

Expert Council on the Development of Digital Infrastructures (DCs, etc.): Interim Report 2.0 (Summary)

- Based on the situation surrounding digital infrastructures, e.g., data centers, and environmental changes therein, the council reorganized future ideal approaches to and directions for the development of digital infrastructures.

Situation surrounding digital infrastructures and environmental changes therein

- Concentration of over 80% of domestic data centers in the Tokyo and Osaka areas; Concentration of the landing stations of international submarine cables on the Boso Peninsula, Shima Peninsula, etc.
- Advancement of next-generation computing platforms and systems, e.g., AI and quantum computing
- Japan's acquisition of a higher position over other Asian countries as the more appropriate location for data centers because of changes in international affairs, etc.
- Higher need for secure carbon-free electricity and promotion of GX in data centers as facilities that consume a large amount of electricity
- Need for the development of digital infrastructures that meet the demand for implementation of digital technology and data processing in regional areas across Japan, among others

Basic approaches

- Digital infrastructures have been developed basically under the leadership of the private sector. However, it is necessary to draw a grand design for the infrastructures targeting the whole of Japan from a medium- to long-term perspective in light of changes in the surrounding environment, share the design among the public and private sectors, and have the public and private sectors work together through sharing roles.

Future directions of the development of digital infrastructures

(1) Development of the third and fourth core hubs that complement and are substitutes for the infrastructures in the Tokyo and Osaka areas

- Strategic development of core hubs as the backbone that bolsters Japan's digital society, not only from the viewpoints of strengthening resilience of the infrastructures in preparation for large-scale natural disasters, etc. and making use of carbon-free power sources but also from the viewpoints of taking Japan's geographical advantage that Japan has a connection with North America and the Asia-Pacific region, etc. and strengthening its function as a hub of international data distribution
- Promotion of enhancement of the hub function, e.g., increasing routes of international submarine cables coupled with efforts to develop core hubs

⇒Promotion of the development in certain areas in Hokkaido and Kyushu

(2) Development of computational resources, e.g., regional decentralized data centers

- Decentralization to appropriate locations of computational resources and data centers that are used for certain purposes in which slow data processing is allowable, including the use of carbon-free power sources
- Installation of multi-access edge computing (MEC) close to the locations where data is generated; Region-based installation of data centers, etc. that integrate data processed by MEC and perform information processing
- Promotion of the development also in view of the architectures under the Digital Lifeline Development Plan
- Realization of a business model called "local production for local consumption" of data and energy also in view of the utilization of all-photonics network technology, which is expected to be commercialized around 2030.

