Sustainable economic growth

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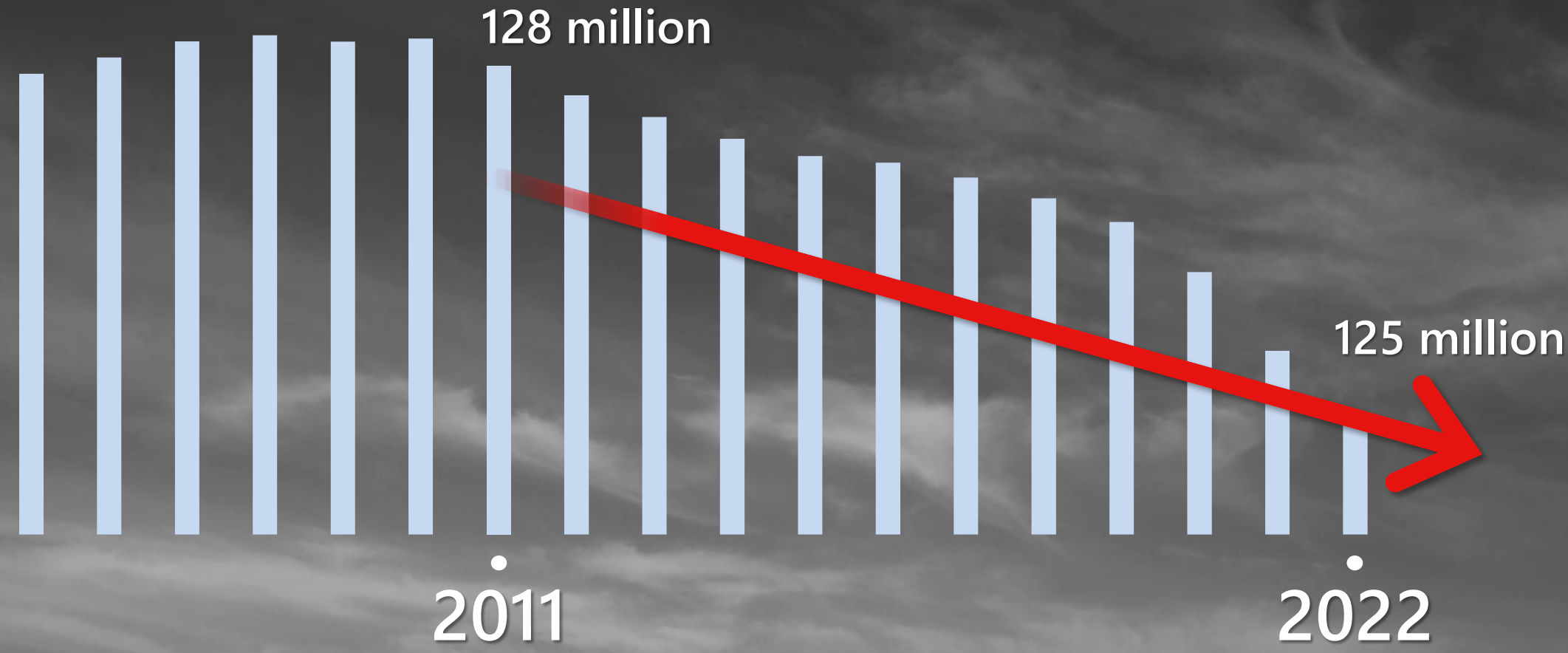
Decline in total population of Japan due to decreasing birthrate



Source: Statistics Bureau, Ministry of Internal Affairs and Communications
Population Estimates (as of October 1, 2022)

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Japan’s power to achieve innovations

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Hitachi’s vision for the future of innovation

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Orville Wright (1871-1948)
Wilbur Wright (1867-1912)

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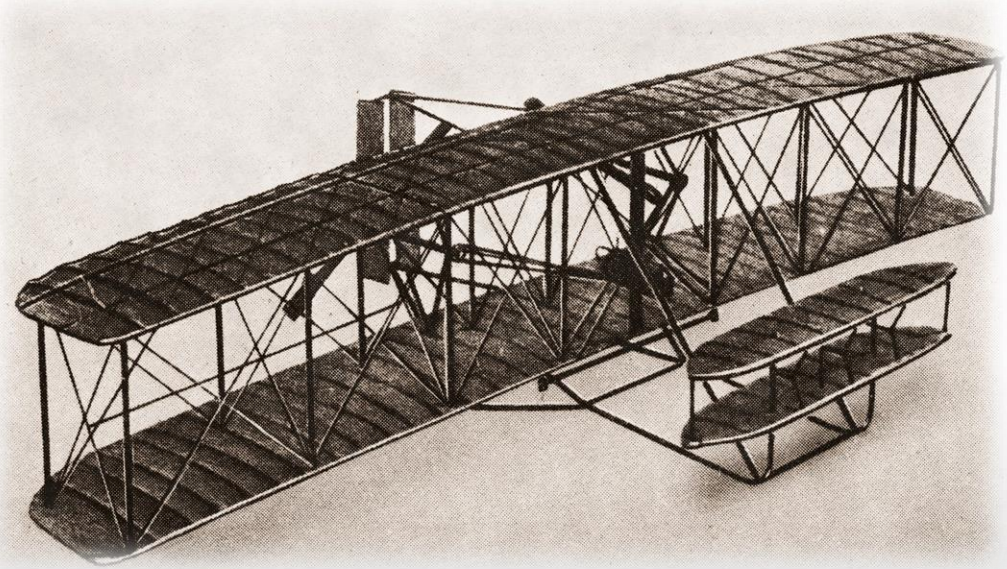

Orville Wright (1871-1948)
Wilbur Wright (1867-1912)

