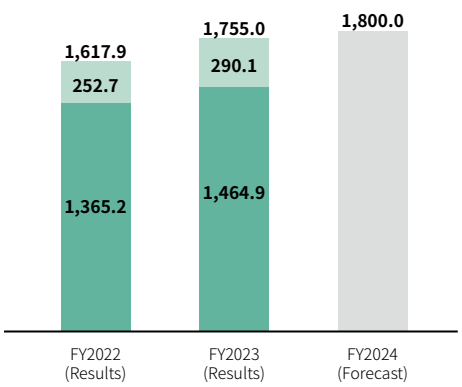
Business Strategy

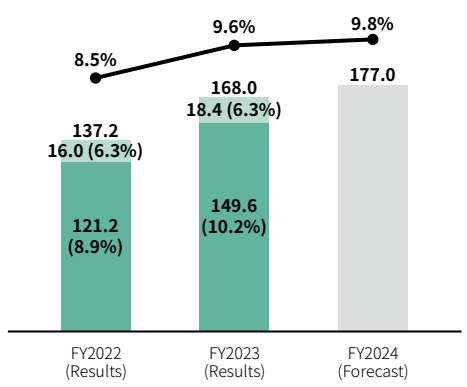
Revenue

(Billions of yen)



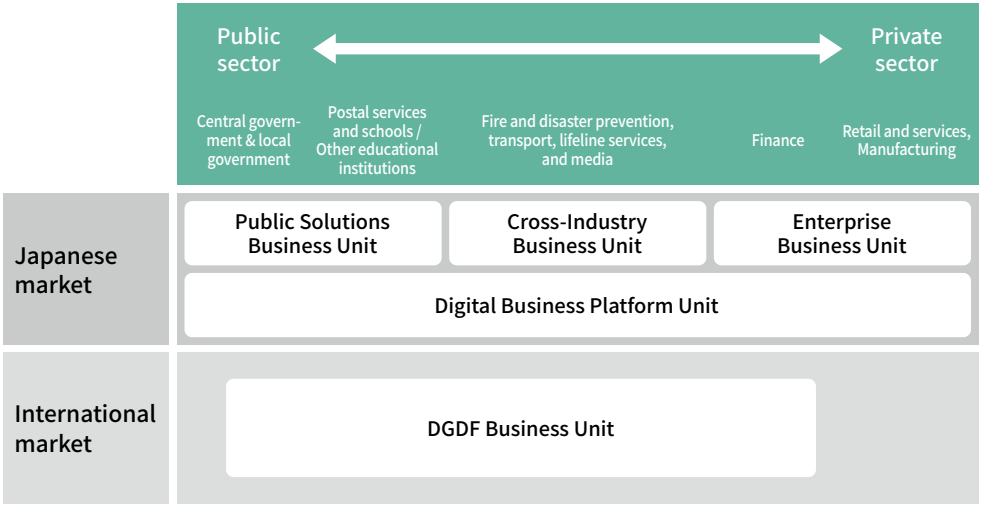
Adjusted OP* Ratio

(Billions of yen) (%)



* OP=Operating profit

Organizations and Business Segments / Domains



IT Services in Japan

Business Overview and Vision

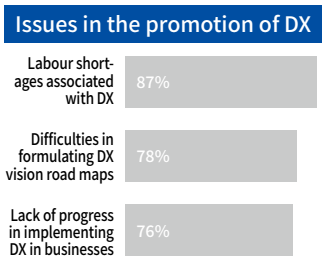
Today's society and business environment are said to be in the era of VUCA,* and digital transformation (DX) is required to make social and corporate activities sustainable. DX is defined as the transformation of products, services, and business models in parallel with the transformation of operations, organizations, processes, and corporate culture and environment, to establish a competitive advantage in responding to rapid changes in the business environment by utilizing data and digital technologies based on the needs of customers and society. NEC strives to not only underpin the activities of its customers and greater society through the provision of IT services but also to realize digital reforms in both society and industry, by leveraging its expertise and resources to their maximum potential.

