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### **Modeling and Performance Evaluation of Computer Networks**

The modeling and performance evaluation of computer networks were established as academic disciplines, and the introduction of network design methods based on these basic theories opened up a great way to practically use computer networks. Furthermore, as a place to prove theoretical research results, the construction of networks and the development of advanced information processing technologies using networks were performed, and a wide range of activities were also undertaken, including the development of multimedia applications that applied them.

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### **Ultra-high-speed Packet Network and Network Control Technology**

The ultra-high-speed switching network technology, which is the basis of the broadband Internet, was pioneered worldwide and contributed to the spread of technology through academic, practical, and international standardization. The establishment of a network control method that separates path calculation, design, construction, and operation of a network using a centralized programmable control method for the Internet using an autonomous decentralized control method were proposed and realized.

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### **Automatic Switching Systems**

In place of manual switching, in 1923, the first A-type step-by-step automatic switching system was introduced in Dalian, China. Later, a T-type (Ministry of Communication type) step-by-step automatic switching system using domestic proprietary technology was developed and introduced by the Nara Bureau in 1940, and it continued to support communications in Japan during the entire period of the Showa era.