Japan - Bulgaria Business Forum

# Introducing NEC and its R&D

June 24, 2025 Koichi Funaya, NEC Laboratories Europe GmbH



# **Corporate Profile**

# Profile

# NEC at a Glance



# 125 years of history and transformation

# Moving Beyond DX in Our Third Era

### 1899

The first era

# Telecommunications equipment

NEC was founded as the first foreign-affiliated venture company in Japan.

1977

The second era

# **C&C** Computers & Communications

NEC foresaw the internet-centric world of today and became one of the top five companies in the world in the areas of computers, communications, and the semiconductors that connect them.

# 2013

The third era

# **Social value innovator**

# DX & AI

- 2019 DX offerings and common platform
- 2020 Strategy consulting approach
- 2021 Global alliances
- 2022 Expansion of DX business
- 2023 Centralization of DX functions



# Research and Development



### **Our Business : IT Services Business**

Digitalization of Public Administration and Finance

# Realization of a Well-Being Society

For government institutions, NEC provides administrative systems and provide solutions mainly in the UK and Denmark, and for the financial sector, NEC is now developing a core banking platform, focusing on the wealth management area where market growth is expected in Switzerland, Europe, and APAC.

By securely utilizing increasing amounts of data, NEC aims to enable people around the world to enjoy a variety of administrative and financial services fairly and efficiently, regardless of time or location.



### **Our Business : Social Infrastructure Business**

**Optical Inter-satellite Communication** 

# Real time connection from space to earth

NEC contributed to the world's first successful bi-directional optical inter-satellite communication experiment in 2005. NEC and Japan Aerospace Exploration Agency performed world's first successful transmission of huge volume mission data using 1.5 µm optical inter-satellite communication in 2025.

Compared to radio waves, optical communications in space enable high-capacity communications, and therefore, it is expected to create a communications network that can be accessed from anywhere in the world regardless of geographical restrictions. NEC will build next-generation communications technologies by integrating NEC's technologies.



### **Our Business : Next Pillar New Businesses**

### Adaptive Financing

# Accelerating Social Resilience new-gen Financial Mechanisms through IT

Digital twins will visualize the ROI of disaster prevention solution, such as the cost of raising the river embankment. This technology will encourage financial institutions to do risk assessment and design financial product like non-life insurance, ESG bond, etc. NEC is hoping that this will accelerate investment into adaptation and alter our society more resilient toward the big climate change.

### CropScope

# More environment-friendly and profitable farming using Al

CropScope, an agricultural ICT platform which provides farming advice and harvest forecasts by AI-based visualization of field conditions has reduced irrigation and increased yields in large-scale farmland tomato cultivation in Europe in 2023. We will work to optimize the entire value chain in food and agriculture.





NEC \Orchestrating a brighter world

# The Global NEC Network

254 group companies doing business in more than 50 countries



# **R&D (Research and Development)**

NEC is highly competitive globally in the areas of AI, communications, and security. Based on these technological capabilities, NEC will quickly adapt to rapidly changing social issues and diverse needs, improve the creativity and productivity of society as a whole, and provide high value-added services and products.

### Organizational Structure

# **NEC** Laboratories

NEC has R&D bases in 7 locations across the world.

### **NEC Laboratories Europe** Creation of solutions and technology through EU projects and implementation activities AI Drug Development **Business Global Bases NEC Oncolmmunity NEC Bio Therapeutics** NEC Bio NEC X **NEC Laboratories America** Support for establishing start-up Development of cutting-edge core company and contributions toward technologies, achieving success

### Israel Research Center

A start-up powerhouse that rapidly creates solutions combining internal and external technologies

### **NEC Laboratories India**

Creation of core technologies and solutions to address the challenges of emerging countries

### NEC's Domestic Research Divisions

Business Development, Healthcare and Life Science Business, and Intellectual Property Management Divisions

Centers of command for NEC innovations

### BIRD INITIATIVE

R&D business in Japan centered on cocreation

### NEC Laboratories China

R&D of network-related (standardization) and digital solutions

### NEC Laboratories Singapore

Co-creation of innovative solutions with local government and customers

# Anticipating Technological Inflection Points

**Our Technology Vision**: We are entering a transformative with breakthroughs in generative AI, quantum computing, satellite networks, and life sciences.



## Accelerate Transformation with AI you can Trust

# Providing trusted AI by accompanying you from concept development to implementation, operation and HR development.



# Significantly enhancing treatment efficacy and patient health outcome.



## **Computational Science**

# Accelerate success: Lower costs, fewer failures and faster market entry





# **Collaboration Opportunities**

At NEC, we define ourselves not just as a technology provider, but as a **Social Value Innovator**, committed to creating solutions that not only drive business success but also contribute meaningfully to society.

Our mission is to **orchestrate a brighter world** by integrating advanced ICT with deep societal insight. We seek partnerships with organizations that share this vision.

Key Areas for Collaboration:

- Al Innovations Co-developing ethical, secure, and scalable solutions for both public and private sectors.
- **Next-Generation Networks** Collaborating on 5G/6G ecosystems to empower critical industries and enable digital transformation.
- Smart Cities & Infrastructure Building resilient, data-driven urban environments that enhance quality of life and operational efficiency.
- Healthcare & Life Sciences Advancing digital health through patient data analytics, remote diagnostics, and AI-powered platforms.
- Horizon Europe Collaboration
   As NEC's European R&D hub, we are actively seeking partners for joint research under EU public funding frameworks.



# **\Orchestrating a brighter world**