

A banner with a red background featuring abstract, flowing shapes in various shades of red. The text is white and centered.

Hitachi Social Innovation Forum 2026 JAPAN

Good morning, everyone.

Thank you very much for joining us today in such large numbers.

I am Toshiaki Tokunaga, President & CEO of Hitachi.

One hundred years from now, if 2026 appears in a history textbook,
how do you think it will be described? Please take a moment to imagine it.

The Dawn of Physical AI

I would say: "The Dawn of Physical AI." AI is rapidly becoming part of our daily lives and our work. What we are witnessing today, however, is Physical AI that can directly interact with and shape the real world.

Across every industry, Physical AI is set to drive a profound transformation of industrial structures that business leaders cannot afford to ignore.

Today, I would like to explore with you how Physical AI will reshape our society.

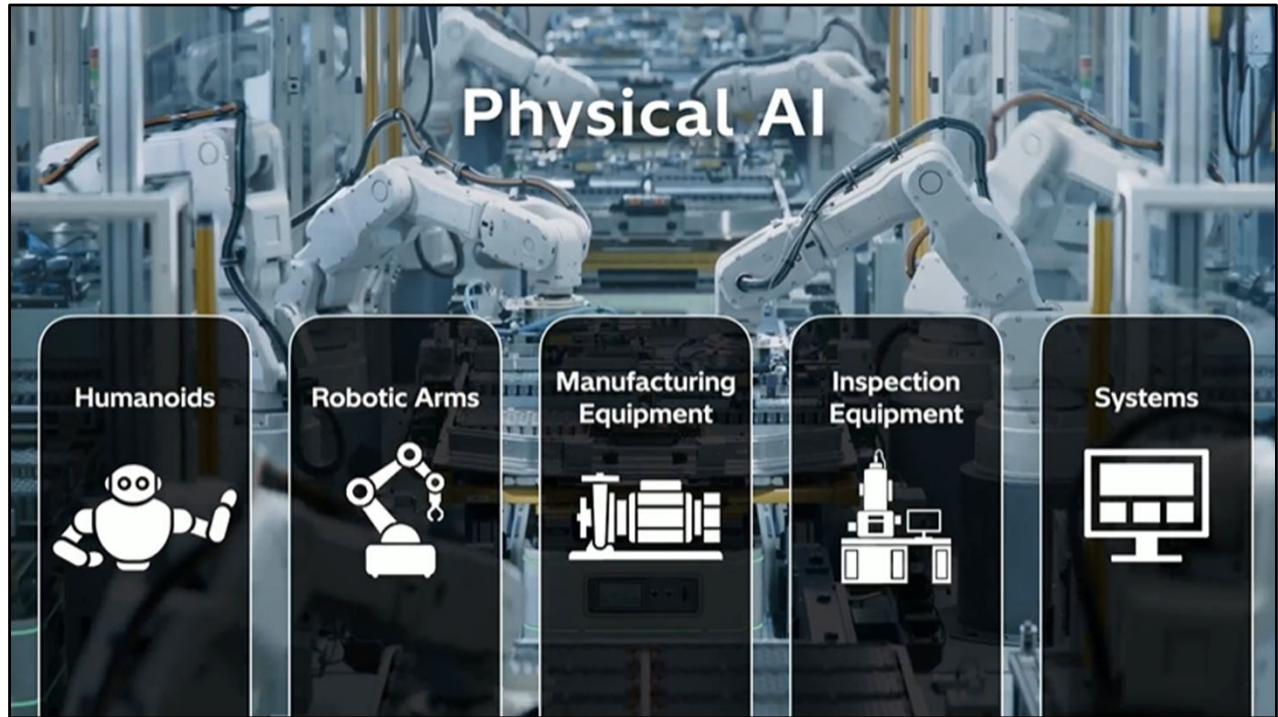


So, how is Physical AI different from other forms of AI?

Traditional AI has largely operated in cyberspace, providing insights and knowledge based on vast amounts of data.

However, in the physical world where we live, a wrong decision can lead to accidents, damaged assets, or even risks to human life.

For this reason, we have long been cautious about allowing AI to step beyond cyberspace and directly engage with the real world.



But the rapid progress of Physical AI has changed that reality.

Machines and equipment can now learn from data, reason, and act. Physical AI has begun to move the real world.

Automation

Predefined Operations

Autonomy

Makes Decisions
Based on the Situation

This change is fundamentally different from traditional "Automation."

In Automation, machines carry out Predefined Operations determined in advance by humans.

Physical AI, by contrast, enables "Autonomy," allowing equipment and systems to Make Decisions Based on the Situation and take appropriate action in response to changing conditions.

Now that this transformation is becoming a reality, the potential is clear.

Physical AI can dramatically expand the value that companies create. And that is why it matters to every industry and every business leader. Let me explain why.



For 116 years, Hitachi has supported the social infrastructure that cannot afford to stop, including manufacturing, rail, energy, logistics, financial services, and public systems.