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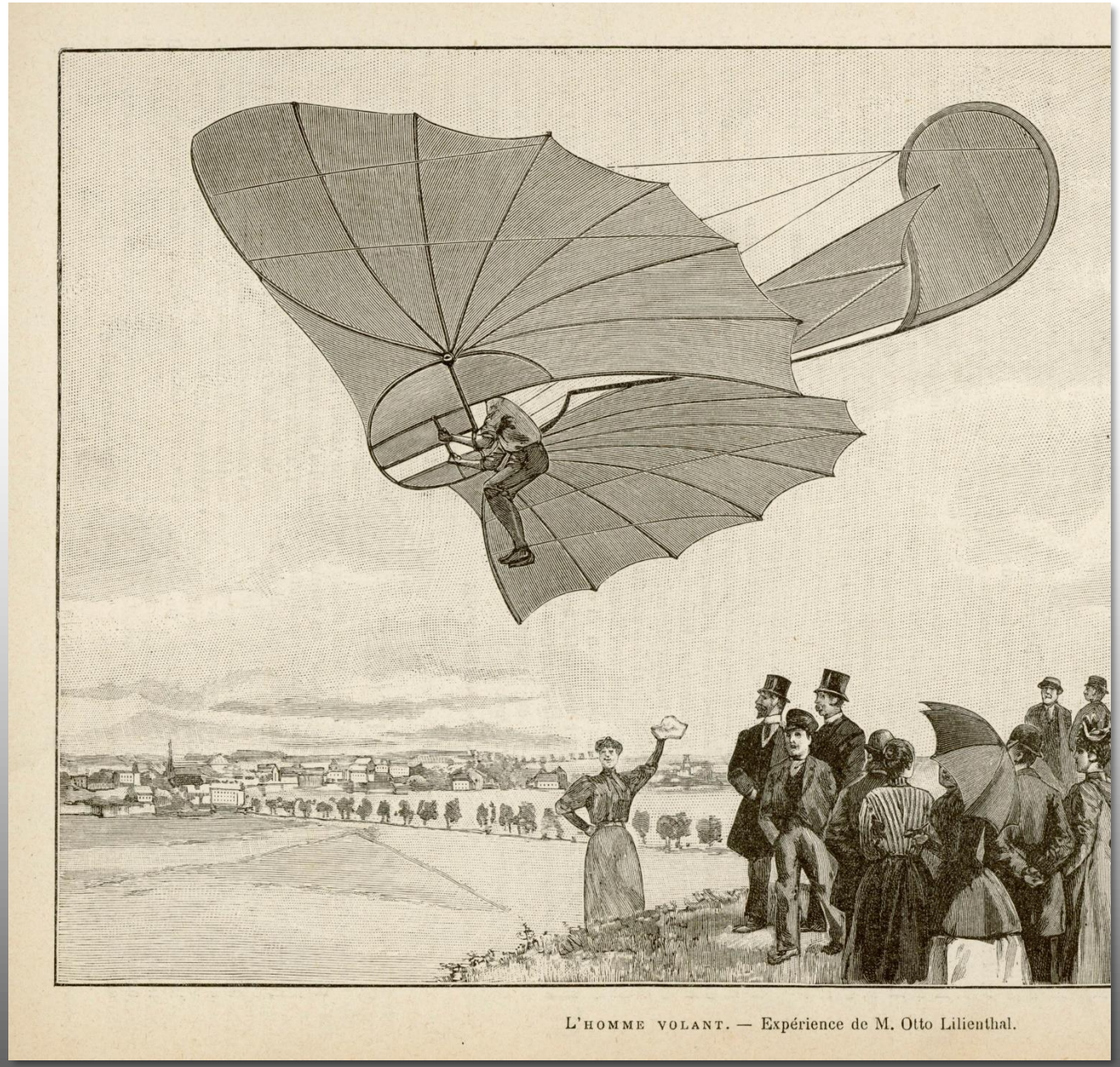
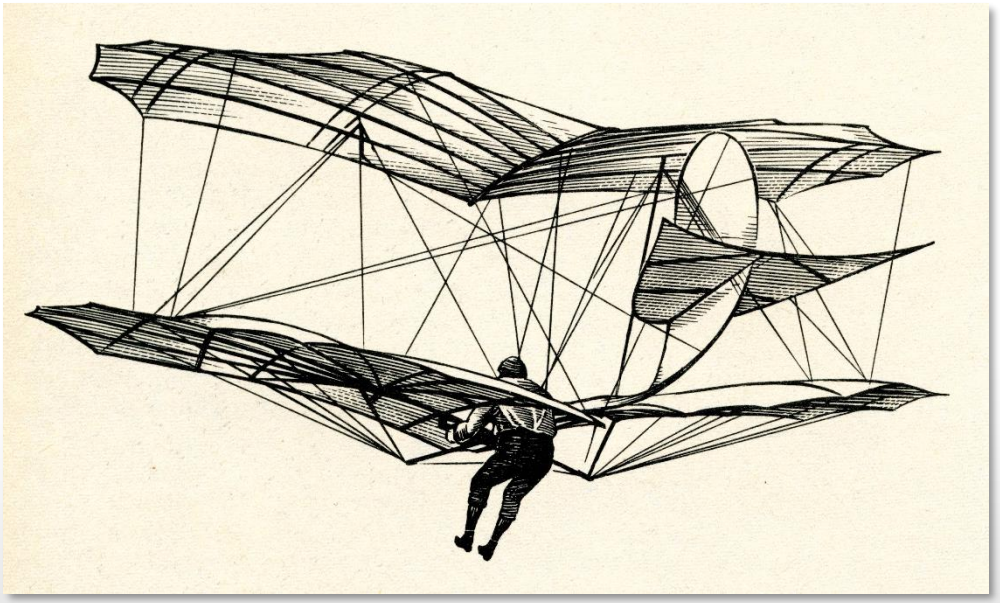
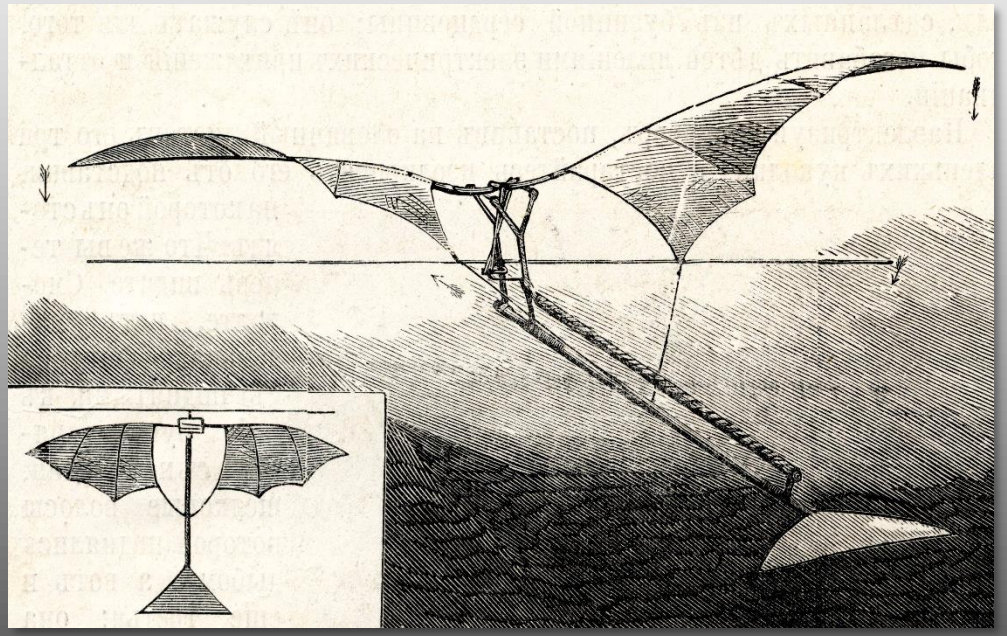


L'HOMME VOLANT. — Expérience de M. Otto Lilienthal.





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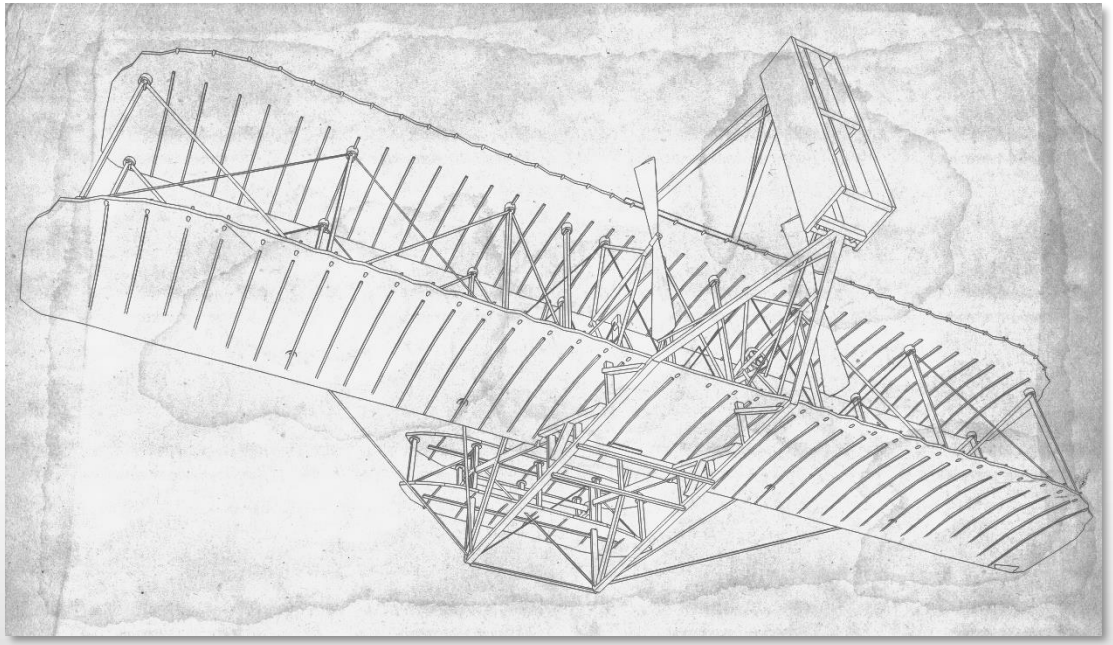