* VUCA: Volatility, Uncertainty, Complexity, Ambiguity

Market Conditions and Social Issues

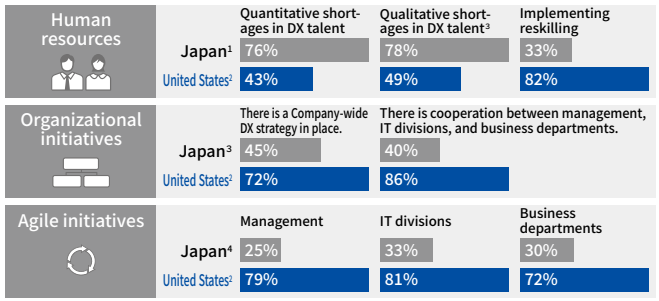
The IT market in Japan continues to experience demand for IT due to the digitalization of society and businesses, backed by changes in the business environment such as accelerated cross-industry collaboration, active reorganization across industries, and technological advancements including AI, the Internet of Things (IoT), and 5G networks. In the enterprise domain, IT investments are shifting from traditional IT services to cloud-based versions of existing systems and support for digitalization of operations. In the future, increasing the introduction of cloud-based services utilizing digital technologies is expected to be seen as a way to expand business. In addition, with the digitalization of government, and vision for a Digital Garden City Nation, the digitalization of society as a whole has become imperative. Compared to their global counterparts, however, few Japanese companies have successfully implemented DX, and there are some issues that need to be addressed in the promotion of DX. Examples of such issues include a shortage of human resources with DX expertise (in terms of quantity, quality, and re-skilling), difficulties in formulating concrete road maps, and the lack of progress in implementing DX in actual business operations. This situation has led to an increase in demand for DX adoption support that integrates upstream consulting and downstream implementation and operation.

Issues in Implementing DX

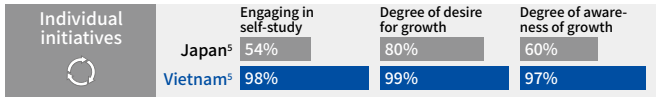


Only 14% of Japanese companies stated that they have successfully implemented DX
(compared with 30% worldwide)

Sources: Japan Management Association, Boston Consulting Group



1 N=533 2 N=369 3 N=534 4 N=527
Source: DX White Paper 2021, Information-technology Promotion Agency (IPA)



5 Many countries N=1,000 Source: APAC Labor Market Status Survey 2019: "Growth Through Work," Persol Research and Consulting

NEC's Strengths

- Expertise and customer base developed over many years: We have experience in mission-critical system operations in the public domain and an average of more than 25 years of business with major customers in the enterprise domain.
- Execution capability to strongly promote customers' DX from upstream to downstream: We have the systems and resources to provide agile solutions from upstream consulting to downstream processes such as delivery, operation, and maintenance.
- Powerful DX use cases: NEC uses itself as a testing ground for DX to drive transformation and improve its competitiveness by independently conducting cutting-edge demonstrations while accumulating powerful use cases that can be provided to customers.
- Abundance of DX talent: We have approximately 8,000 employees with DX expertise, as well as a development program to secure 10,000 employees with DX expertise by 2025.

(As of March 31, 2023)