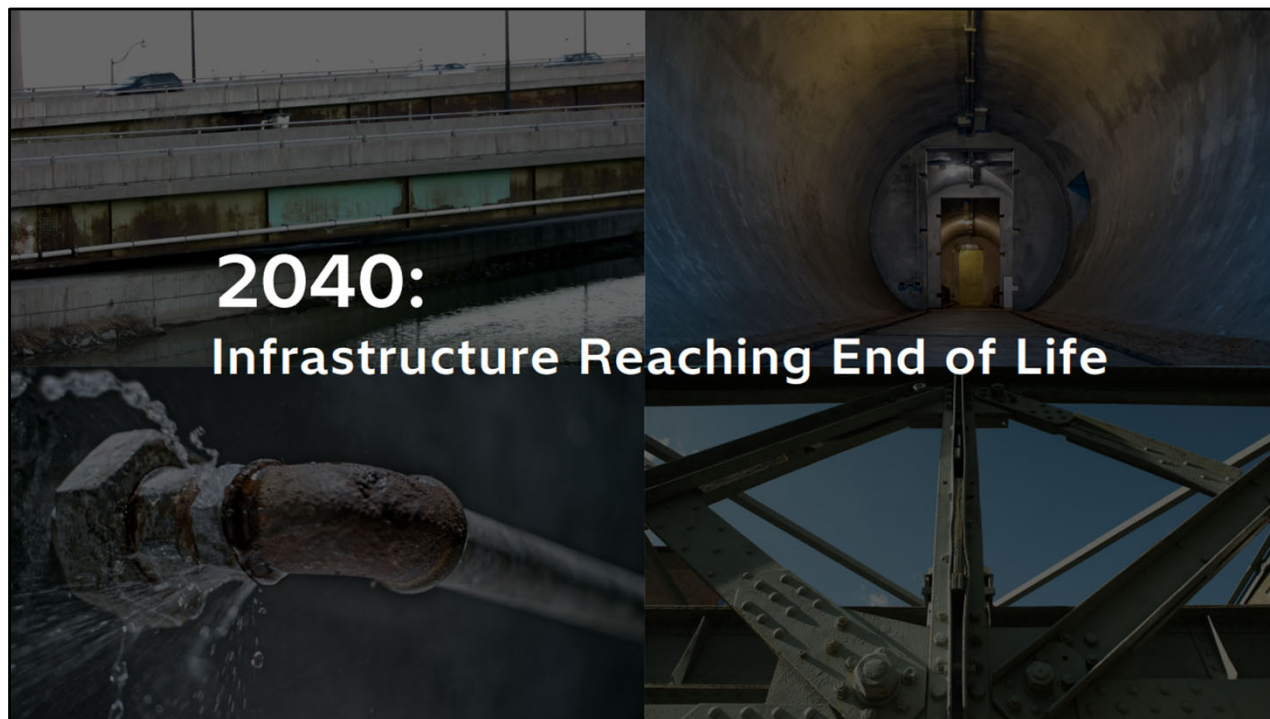


For decades, the people who have kept these operations running have been frontline workers, relying on their experience, judgment, and dedication.

But today, that foundation is beginning to shift.

In Japan alone, the worker shortage is projected to reach 11 million by 2040.

This is not a temporary worker shortage.
It is a structural change driven by a declining working-age population.



2040: Infrastructure Reaching End of Life

At the same time, many infrastructure operations still depend on people working around the clock, monitoring systems, responding to incidents, and making critical decisions.

I experienced this myself for many years during my career as a system engineer.

In the years ahead, a growing number of infrastructure assets will reach the end of their life, requiring maintenance and replacement.



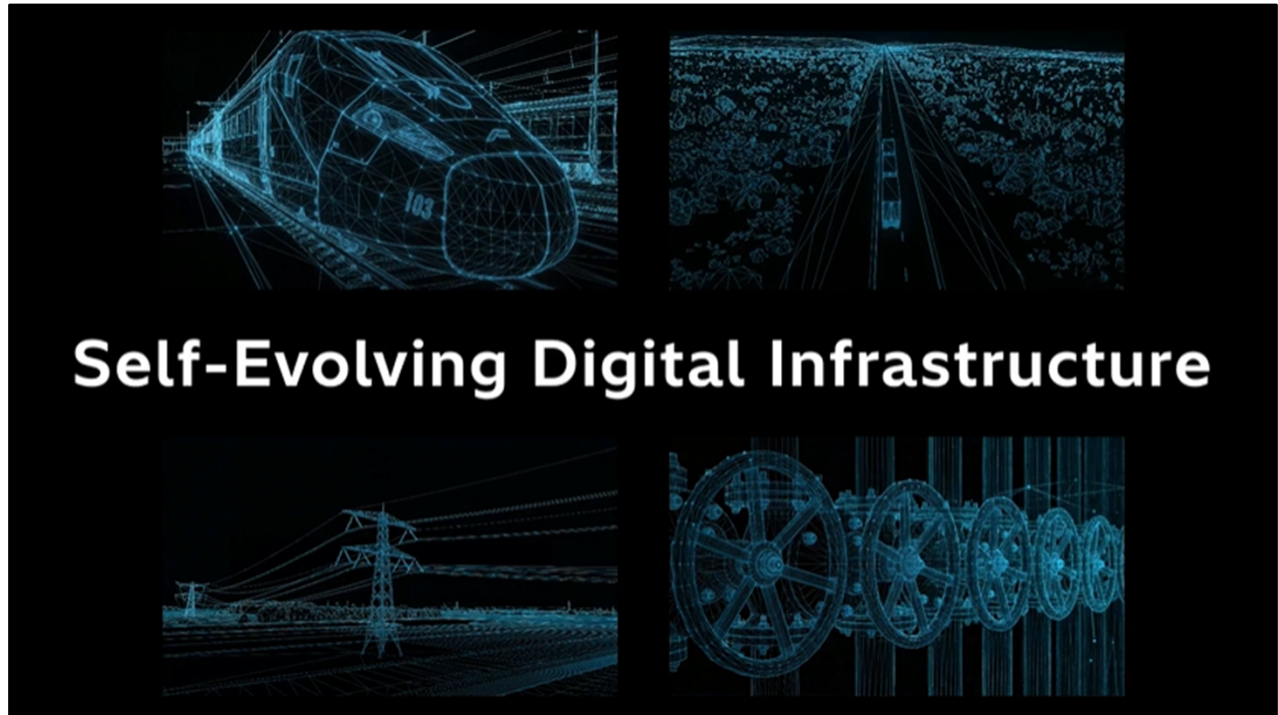
Operating System That Powers Social Infrastructure

The assets we must protect increase, while the people available to support them don't. Physical AI is the key to resolving this contradiction.