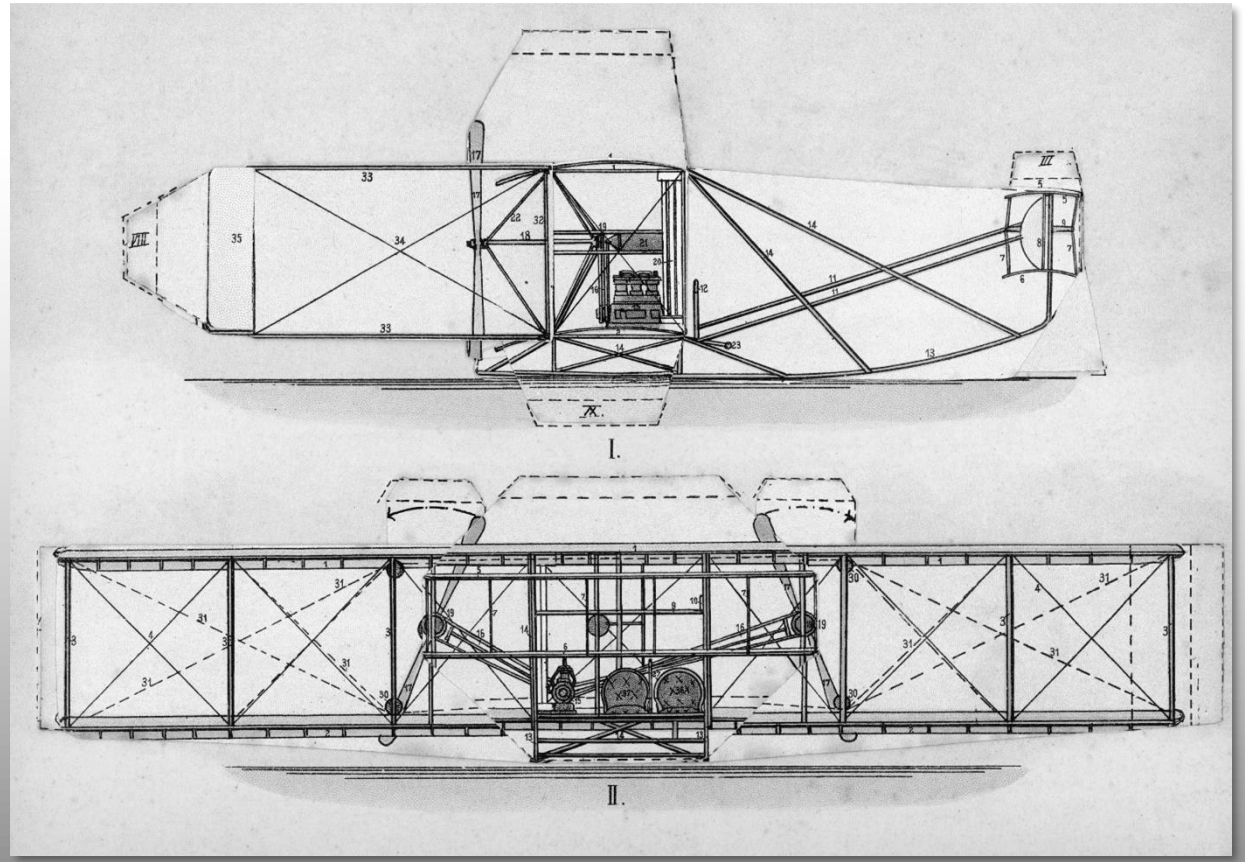

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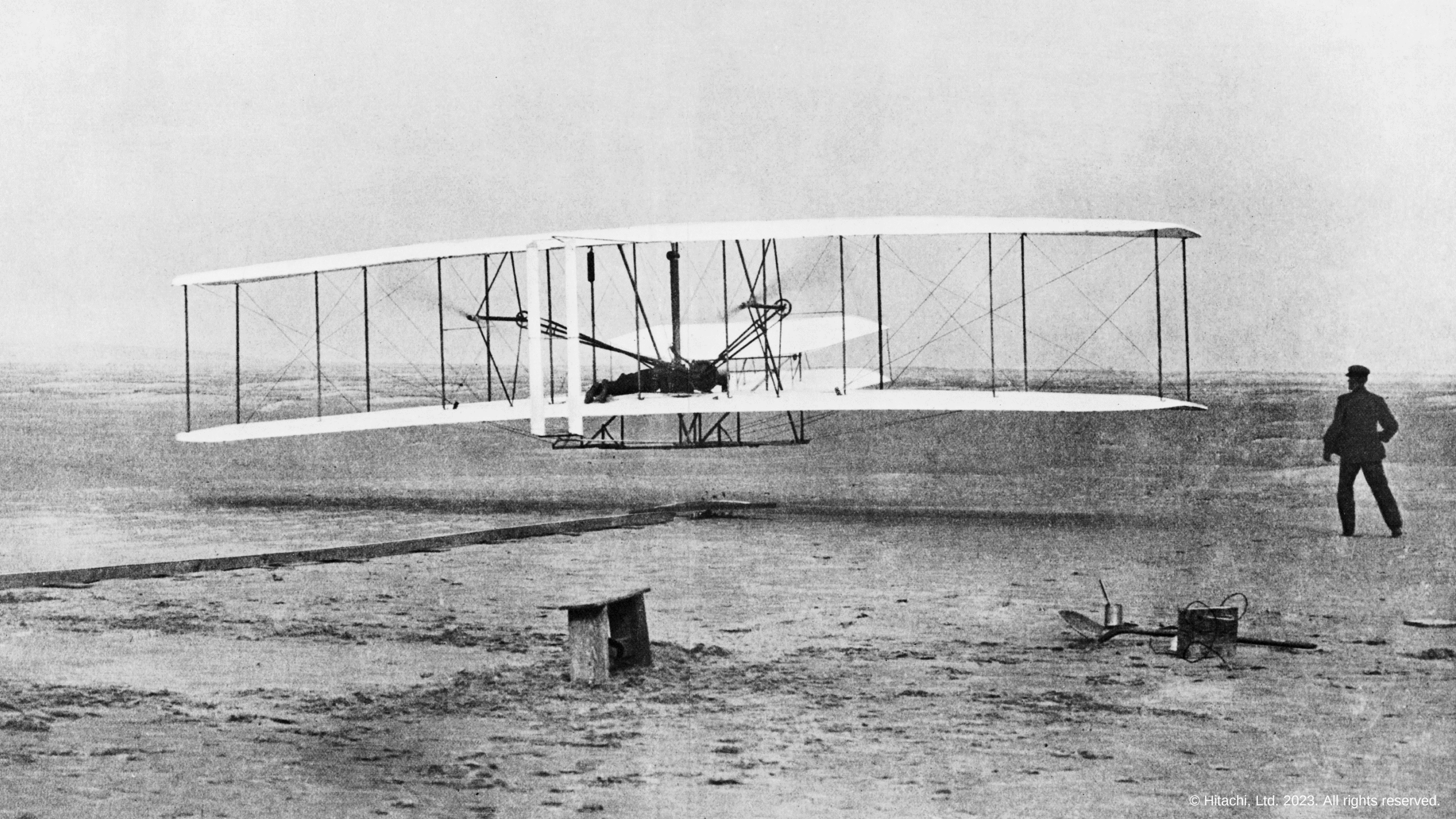

