



# NTT Innovation & History





At NTT, our history is rooted in innovating the future.

We were established 150 years ago, weaving together the principles of **quality and innovation** with the goal of connecting people and society. We believe in ethical technology development, trusted global partnerships, innovation that matters today, and long-term innovation for tomorrow, with the aim of protecting nature while supporting **prosperity and wellbeing for all**.

This is the foundation for innovation at NTT, on which we have grown from a government department and communications provider in Japan to a leading global technology and business solutions provider. Our strategy is to continuously innovate – and it is represented in our logo as the dynamic loop of innovation and the idea of always listening to people and society. It is the reason we have been a successful business for a century and a half, and it's how we are **forging a path into the future**.

# NTT's roots as a connector

We were founded to build connections. Our long history can be traced back to the first telegraph service in the late nineteenth century.

Interconnectedness mattered then, and it is even more crucial in today's world, as people, technologies and even nature need to be connected in many ways. Our longstanding fundamental understanding of how and why to drive interconnectedness gives us the foundation on which to enable the internet of the future.



In **1890**, we initiated the first telephone service in Tokyo and Yokohama, creating the infrastructure for future communications technology in Japan. Subsequently, we **enhanced telephone sound quality and connectivity** by engineering innovative technology that eliminated the need for operator assistance.

In **1970**, at the Japan World Exhibition, we showcased a **video-telephone connecting Osaka with Tokyo**. This was a significant milestone in the evolution of communications.

In **1999**, we were the first to provide a connection service called i-mode, allowing users to access the internet directly from their mobile phones. Additionally, we **introduced the world's first emoji**.

In **2019**, we took our **first step toward developing an all-photonics approach to networking and computing** called **IOWN (Innovative Optical and Wireless Network)**. This revolutionary approach promises to transform the way we communicate and connect in the future.

## Now, let's delve into a few remarkable innovations by NTT

# 1

**Switching Systems** (1970s): NTT was an early adopter and developer of digital switching systems, transitioning from analog to digital to improve the efficiency and capacity of telephone networks. This innovation laid the groundwork for modern telecommunications.

# 2

**Optical Fiber Cable Deployment** (1980s): NTT played a pivotal role in the development and deployment of optical fiber cables, significantly enhancing the capacity and speed of telecommunications networks. This technology revolutionized the way data was transmitted, leading to the high-speed internet and communication networks we rely on today.

# 3

**Diversification into Internet Services** (1990s): Recognizing the potential of the internet, NTT expanded its services beyond traditional telecommunications, launching NTT Communications to provide internet connectivity and related services. This move helped catalyze the growth of the internet in Japan and across the globe.

# 4

**Development of IPv6** (2000s): NTT was instrumental in the development and adoption of IPv6, the latest version of the Internet Protocol (IP) designed to address the exhaustion of IPv4 addresses. This innovation ensured the scalability of the internet for the foreseeable future.





**5G Technology Development** (2010s): NTT DOCOMO, a subsidiary of NTT, has been a leader in the research and development of 5G technology, aiming to provide ultra-fast, reliable, and low-latency wireless communication. This technology is crucial for the advancement of the Internet of Things (IoT), autonomous vehicles, and other emerging technologies.

5

**IOWN Concept** (2019): NTT announced the Innovative Optical and Wireless Network (IOWN) concept, aimed at creating a new communication infrastructure that combines cutting-edge photonics and computing technologies. IOWN is envisioned to support the data-intensive applications of the future, offering faster speeds, lower latency, and higher energy efficiency than current networks.

6

**Quantum Computing Research:** NTT is actively involved in quantum computing research, aiming to develop quantum networks and quantum cryptographic technologies. These efforts are expected to lead to breakthroughs in secure communication and computing power, addressing some of the most challenging problems in cryptography and complex system simulations.

7

**Environmentally Friendly Technologies:** NTT has also focused on innovations that reduce environmental impact, including the development of energy-efficient data centers and green technologies. Their efforts in this area underscore the company's commitment to sustainability and combating climate change.

8

# Our evolution from local to global

Our story has its start in Japan. The history of innovation at NTT is deeply connected to how we have enabled the growth and development of technology and telecommunications locally. For instance, in the 1970s, Japan was an early adopter of the fax machine. We played a key role in supporting the growth of that important communications technology, enabling its use across the country through our telecommunications networks.



In the early 2000s, we introduced fiber to the home, the world's first fiber-optic communication system, offering stability, speed and flexibility, and enabling a new era of the internet. This delivery model has since become the **global standard**. Subsequently, we broadened our IT services portfolio to support our Japanese clients as they extended their global reach.



# Our passion to build the future

Growth came in part through **strategic acquisitions** to accelerate the realization of our vision for the future. We added smart companies with great inventions that were melded into NTT to enable further innovation. For example:

In 2010, we acquired a company with a strong presence in Africa, South America and the Middle East, and we also acquired an IT services company that allowed us to expand our reach in the U.S. while also providing global SAP service capabilities.

In 2016, we acquired an IT services company that bolstered our strengths in industry consulting and vertical solutions in major segments around the world and moved us toward our vision of becoming a top five global IT services leader.

Our history of innovation is embedded in the history of every company we have acquired. Integrating their ideas and inventions into our **culture of quality, interconnectedness and innovation** makes us who we are today.



# Seeing the future through the lens of our history of innovation

NTT has long been an innovation leader in the technology industry. We uphold the same values and collaborative spirit that have established us as the ideal innovation partner for the needs of today, committed to shaping a brighter future for society and the planet for tomorrow.

We continue to build on our fundamental principles of quality and innovation to connect people and society. We operate based on **ethical technology** development, trusted **global partnerships, innovation** that matters **today**, and long-term **innovation for tomorrow**, with the aim of protecting nature while supporting prosperity and wellbeing for all.

We have been **innovating the future for 150 years**. We are here for the long term, innovating for a better, more prosperous and sustainable future for all.







NTT contributes to a sustainable society through the power of innovation. We are a leading global technology company providing services to consumers and business as a mobile operator, infrastructure, networks, applications, and consulting provider. Our offerings include digital business consulting, managed application services, workplace and cloud solutions, data center and edge computing, all supported by our deep global industry expertise. We are over \$97B in revenue and 330,000 employees, with \$3.6B in annual R&D investments. Our operations span across 80+ countries and regions, allowing us to serve clients in over 190 of them. We serve over 75% of Fortune Global 100 companies, thousands of other enterprise and government clients and millions of consumers.

[www.global.ntt](http://www.global.ntt)