And its impact extends far beyond any single industry. From construction work to public transportation operations, Physical AI has the potential to transform every operation.

Earlier, I spoke about Physical AI's ability to expand the value that companies create.

I believe the digital services powered by Physical AI will ultimately become an "Operating System that Powers Social Infrastructure."



Self-Evolving Digital Infrastructure

What Hitachi is striving to realize is “Self-Evolving Digital Infrastructure,” where Physical AI continuously understands the ever-changing state of social infrastructure and improves and evolves operations without requiring human intervention each time.

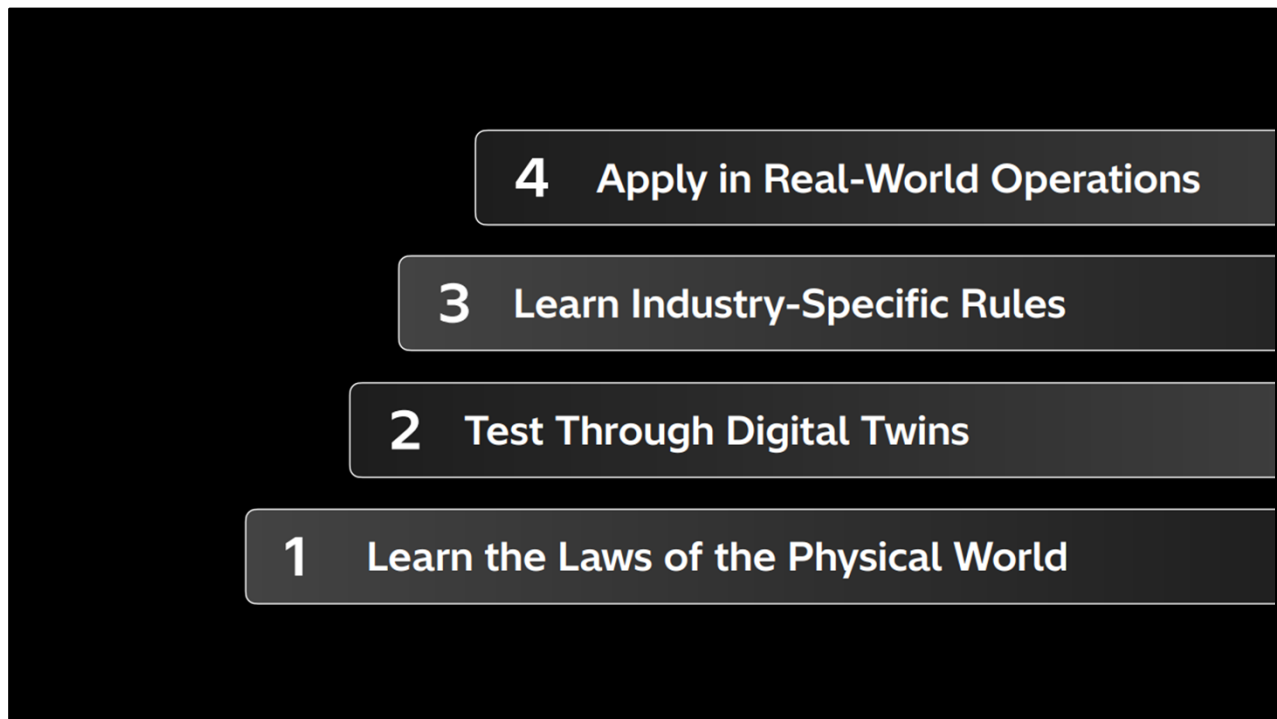
This would be something fundamentally new in human history.

AI will be able to make decisions and take actions much like experienced frontline workers.

And people, in turn, will be able to focus on what only people can do: envision the future, designing the societies, and shaping the infrastructure needed to support them.

Physical AI is a critical enabler of that future.

And “Self-Evolving Digital Infrastructure” is the future of social infrastructure that Hitachi is striving to realize.