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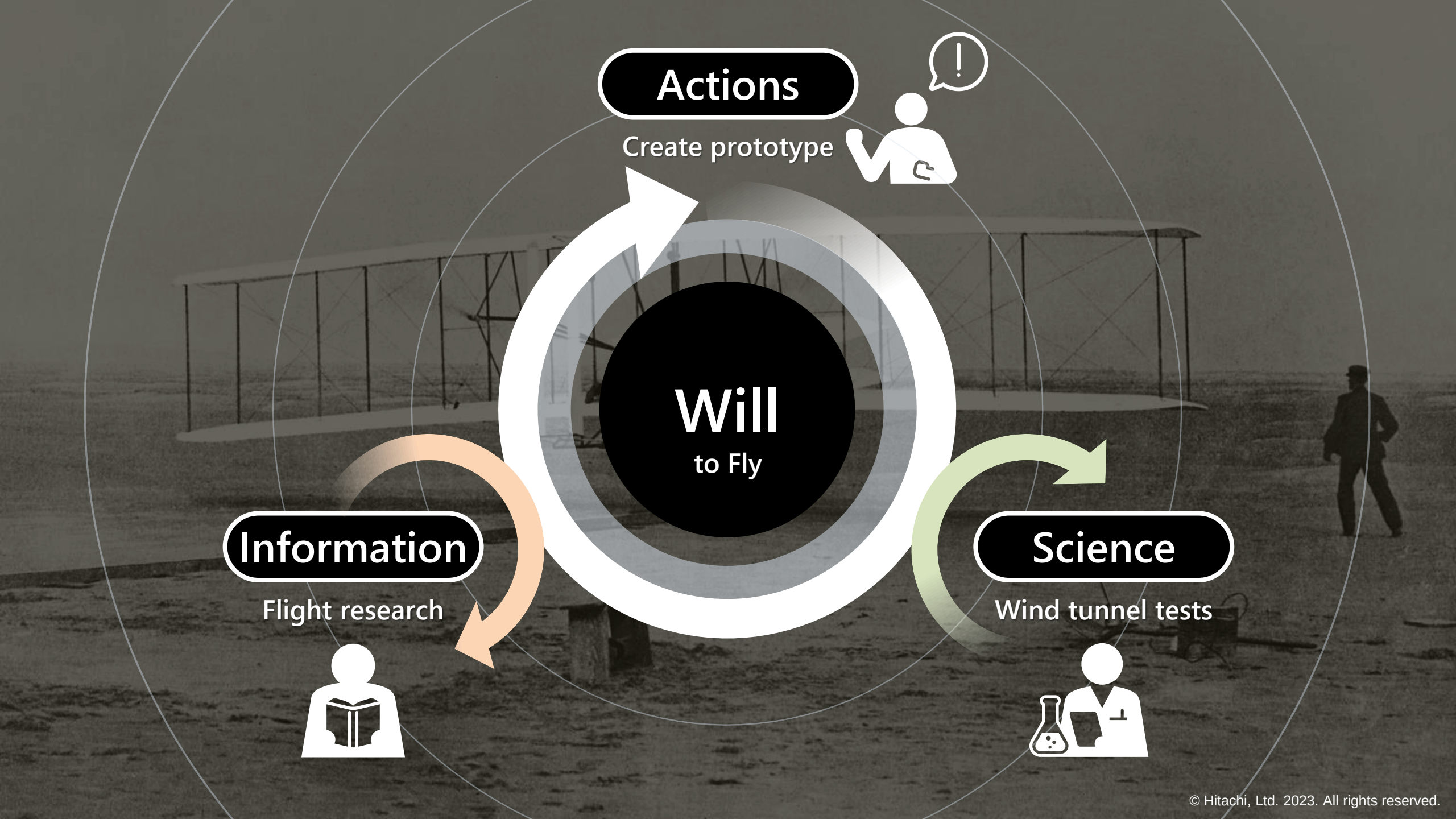

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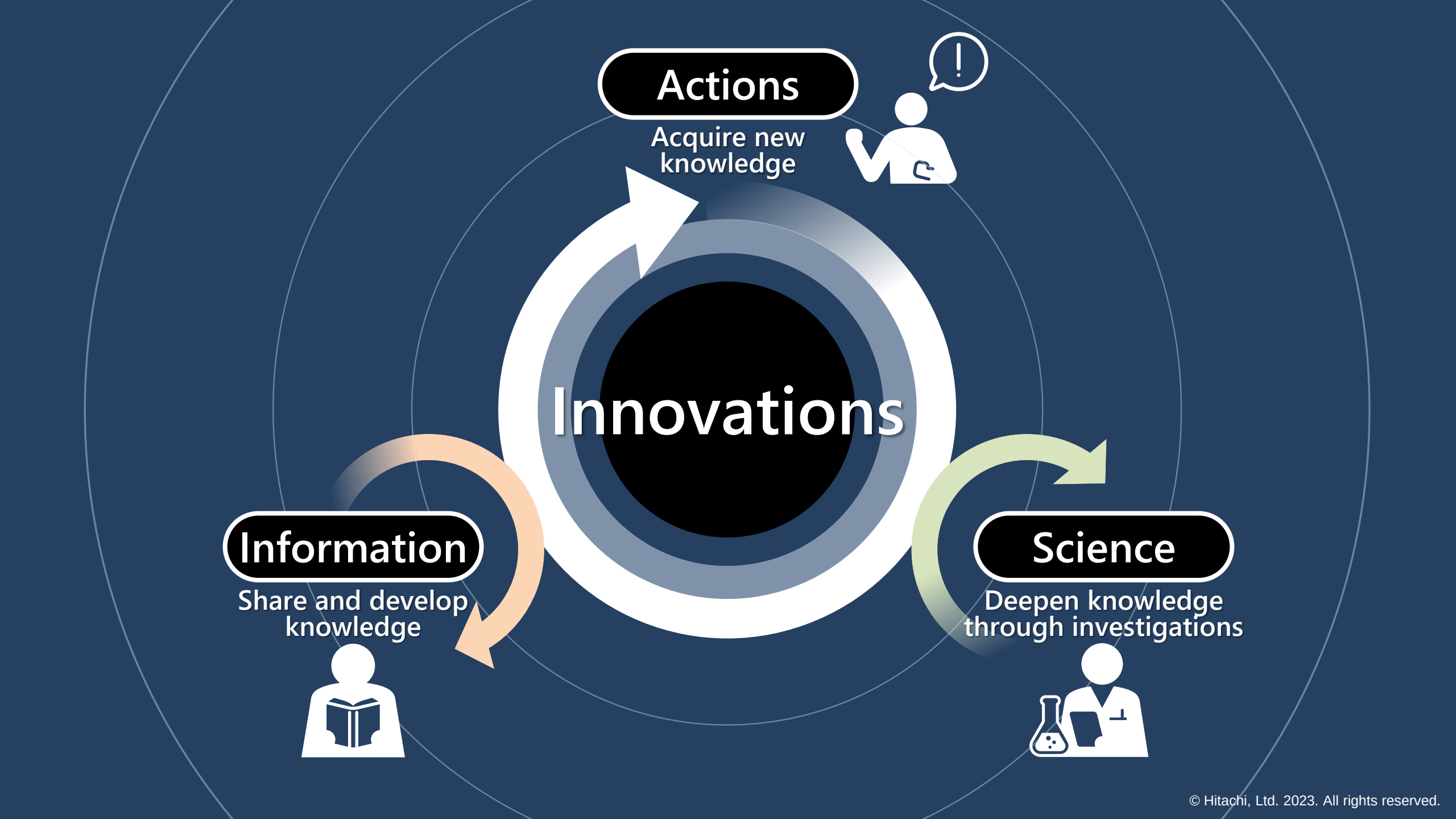