Business Growth Strategies

- Expansion of value creation that is consistent from consultation to delivery: We take an upstream consulting approach to the management challenges faced by our customers and work in tandem with them as a partner in resolving the issues concerning their management agendas. We provide consistent value not only in our overall planning process for resolving issues but also in the implementation of specific plans and proposals based on our expertise in each industry, our strong delivery capabilities, and post-implementation operation and support. NEC's partnerships with leading companies in each industry are positioned as strategic partner programs to create the required model cases in each industry, which will be incorporated into our menu of services and widely deployed.
- Business model reform via common platforms: Products, services, and assets that were previously developed in an individually optimized manner for each industry and customer are now being developed as a common platform in the form of a menu of services based on NEC's own technologies and expertise. This will not only enable the rapid delivery of value to customers but also facilitate a business model shift from the traditional piecework pricing method to a value-pricing method, which will increase the potential for repeat business, thereby improving profitability.
- Ongoing strengthening of alliances geared toward improving competitiveness: In response to diversifying demands for public cloud, private cloud and on-site systems, NEC not only has these various environments in-house but is also strengthening its competitiveness through global IT partnerships. Specifically, NEC is collaborating with Amazon Web Services (AWS), Microsoft, Oracle, and Red Hat to provide IT environments tailored to customer needs.
- Contributions toward the digitalization of government: NEC will leverage its years of experience and know-how to standardize and streamline public administration services, improve convenience for the public, provide a digital infrastructure, and expand the use of the Individual Number Card (My Number Card). In

the digitalization of government, a high level of security and quality is required, as well as speed, flexibility and productivity for the implementation of systems, and we will ensure an optimum balance of such factors in compliance with government guidelines. In Denmark, a country at the forefront of government digitalization, NEC is working with KMD, a company that has supported such efforts, and is actively proposing solutions based on its expertise in breaking down the digital divide and resolving digitalization issues.

- Seizing of new business opportunities: In addition to expanding existing businesses, NEC is working to seize business opportunities in new domains. Specifically, we aim to achieve business growth through the Digital ID business for airports, buildings, and hotels using biometric authentication technology; the Smart City business to realize the Digital Garden City Nation concept; the Mobility business that coordinates transportation infrastructure and mobility to realize a safe and secure transportation society; and the Digital Process Innovation business that provides advanced business process outsourcing services by digitizing business processes.

Digital Government and Digital Finance

Business Overview and Vision

The use of IT in all areas of administration and finance will reduce administrative burden, increase convenience, simplify and streamline administrative tasks, and enable efficient and effective operations. Digitalization promotes collaboration and integration between various industries, but collaboration between government and finance, in particular, is expected to lead the way in this regard. NEC is developing its Digital Government Digital Finance (DGDF) business through three European companies it has acquired: NEC Software Solutions UK (SWS) of the United Kingdom, KMD of Denmark, and Avaloq of Switzerland. Leveraging our highly reliable digital technologies, we will build a government and finance infrastructure that is transparent and fair to use and promote well-being in society through consumer-centered government and financial services tailored to individual needs.

Our Three Acquisitions

NEC Software Solutions UK Limited (SWS)
(formerly Northgate Public Services Limited)
SWS is an IT services company based in the United Kingdom. The company features a strong customer base and a shared business platform that can be used for a variety of sectors, including policing, tax collection, social security benefits, and public housing management.

KMD Holding A/S (KMD)
KMD is Denmark's largest IT company with a strong customer base, wide-ranging platforms, solutions for both financial and insurance sectors, and a proven track record in user experience and analytics, all of which it has leveraged to support digitalization of the government.

Avaloq Group AG
The growth of Swiss company Avaloq is partially driven by recurring business from the provision of software via a SaaS-based business model. The company holds the top market share in wealth management software in Europe and ranks second in Asia Pacific.

Market Conditions and Social Issues

In several European countries, digital IDs are already being used for authentication, identity verification, and as a link between government and financial institutions for assessing eligibility for various services. In addition, the area of digital finance is expected to experience long-term market growth due in part to the use of digital technology in the provision of sophisticated asset management advice services and the expansion of the base of users of asset transactions. Despite the prospect of such business opportunities, there are also issues to be addressed, such as Japan's aging population, widening regional differences in administrative services due to the digital divide, increasing wealth polarization and disparity, and the need to reduce CO_2 emissions to mitigate global warming. In particular, the mitigation of global warming requires managing electricity supply and demand and the shifting away from fossil fuels, while at the same time creating new social mechanisms that make full use of IT. The transition to a green society based on digital technology is one of NEC's key areas of focus. Given that administrative and financial systems operate for a long time, social responsibility and reliability are necessary to fulfill their roles.