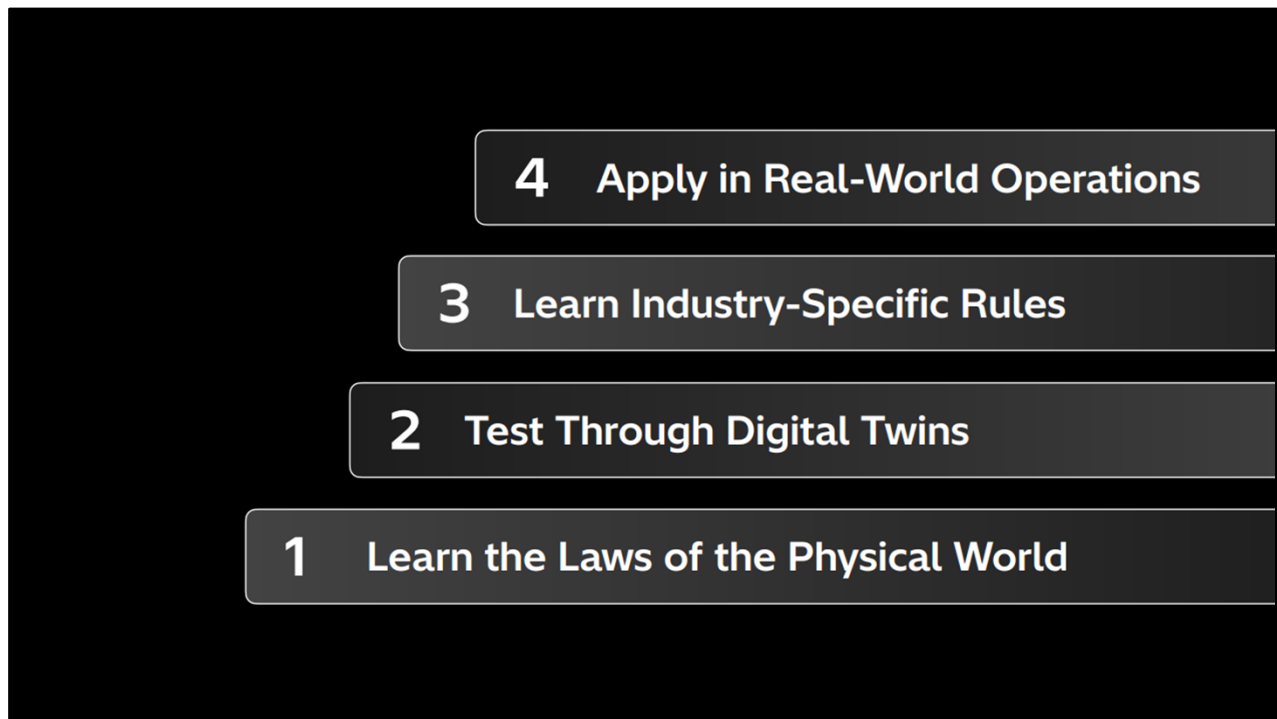


So, what must happen before Physical AI can be deployed safely and effectively in the real world?

Let me explain in four stages.

The first stage is to learn the laws of the physical world. AI operating in cyberspace must learn the physical phenomena and laws that govern the real world, including gravity, heat, fluid dynamics, and many others.

The second stage is to test through digital twins. By repeatedly experimenting in digital twins, virtual representations of the real world, and sometimes even failing, AI learns what constitutes the right decision.



The third stage is to learn industry-specific rules. AI must understand the ways of working in the field, including industry- and operation-specific standards such as safety requirements, quality standards, and operating procedures.

Only after completing these first three stages do we reach the fourth stage: apply in real-world operations.

Today, many companies are investing heavily in Physical AI.

However, they are not all focused on the same stage.

NVIDIA, for example, has established global leadership in the first and second stages through its platforms and technologies.

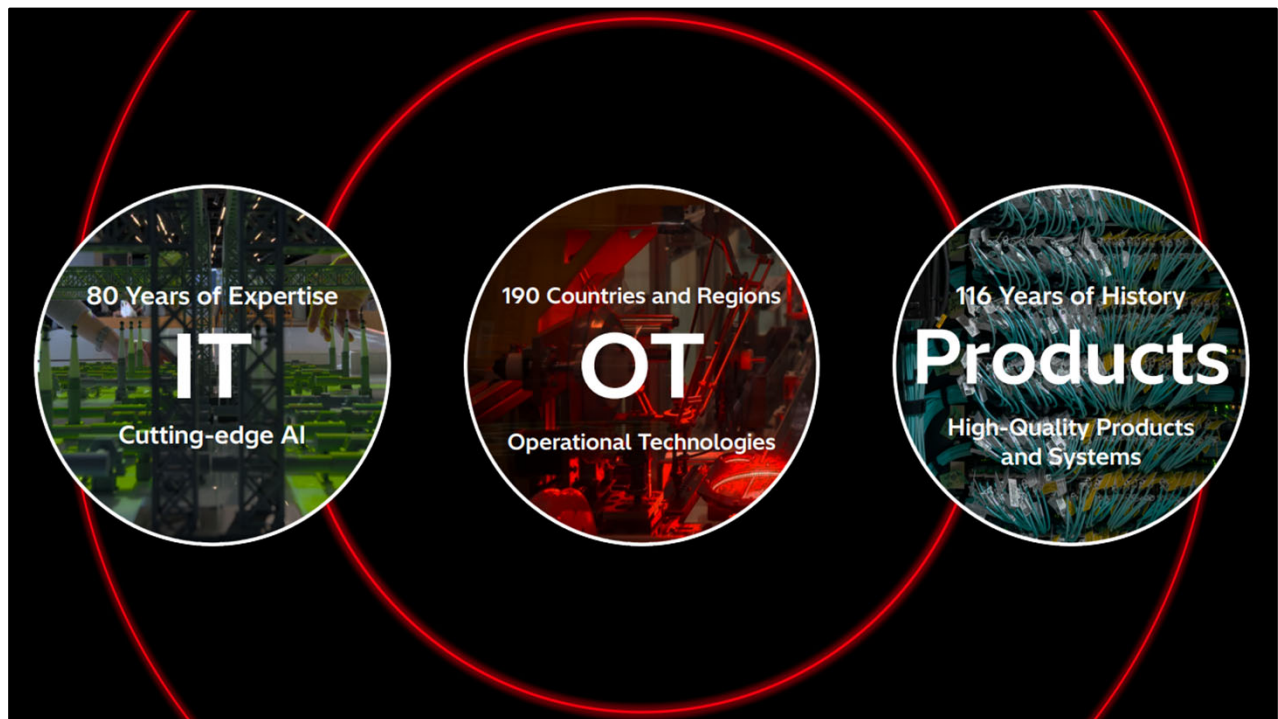


So where can Hitachi create unique value?

The answer lies in stages three and four. Our strength is enabling Physical AI to learn the realities of the field and then put that intelligence to work in mission-critical operations.

In software engineering alone, we have already achieved productivity improvements of up to 200 times through the use of AI.

But even the most advanced AI model cannot safely operate critical infrastructure unless it understands the rules, constraints, and responsibilities of the actual worksite.



Hitachi is uniquely positioned to create value at these stages, supporting customers through IT, OT, and products.

For more than 80 years, we have developed and delivered IT solutions.