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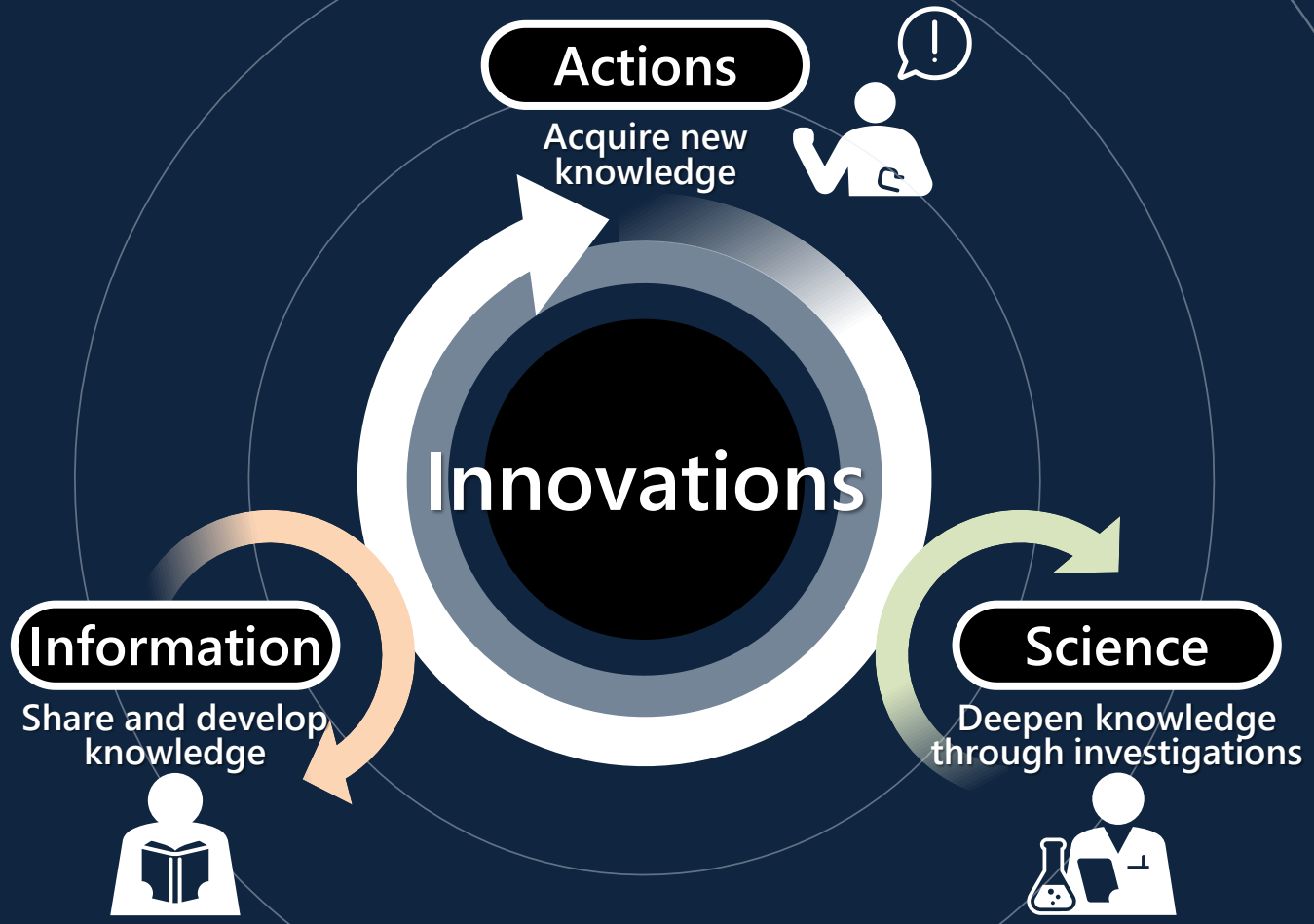
Human evolution through a chain of innovations



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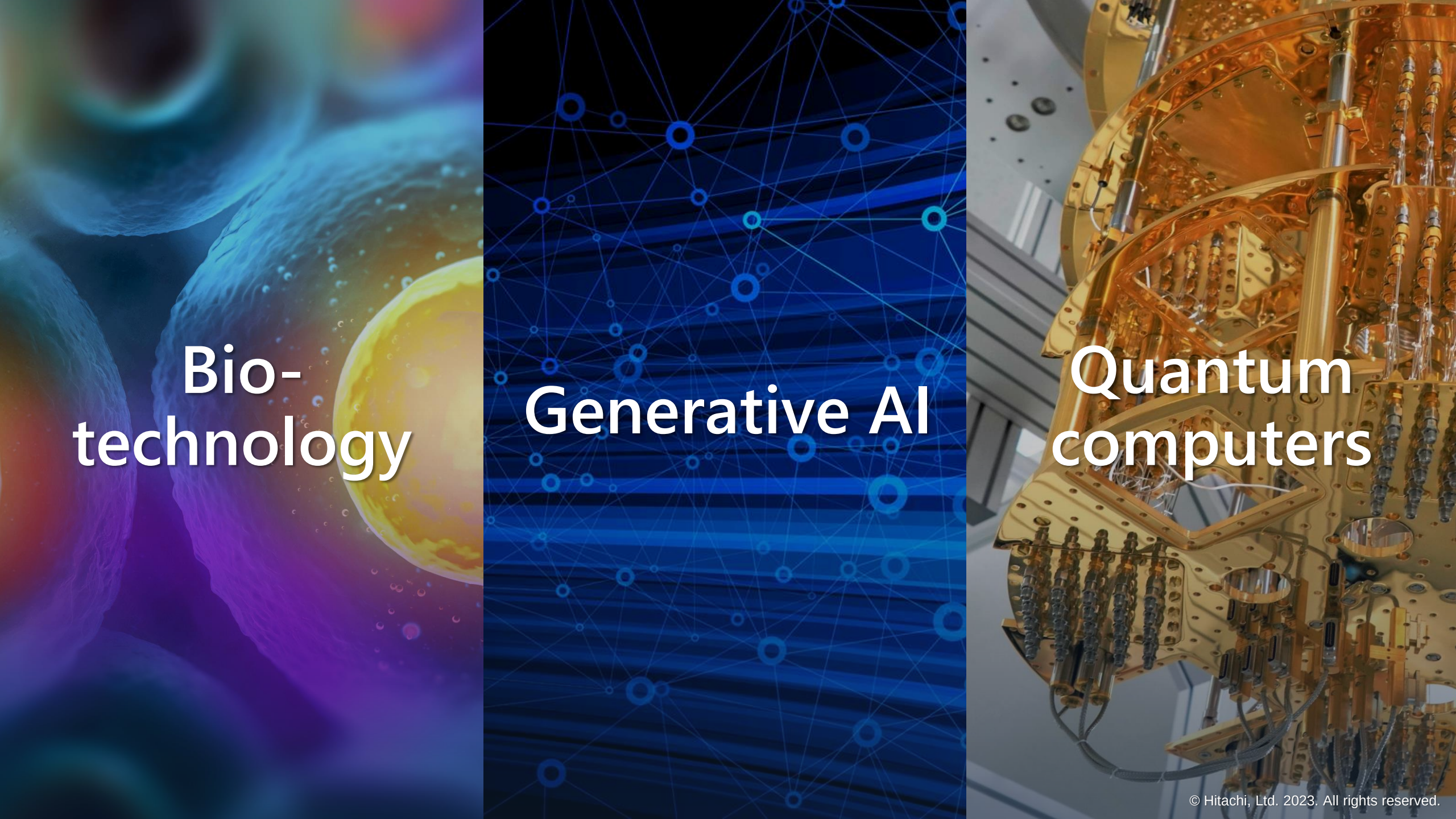

