

# Our Innovation History

In every era, Hitachi has brought innovation to the issues society faces, in step with the economic, social and environmental changes of the times. Beginning with product development and manufacturing driven by independently developed technology, Hitachi has honed Operational Technology (OT) that moves production site equipment and systems throughout the manufacturing process. During periods of high growth, Hitachi engaged in the development of large-scale systems to support infrastructure, and was vigorously involved in the development of Information Technology (IT). What has emerged since is Hitachi's transformation into one of the world's most unique companies, defined by sophisticated OT and manufacturing technology, cutting-edge IT, and products known for high quality and reliability.

Digital technology is fundamentally changing the way the modern world is structured. Based on its strengths in OT, IT, and products, Hitachi aims to help address the issues faced by today's society through its Social Innovation Business, which supplies advanced social infrastructure systems. In this way, Hitachi is contributing to gains in people's quality of life, while helping to realize a sustainable society.

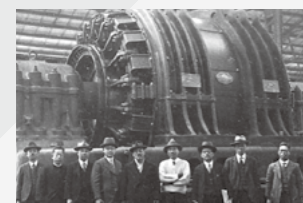
## 1910s- Original manufacturing technology supports Japan's industrial base



**1910**  
Five-horsepower induction motor, Hitachi's first product

## 1933 Steel mill motor operates safely for 32 years

The 7,000-kW DC mill motor with an Ilgner control system to power rolled steel production that Hitachi supplied to the state-owned Yawata Steel Works in 1933 was the most advanced motor of its kind in the world at the time. It set a record of 32 years of accident-free operation.



## 1960s- Control technology and information systems to support social infrastructure in period of rapid economic growth

### Shinkansen high-speed railway technology

In 1959, construction began on the Tokaido Shinkansen with the aim of creating the world's first high-speed railway capable of speeds up to 200 km/h. In 1962, based on the results from testing a prototype train on a model section of track, Hitachi produced the first 0-series rolling stock for the Shinkansen. A total of 212 cars were supplied by 1970. Hitachi was responsible for developing and designing the varied control equipment to support Shinkansen safety. On the passenger service side, in partnership with Japan National Railways, Hitachi also developed the MARS-1 ticketing and reservation systems, Japan's first online system. The system began operating in Tokyo from 1960. The MARS-101 system was later developed for full-scale online operation in 1964. The *Midori no Madoguchi* ticketing and reservation service started in 1965.



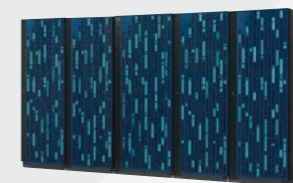
## 1974 HITAC M-series computers developed for large-scale information systems

In the 1970s, Hitachi developed and supplied the high-powered computers needed to satisfy the social demands of the time for new ticket reservation and online banking systems. The IBM-compatible M-180 computer launched in 1974 was well received due to its combination of advanced power and functionality, enabling total systems to satisfy modern requirements.



## 2004 Virtual storage technology for the Internet age

Rising Internet adoption led to rapid growth in the volume of data transmitted worldwide, in turn stimulating demand for safe and efficient technology to store vast amounts of data. Using world-first virtualization technology developed in-house, Hitachi created a way to integrate the capacity of multiple data storage units. This innovation improved the efficiency of data utilization and management significantly.



## 2010s- Digital solutions using the Internet of Things (IoT) and artificial intelligence (AI) contribute to realization of a sustainable society



### Integration of OT and IT at the Omika Works

From its inception, Hitachi began developing electric motor control systems, switchboards and other OT equipment, and refining these technologies with customers in industries such as steel. In 1969, when Japan was experiencing years of fast economic growth, Hitachi set up the Omika Plant (now the Omika Works) as a specialist factory for the control systems business. With the development of IT, Hitachi integrated IT with the advanced OT cultivated over decades to drive the evolution of information control systems for supporting social infrastructure operations such as railways and electric power. In recent years, Hitachi has begun applying IoT to reform production processes, incorporating its acquired know-how into a range of digital solutions that mainly target customers in the manufacturing sector.