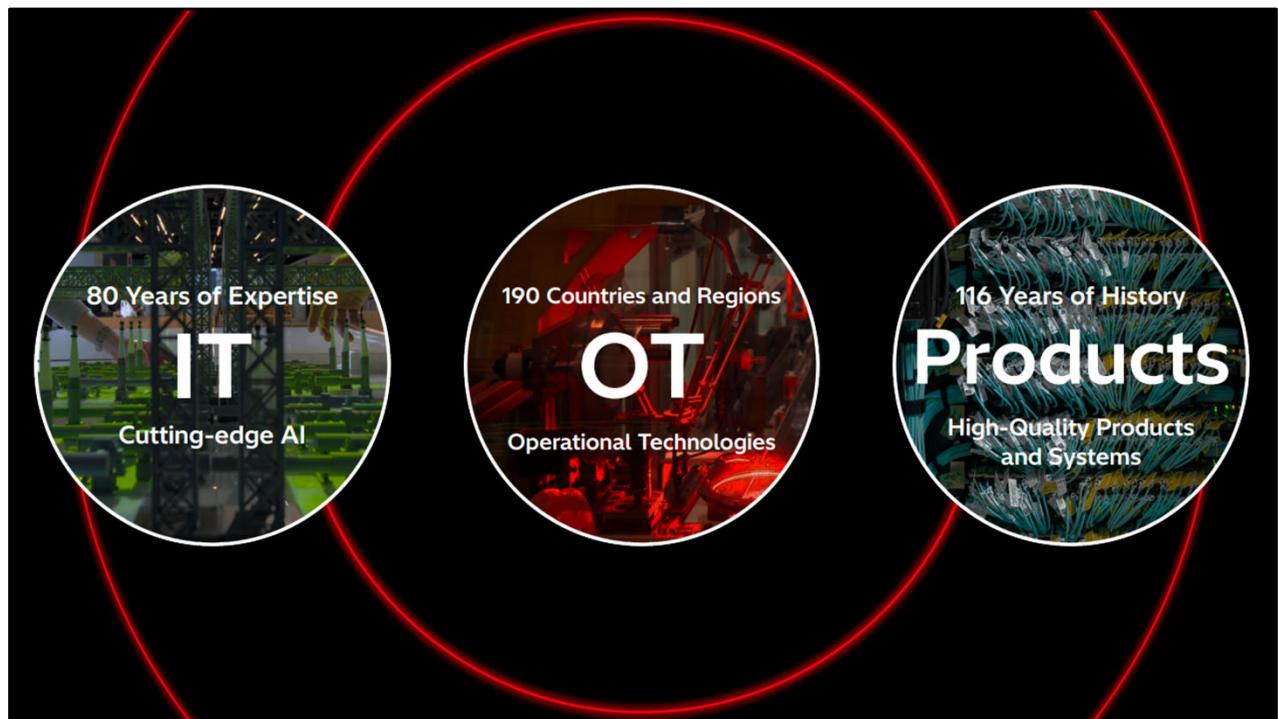
We have built products and operational technologies that have been developed and refined over 116 years.

As AI begins to operate in the physical world and transform infrastructure itself, success will require more than IT. More than OT. More than products.

It requires the ability to bring all three together and translate technology into safe and sustainable value in the field.

Hitachi also brings something else that few companies can match: deep expertise across energy, mobility, industry, and digital.

Few companies in the world support such a broad range of social infrastructure and truly understand how it operates.



Physical AI will realize its full potential not by optimizing a single asset or operation, but by connecting multiple domains and optimizing entire systems.

Hitachi has strengthened individual businesses. Our next chapter is to combine those strengths with the power of AI to evolve infrastructure as a whole.

We are confident that this is where Hitachi can create unique value as a global leader in transforming frontline operations.

Together with all of you, we aspire to lead the world from here in Japan in shaping the future of "digital infrastructure," a future vision of sustainable social infrastructure.



By bringing together Hitachi's strengths across IT, OT, and products, we launched Lumada in 2016.

This year marks its 10th anniversary.

Just as digital technologies such as AI continue to evolve, Lumada has continued to evolve as well.