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Actions

Bio-technology

Extend healthy lifespan and improves activity

Information

Generative AI

Gain insights effectively from a large volume of documents

Science

Quantum computers

Discover new scientific findings more quickly

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Generative AI

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Modeling intelligence based on language

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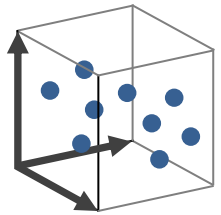
Mechanism of generative AI

Large volumes of knowledge

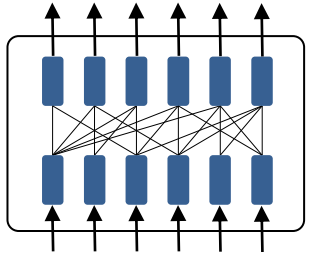
Natural (human) language information

Accumulate

Transformer -based learning



Convert words into vectors
(Recognize multidimensionally)



Rapidly learn word relationships and context
(Iterate word connection predictions)

Large Language Model

Transformer-based large neural networks

Questions

Answers

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The accuracy of the intellectual work improves dramatically when the language model scale exceeds a certain number of parameters

Present ideas and options
even for questions with no clear answers

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Enables the intuitive use of huge volumes of information

Generative AI

Provides powerful assistance in human intelligence tasks and illuminates information that remained hidden in the past

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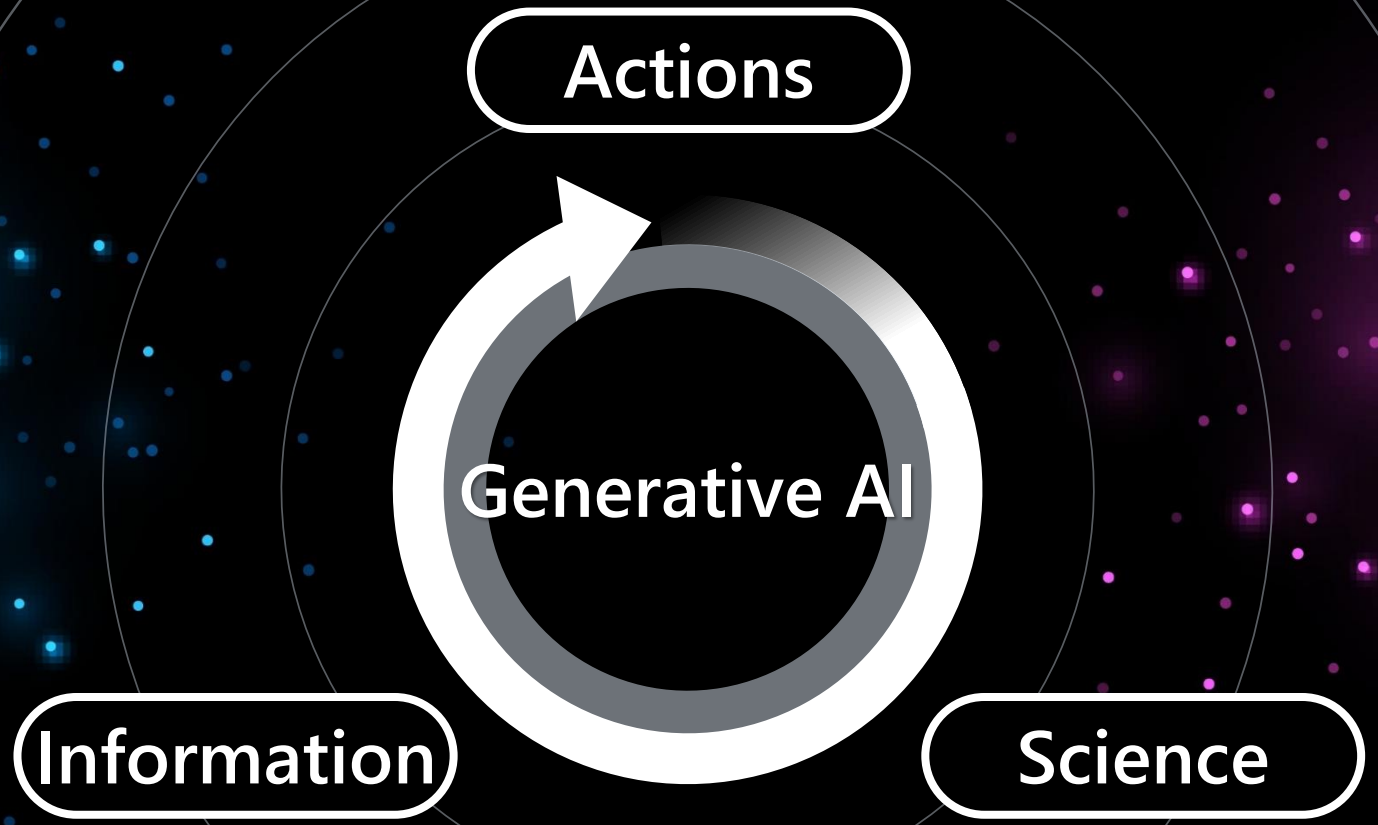
Increasing the power to create innovations



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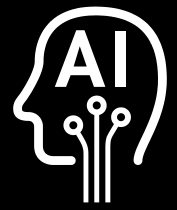