NEC's Strengths

- Global customer base and proven track record: NEC provides tax collection and social security benefit systems to 45% of local governments in the United Kingdom; has over a 50% market share in administrative solutions for local governments in Denmark, a leading country in e-government; and boasts the No. 1 market share in Europe and No. 2 market share in the Asia-Pacific region in core banking systems for wealth management.
- Superior technologies: AI, biometrics, security, advanced system architecture, and an extensive menu of government-oriented DX services

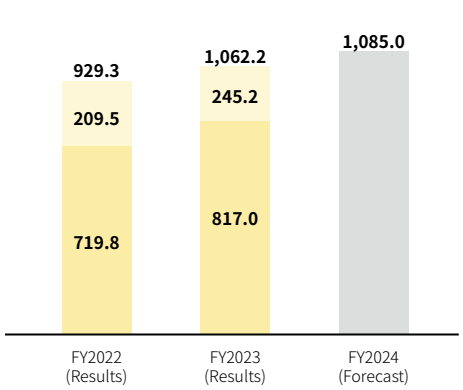
Business Growth Strategies

- Geographical expansion of business areas: UK-based SWS will expand its business to Commonwealth countries other than Australia and New Zealand, where it already operates. Denmark-based KMD is not only expanding its business within Europe, primarily in Scandinavia, but also further afield to Asia-Pacific regions and Japan, where NEC has a strong presence. Swiss company Avaloq will expand the value it provides to the Japanese market by not only proposing solutions independently but also by providing innovative solutions in the wealth management sector through a strategic partnership with BlackRock, Inc.
- Business portfolio transformation: The SaaS ratio of the three European companies exceeds 70%, and we intend to further improve this level. At the same time, we will accelerate our shift to the software business to improve profitability. We will also transform our business portfolio through carve-outs of low-profit businesses and bolt-on M&As to expand our business domains and customer base for business growth.
- Improvements in development and operational efficiency: We will strengthen our competitiveness through the pursuit of cost synergies, including procurement throughout the NEC Group; selection and concentration; and mutual utilization of assets. In particular, we will improve profitability by increasing the rate of offshore and nearshore software development, which is approximately at 40%, to 55% during the Mid-term Management Plan 2025 period.

Social Infrastructure

Revenue

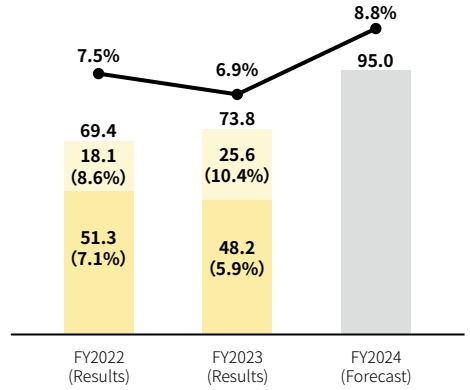
(Billions of yen)



Telecom services
Aerospace and national security (ANS)