Data from
Customers' Environments



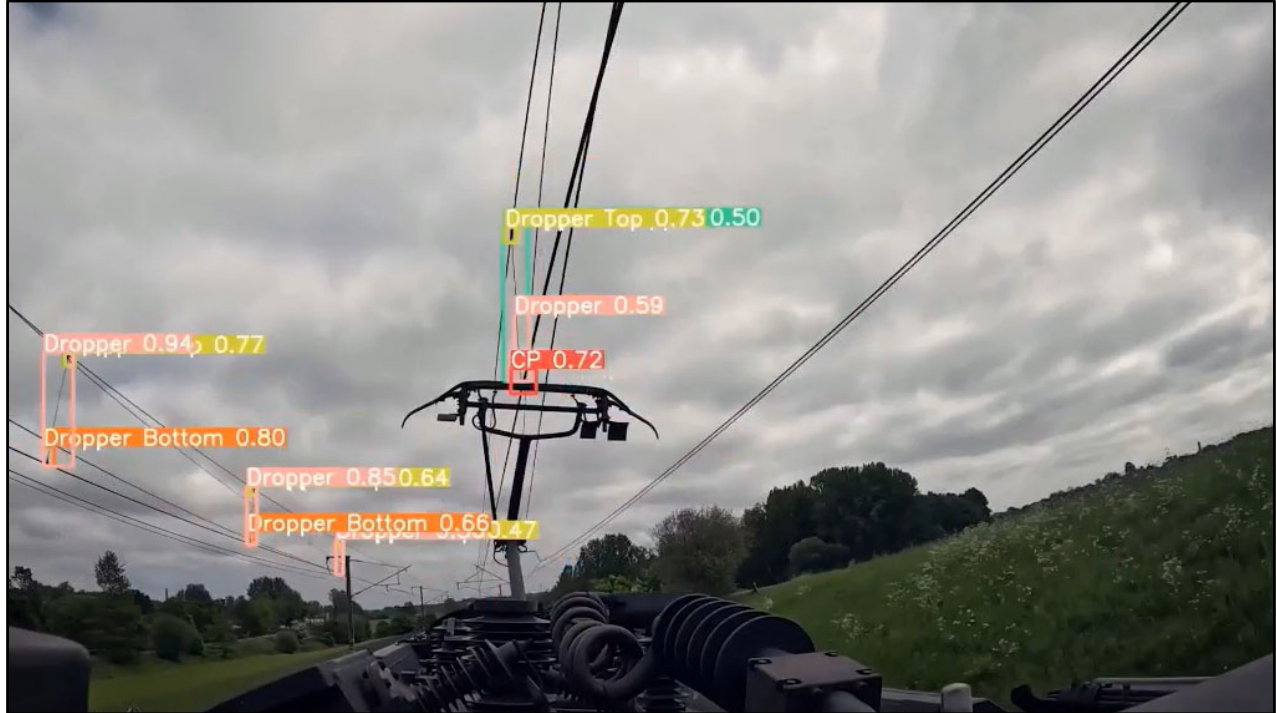
Cutting-Edge AI
and Domain Knowledge



Digital Services That Solve
Customer Challenges

Today, with Lumada 3.0, we collect real-time data from the products, assets, and systems operating in our customers' environments.

By combining that data with AI trained on Hitachi's deep domain knowledge, we deliver solutions that address both operational and management challenges.

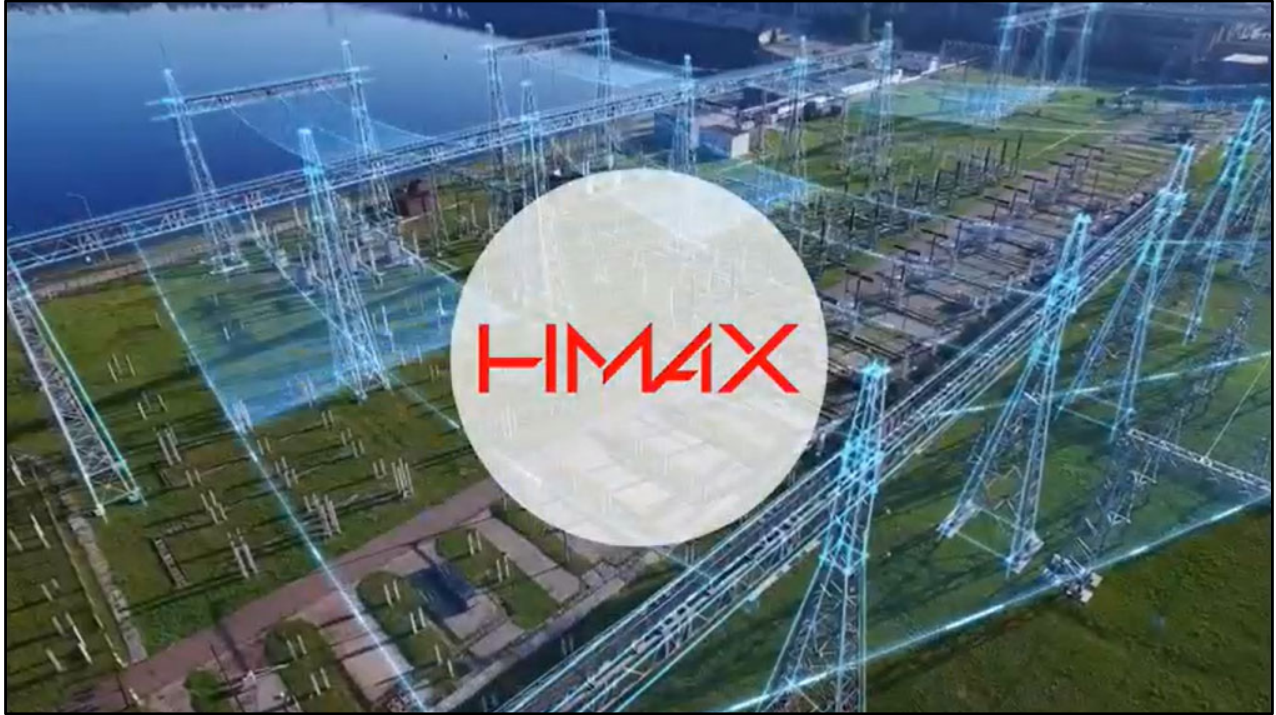


One of the most representative examples of Lumada 3.0 is HMAX.

The story began with railways. By installing sensors and cameras on trains, we collect data on rolling stock, tracks, overhead lines, and other critical assets.

AI analyzes data in real time, optimizing both operations and maintenance.

In some cases, maintenance costs have been reduced by as much as 15 percent.



HMAX is built on co-creation. Rather than delivering a one-time solution, we work side by side with our customers to continuously improve operations over time.

Engineers with expertise in IT, OT, and products collaborate and help customers improve productivity, efficiency, and operational performance.

HMAX is also a reflection of what we call True One Hitachi: bringing together capabilities from across the group to create value that no single business can deliver alone. Let me share two examples.

HMAX Industry

The first is HMAX Industry.

In the semiconductor industry, Physical AI is helping shorten development cycles and improve manufacturing efficiency.

HMAX Industry



CD-SEM

Critical Dimension Scanning
Electron Microscope

Global No.1 Market Share

Hitachi High-Tech is the global leader in critical-dimension scanning electron microscopes, or "CD-SEM," used throughout semiconductor production.

Enhancing Semiconductor Manufacturing Productivity with Physical AI



Reduction in
Development Time

Approx. **50%**

Maintain & Improve
Utilization Rate

Approx. **90%**

By applying AI to the data generated by these systems, we provide feedback to design processes, optimize equipment maintenance, and improve manufacturing performance.