Generative AI draws out the hidden potential of companies

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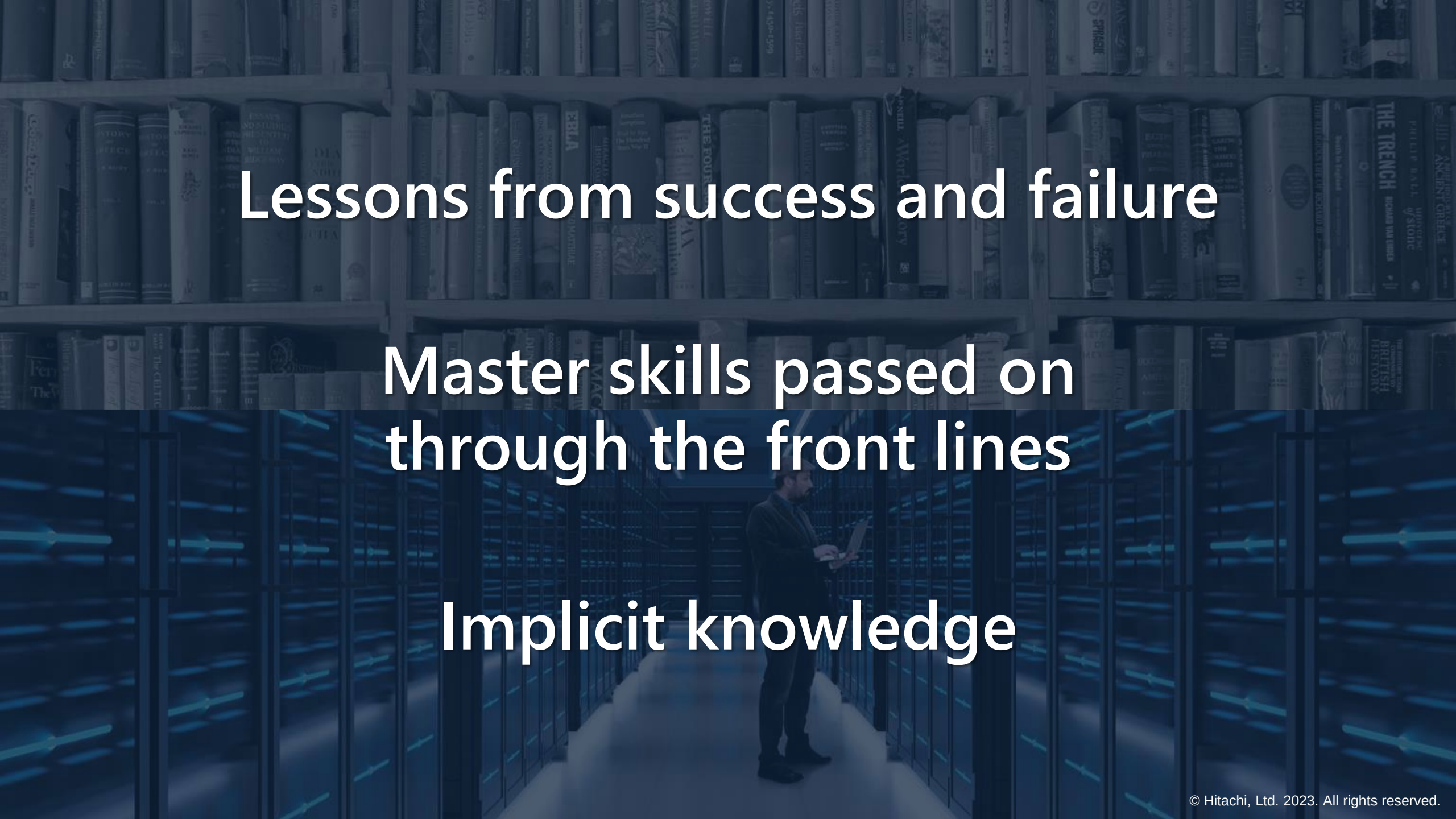

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Accelerating companies' innovations
Contributing to sustainable economic growth

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SEKISUI

Comments from customers

“We want you to deliver more advanced materials even more quickly”

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SEKISUI

Materials Informatics（MI）

Using data and digital technologies to accelerate the development of new materials

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Gather and organize test data from inside and outside the company

Making data easy to use

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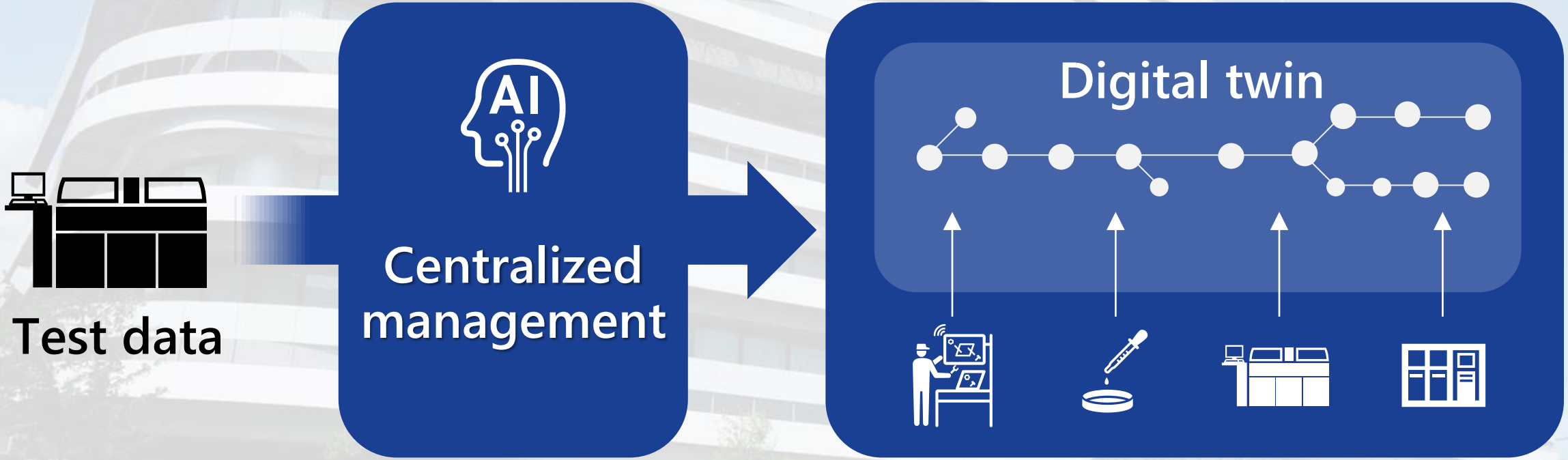
Automatic gathering and centralized management of test data



Build digital twins to conduct tests in a digital space

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Together with
Hitachi's sales staff and engineers,
we are striving to improve the efficiency of data gathering and analysis, and to develop even more advanced materials.

Innovative Informational Intelligence Center,
Advanced Technology Institute,
R&D Center, SEKISUI CHEMICAL
Yoshikazu Masuyama

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Digitize the implicit knowledge and expertise of skilled employees and developers