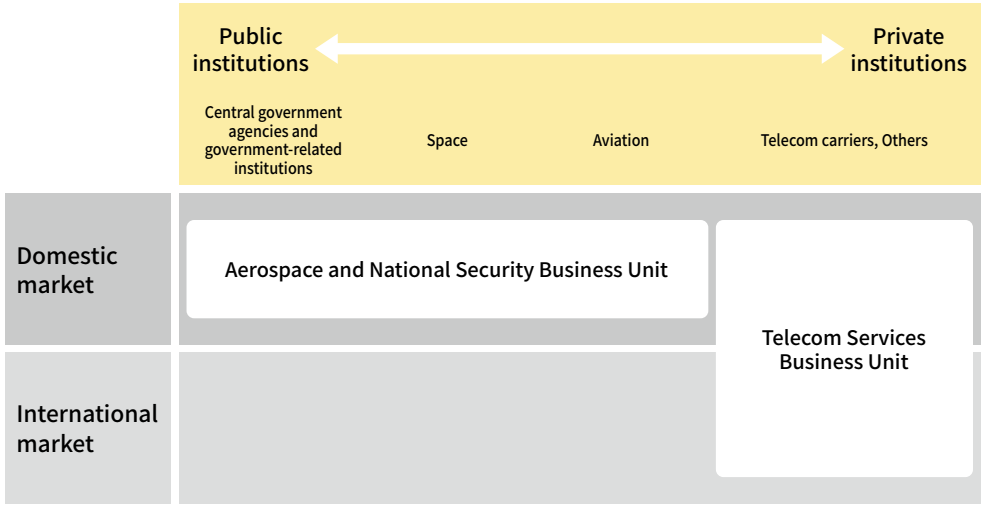
Adjusted OP* Ratio

(Billions of yen) (%)



Telecom services
Aerospace and national security (ANS)
Adjusted OP ratio
*OP = Operating profit

Organizations and Business Segments / Domains



Telecom Services

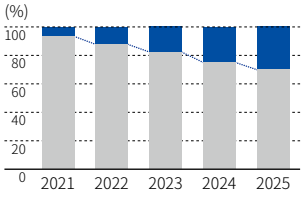
Business Overview and Vision

NEC has been engaged in the telecommunications business since its founding, including the provision of fixed-wired and wireless telecommunications equipment for telecom carriers, operation support system (OSS) software for equipment management, and business support system (BSS) software for customer support. We also provide service platforms for end-users and submarine cables for international communications, underpinning the networks that are the foundation of the digital society. The provision of a high-speed, high-capacity, low-latency telecommunications environment enables a wide range of entities—from individuals to businesses and government agencies—to make extensive use of information and contributes to a society that connects people with their community without stress. By facilitating deep connections between people and their tangible and intangible surroundings, we contribute to richer and brighter lives for everyone, anywhere, at all times, through enhanced access to information, new DX services, and disaster prevention.

Market Conditions and Social Issues

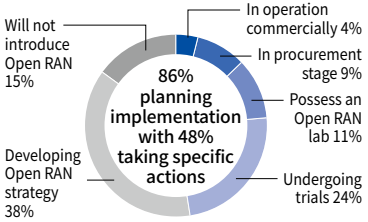
In recent years, network connections have gone beyond the scope of smartphones and computers to include a variety of sensors, smart meters, home appliances, automobiles, medical devices, and other items, leading to a continued increase in data traffic throughout society. Along with the increase in data traffic, the increase in electricity consumed by telecommunications devices has given rise to a need for countermeasures to address the resulting environmental burden. Against this backdrop, telecom carriers are required to operate in an efficient and flexible manner, and demand is increasing for solutions that enable efficient accommodation of data traffic and network construction, flexible network operation, and carbon neutrality. In addition, due to the sluggish growth in telecom revenues, carriers are moving to expand revenues in non-telecom areas. Networks are the infrastructure that supports society, and the importance of secure communications is increasing from the perspective of economic security. As such, policy coordination and utilization are becoming increasingly important.

Trend in the Global Base Station Market

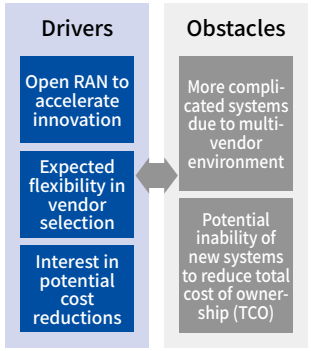


Source: NEC estimates based on various market reports

Status of Open RAN Development



Source: Mobile World Live, industry survey on Open RAN adoption



NEC's Strengths

- Track record and deep knowledge gained through many years of building network infrastructures: NEC has a proven track record of building and operating mission-critical infrastructure; assets and know-how cultivated over many years in businesses aimed at telecom carriers; and the world's leading market share in submarine cables.
- Wide range of technologies and proposal capabilities: Fixed and mobile networks, advanced optical communications technologies in submarine cables, IT services such as OSS/BSS, and security

Strategies for Business Growth

- Growth of 5G business in global markets and business model shift: Expectations for efficient and flexible network operation are growing in a time of heightened total cost of ownership (TCO) awareness, including with regard to power consumption. To meet these expectations, we will expand our demonstration and commercial projects with a focus on Europe. In terms of network operations, there is a trend toward automation, efficiency, and optimization of network resources, and we will expand our high-value-added solutions to meet the needs associated with this trend. At the same time, we will improve and stabilize profitability by increasing the rate of recurring software transactions, as opposed to our conventional model, which was based on the selling of hardware outright.