Through collaboration across True One Hitachi, we are working with customers to reduce development time by approximately 50% and maintain, or further improve, equipment availability at approximately 90%.



In June this year, we also agreed to expand our long-standing collaboration with Intel, further strengthening our efforts in this area.

Looking ahead, we plan to bring HMAX Industry to more customers around the world, supporting the stable supply of semiconductors and enabling sustainable growth with our partners.

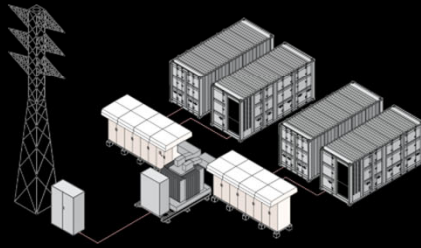
HMAX Energy

The second example is HMAX Energy.

This Physical AI solution helps manage the lifecycle of energy assets while predicting and preventing operational issues before they occur.

Building Sustainable and Resilient Energy Infrastructure

Battery Energy Storage Systems



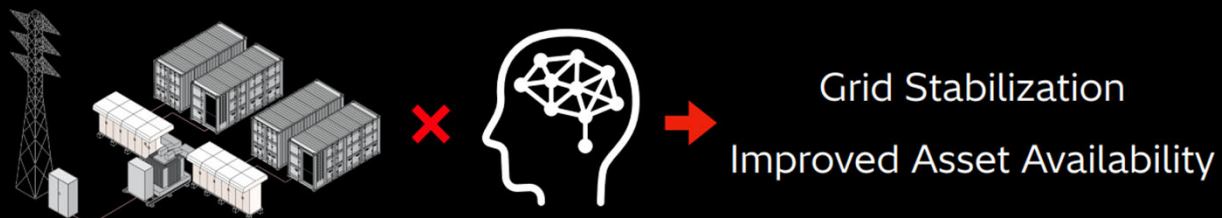
Physical AI



In Queensland, Australia, we support large-scale battery energy storage systems operated by Akaysha Energy.

Using operational data and advanced control technologies, HMAX stabilizes the grid, improves asset availability, and supports reliable operations.

Building Sustainable and Resilient Energy Infrastructure



As electricity demand continues to grow and energy systems become more diverse, HMAX Energy will play an important role in building resilient and low-carbon power infrastructure.

By applying AI to data collected from equipment and systems in the field, HMAX continuously improves the value of social infrastructure.

By the end of this fiscal year, we expect HMAX-related businesses to reach revenues of approximately 500 billion yen, with an operating margin of approximately 22 percent.

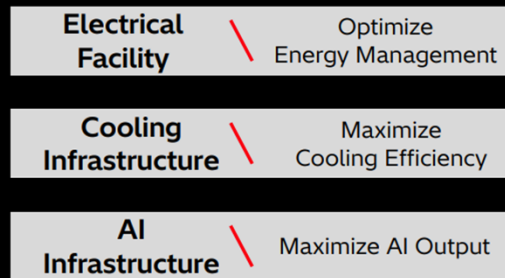
We envision HMAX as the “Operating System that Powers Social Infrastructure,” and we are accelerating its development.



So far, I have shared our vision for the future of infrastructure and how HMAX is evolving to help make that vision a reality.

The evolution of Hitachi's Physical AI services is still continuing. Everyone, today I would like to announce three new additions to the HMAX lineup.

HMAX Data Center



**Autonomous Operations and System-Wide Optimization
Powered by Physical AI**

The first is HMAX Data Center.

As AI continues to advance, data centers have become critical infrastructure for society.

At the same time, growing energy consumption and increasing operational complexity have created significant challenges for operators.

To address these challenges, HMAX Data Center integrates power, cooling, and IT across the entire facility, enabling autonomous operations and overall optimization powered by Physical AI.

HMAX Data Center

Domain-Specific Solutions for HMAX

HMAX
Mobility

HMAX
Energy

HMAX
Industry

HMAX
Finance

HMAX
Data Center

Together with HMAX Mobility, HMAX Industry, and HMAX Energy, it will become another key pillar of the HMAX portfolio, helping build smarter and more sustainable infrastructure for the AI era.



The second is HMAX Cyber. In the age of Physical AI, cyber risk is rapidly becoming a major business risk.

To address this, Hitachi developed HMAX Cyber.

In the age of AI, cybersecurity is no longer simply an IT issue. It is a core business continuity challenge.

HMAX Cyber combines frontier AI technologies from partners such as Anthropic, OpenAI, and Google Cloud with Hitachi's operational expertise, built through decades of supporting critical infrastructure.

It is positioned as one of the Foundry Solutions across the HMAX portfolio.

It serves as an operational resilience service, helping customers identify risks, monitor threats, respond effectively, and recover quickly.

Physical AI FDE Service



Transform Customers' Tacit Knowledge into AI-Ready Data
Forward Deployed Engineer

Identify management challenges ► **AI Adoption** ► **Frontline operation**

Finally comes the third one.

The true value of Physical AI comes from the knowledge and data accumulated in the frontline.

Yet one of the greatest challenges is transforming the experience and judgment of skilled workers into data that AI can understand and utilize.

That is where our Physical AI Forward Deployed Engineer (FDE) service comes in.

These are teams of Forward Deployed Engineers, or FDEs, who work directly at customer's site and transform your tacit knowledge into AI-ready data.

This Physical AI FDE Team seamlessly connects the various HMAX solutions and provides end-to-end support, from identifying business challenges to AI implementation and ongoing operations.