Draw out the organization’s full potential to create more advanced materials

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Issues in the new era of AI

Reliability Copyrights Ethics

Energy consumption

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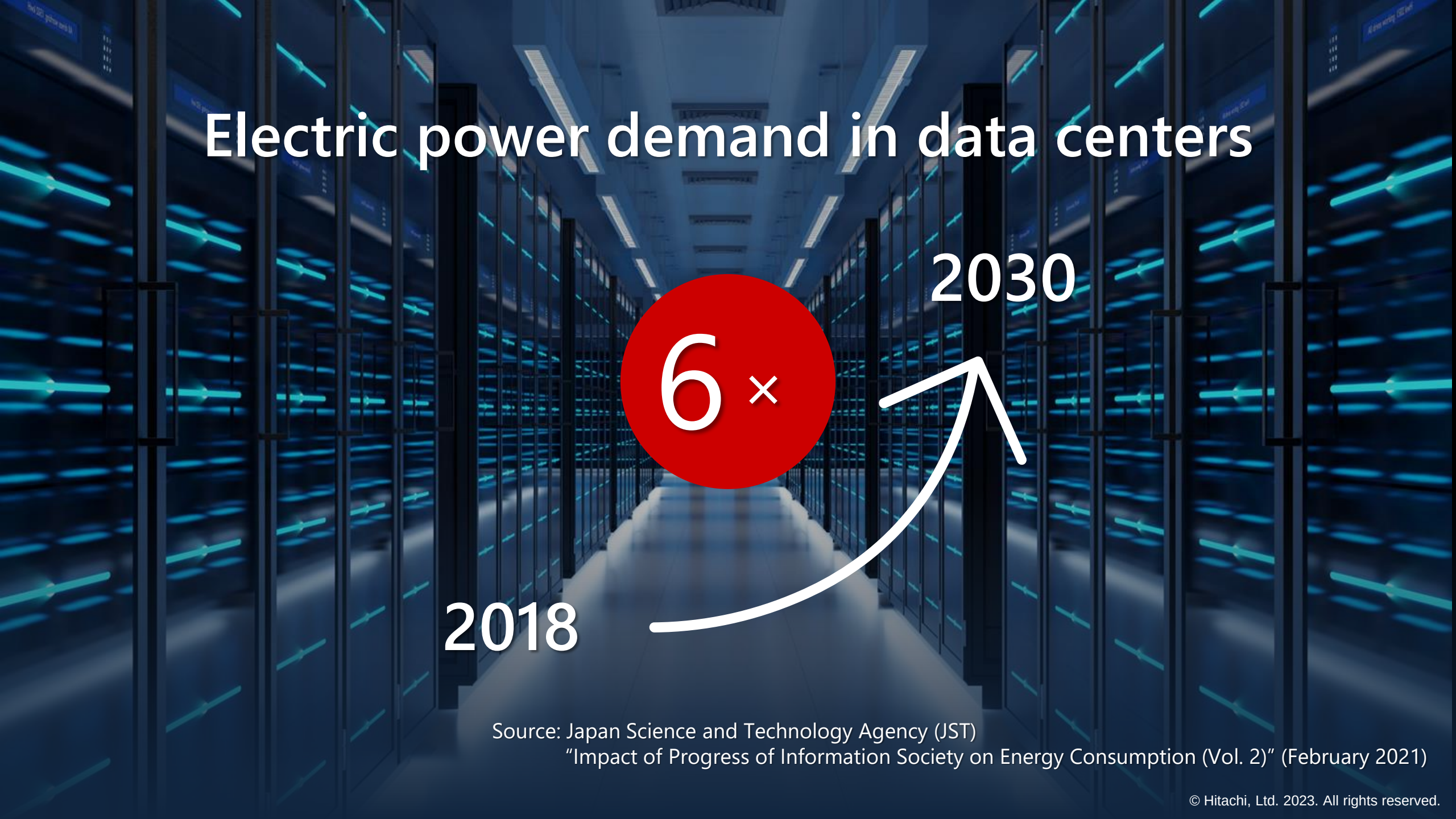
Electric power demand in data centers



Source: Japan Science and Technology Agency (JST)
"Impact of Progress of Information Society on Energy Consumption (Vol. 2)" (February 2021)

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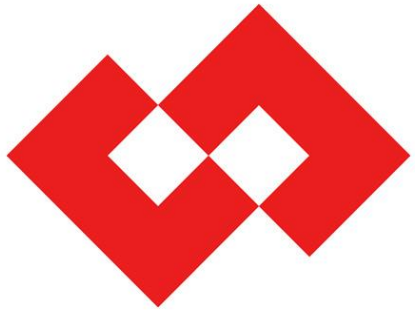
Developed energy management technologies to make further use of renewable energy at data centers



TEPCO Power Grid, Inc.

HITACHI
Inspire the Next

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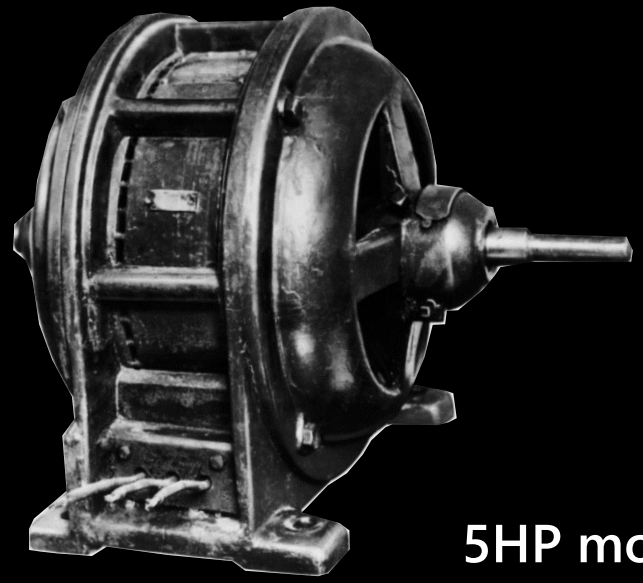

5HP motor

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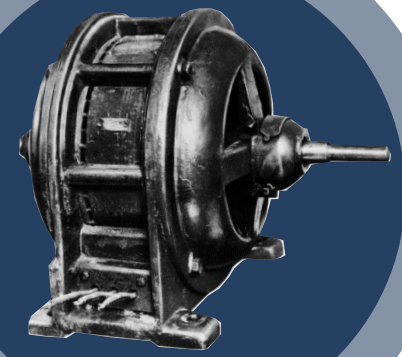
A strong will to develop machinery with Japanese technologies for the country's growth



Founder Namihei Odaira

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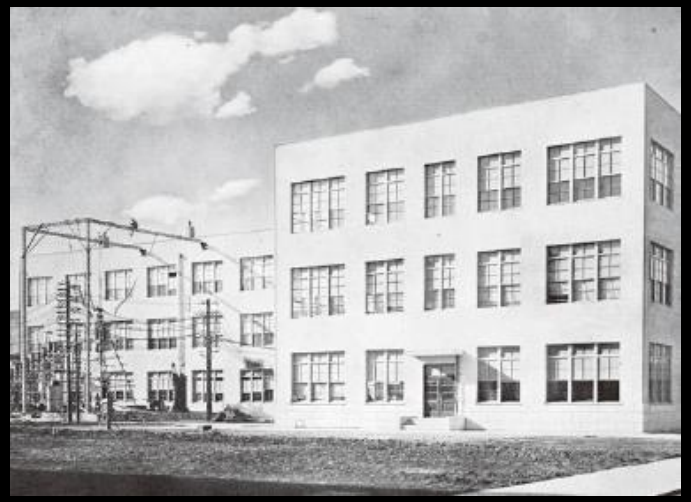

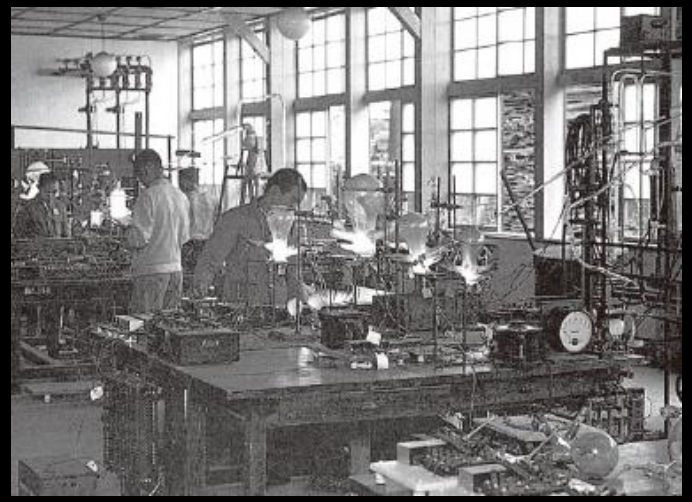

Newly set up R&D Unit

Founder Namihei Odaira

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Japan's first industrial technology magazine by a company “Hitachi Review”

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Contributing to sustainable economic growth

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Will and actions to improve society

The driving force behind innovations

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POWERING GOOD