NEC's 5G Portfolio

Shift to Open Systems

SMO (Service Management and Orchestration)	SW	Establish operational support systems for mobile networks Streamline and automate operations
5GC (5th Generation Core network)	SW	Create open, virtualized mobile core software to enable flexible services
RAN SI (Radio Access Network System Integration)	SW	Create Open RAN ecosystems assembled with NEC and partners' products Ensure safe and secure mission-critical systems
CU/DU (Central Unit/Distributed Unit)	SW	Create open, virtualized radio intelligent control software Support a wide range of radio units (RUs) through the combination of NEC and partner products
O-RU (Open Radio Unit)	HW	Establish Open RAN radio units (O-RUs) for Massive Multiple Input Multiple Output (M-MIMO) in order to utilize features of 5G Utilize partners to expand portfolio

Measures to Expand and Develop Portfolio

Expand Portfolio

- Revenue expansion in non-telecom domains: Telecom carriers are facing an increasing need to expand revenues in non-telecom areas due to rising TCO and sluggish growth in telecom revenues due to price competition. NEC will co-create new services and expand businesses through DX in non-telecom domains through the synergy of client business knowledge and strategic consulting.
- Seizing business opportunities in the area of submarine cables: The submarine cable market is expected to grow at a compound average growth rate of +3% from 2018 to 2025, due in part to strong capital expenditures by over-the-top (OTT) service providers. The Company will seize business opportunities by differentiating itself from competitors through advanced optical communications technology and its strong presence, especially in the Asia-Pacific region.
- Initiatives to realize future networks: Toward the realization of our Beyond 5G vision and the Innovative Optical and Wireless Network (IOWN) concept, we aim to expand our business on a global scale by advancing our business alliance with Nippon Telegraph and Telephone Corporation (NTT) and gain international competitiveness through joint development and research of products and technologies that will create new value. At the same time, we will contribute to the realization of carbon neutrality in the telecom industry as a whole through power efficiency and renewable energy solutions.

Aerospace and National Security

Business Overview and Vision

The Aerospace and National Security (ANS) business provides ICT solutions, primarily to government agencies, in the ANS domains. Specifically, we provide satellites, radar equipment, secure telecommunications, large-scale mission critical systems, and ground systems for controlling satellites and processing satellite data. NEC's space-related business has developed and manufactured approximately 80 satellites in its 70-year history and has delivered around 8,000 units of equipment to approximately 300 satellites worldwide. We contribute to solving social issues by utilizing data obtained by satellites for disaster prevention and infrastructure management. Leveraging our advanced technological capabilities cultivated over many years, we contribute to creating a safe, secure, fair and efficient society while protecting people's prosperity.

