etc. This has focused the scope of what we need to think about and has allowed the building of a better foundation."

Looking ahead, the key priority for NTT DOCOMO is to ensure a successful 5G experience. A variety of services will be required, and NTT DOCOMO recognizes that more partners will be needed.

As part of its next steps, the business is looking to further evolve and enhance the ease of use of DOCOMO Open Innovation Cloud as well as continually develop the zero-touch platform for use.

"For our partners to develop the latest services, adopting cutting-edge technologies is a must. We are looking forward to working with VMware and using its latest technologies to develop an even better platform," said Kazunori Iida, Senior Manager Service Design Department.

With 5G expected to evolve businesses and services, VMware looks forward to a continued partnership with NTT DOCOMO and to support its value co-creation vision in this new era with DOCOMO Open Innovation Cloud.

#VMware Cloud Foundation enables 5G services and rapid provision of virtualization and virtual networks to partner companies for NTT Docomo