Market Conditions and Social Issues

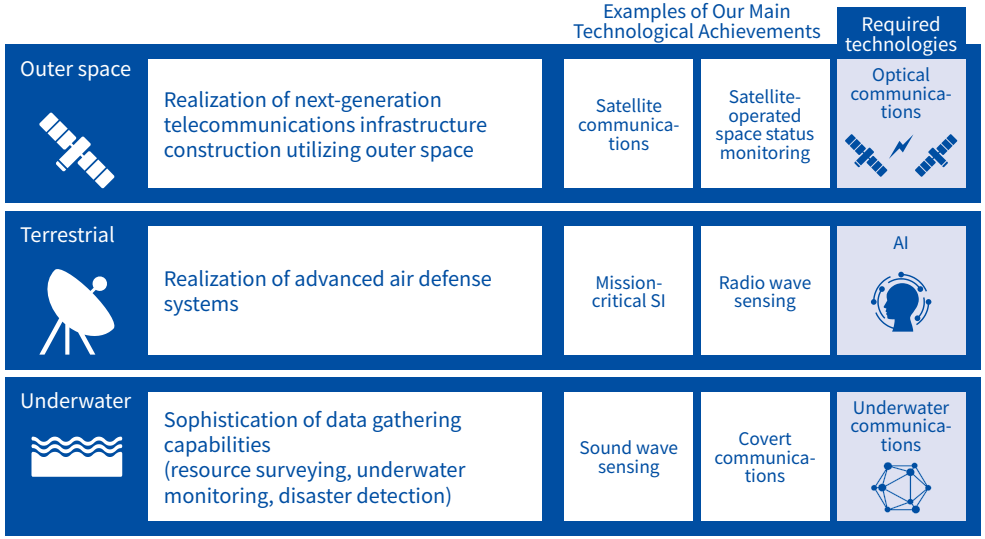
As global political and economic conditions continue to change dramatically, there is growing awareness of national security, and the importance of security-related domains, including communications and disaster monitoring for disaster prevention, is increasing. Under these circumstances, in the field of telecommunications, the amount of data that can be acquired in orbit is increasing due to the higher resolution of sensors on observation satellites, and there are high expectations for deep space optical communications technology as a means of improving the speed of real-time communication between outer space and Earth. In addition, understanding the circumstances surrounding earthquakes, tsunamis, flooding, landslides, forest fires, and other disasters is indispensable in the monitoring of such disasters, as well as for rapid recovery and damage limitation. Satellites orbiting the Earth at an altitude of several hundred kilometers have the advantage of being less susceptible to disasters. Satellites are required to grasp the disaster situation over a wide area, collect, analyze, and evaluate various information through data communications in space and between space and the ground, and quickly transmit this information to those who need it. In the field of aviation, the ever-increasing demand for transportation has led to overcrowding at major airports and on major air routes, reinforcing the need for efficient and safe navigation. The failure or shutdown of any of the aforementioned systems would have an immense social impact, making it essential for such systems to have the highest level of reliability.

NEC's Strengths

- Track record in operating mission-critical systems: Track record of operating mission-critical systems for ANS over many years
- High technological capabilities cultivated over many years: Advanced communications technologies covering all areas, from the ocean floor to outer space; world-leading biometric, AI, and cybersecurity technologies
- Consistent business structure from development through to manufacturing and operation: Business structure capable of providing integrated services that range from in-house development and design to manufacturing, implementation, operation, and maintenance

Strategies for Business Growth

- Realizing a safe and secure society by making extensive use of AI from outer space to the seabed: As national and economic security becomes increasingly important, NEC will make broad use of the potential of all areas between the seabed and outer space, to realize a safe and secure society. Specifically, we will build next-generation communications infrastructure in space utilizing satellite communications, satellite operations, and space situational monitoring. We will also advance air defense systems by applying technologies such as mission-critical SI and radio wave sensing, a field in which we have more than 50 years of experience, and undersea resource survey, surveillance, and disaster detection by utilizing technologies such as sound wave sensing and covert communications.



- Contribution to transformation in the aviation industry: NEC will utilize its assets such as air traffic control and radar technologies, airport airline systems, and its menu of DX services to accelerate policy proposals and measures, strengthen partnerships, and contribute to enhancing the international competitiveness of the aviation industry as a whole.
- Improvements to profitability through a reduction in the number of unprofitable projects: We will continue to strengthen project management through a special task force, regularly check and analyze the status of projects via a third party, promote learning opportunities to improve engineering capabilities, and refine processes. Furthermore, we will commercialize the R&D elements of projects that involve R&D, give advice to customers on business practices, and strengthen risk analysis at the proposal phase for world-first and industry-first projects. Through these measures, we will reduce the number of unprofitable projects and improve profitability by thoroughly managing risks according to the characteristics of each project.