Physical AI FDE Service

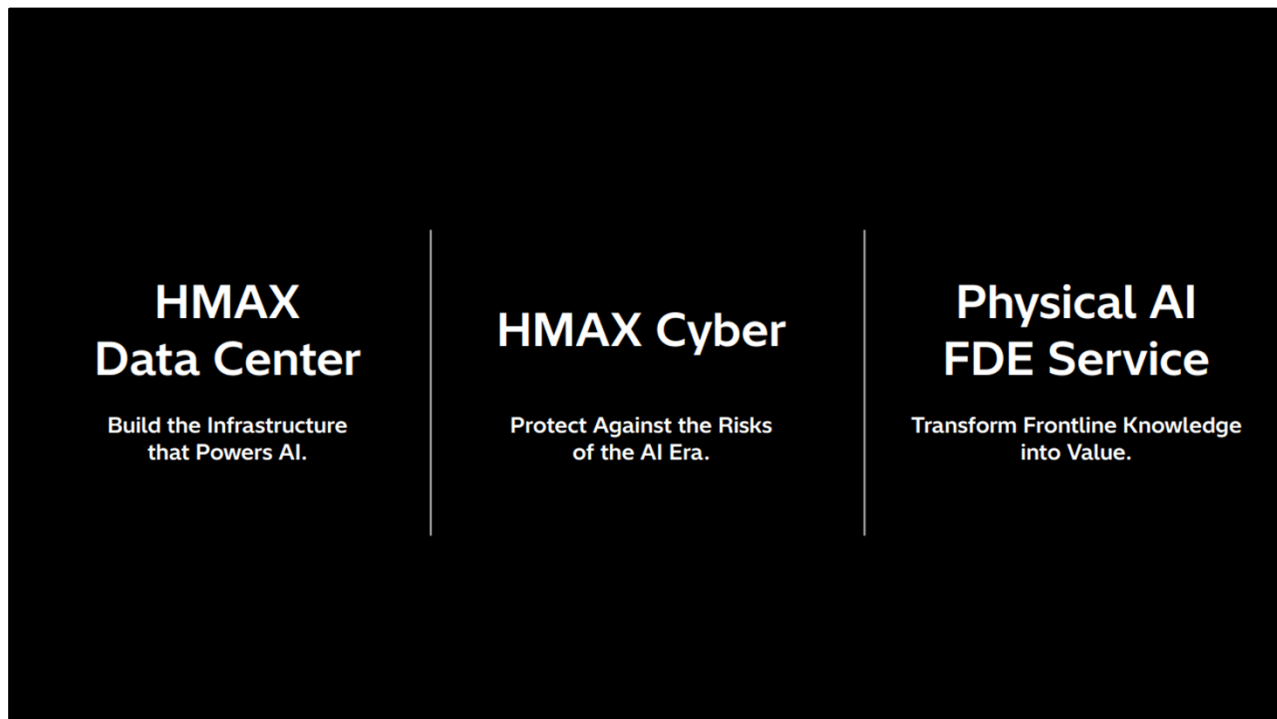
Data Platform that Integrates
Tacit Frontline Knowledge and Data

HMAX Data Fabric

Prevent Inappropriate AI Behavior

HMAX AI Operations

Furthermore, by leveraging HMAX Data Fabric, which integrates tacit frontline knowledge and operational data, and HMAX AI Operations, which ensures stable AI operation and prevents inappropriate AI behavior, we help entire operational environments learn autonomously, continuously evolve, and optimize themselves as a whole, rather than pursuing isolated optimization.



Build the infrastructure that powers AI.

Protect against the risks of the AI Era.

Transform frontline knowledge into value.

Through the three new solutions and services announced today, Hitachi is accelerating the adoption of Physical AI, advancing our vision of Self-Evolving Digital Infrastructure.



As Physical AI drives a transformation of industrial structures, trusted partners are essential to realizing our vision of Self-Evolving Digital Infrastructure.

Today, we have a special message from Jensen Huang, CEO of NVIDIA, one of Hitachi's key partners. Please take a look.

〈Video message〉

https://youtu.be/MDC4GKSX8Y4?si=7dGGPf5IBm_jFyYq

When Jensen visited Japan in July, we discussed the adoption of Physical AI across social infrastructure.

As a result, we agreed on a collaboration to enable autonomous operations across entire frontline environments through Physical AI.

Building on the energy sector example that Jensen mentioned earlier, Hitachi and NVIDIA will accelerate our collaboration to bring Physical AI to a wide range of social infrastructure sectors, including rail, manufacturing, financial services, and public systems.



Today, Hitachi is building a global AI ecosystem with leading partners around the world. Working together, our Forward Deployed Engineers help customers apply the best technologies from across the ecosystem and translate AI innovation into operational transformation.

Together with our AI ecosystem partners, we will accelerate the safe and secure adoption of Physical AI across social infrastructure and bring Self-Evolving Digital Infrastructure to life.

Harmonized Society



Throughout my remarks today, I have focused on how Physical AI can transform infrastructure.

Today, Hitachi is focused on transforming social infrastructure through Physical AI. But social infrastructure is not the only thing that can evolve autonomously.

Imagine a future in which not only social infrastructure, but society itself continuously learns, adapts, and evolves.

A future in which Physical AI helps create communities that are more resilient, more sustainable, and more responsive to human needs.

We see Physical AI as a critical enabler of what we call a Harmonized Society: a society where environment, well-being, and economic growth advance together.

Harmonized Society



Harmony has long been one of Japan's most important values.

Consider Japan's bullet trains that run on schedule every day, parcel delivery services that arrive on time, and high-quality products continue operating reliably for decades.

These achievements are not the result of craftsmanship and detailed procedures alone. They are rooted in a spirit of care for the people who rely on them, and attention to even the smallest sign of abnormality, and a commitment to bringing many complex elements into harmony as one.

I believe this way of thinking has helped shape Japanese society.

Harmonized Society



The high-quality products, trusted infrastructure, operational know-how, and rich data that Japan has cultivated over many decades represent invaluable assets for the next era of Physical AI and the Self-Evolving Digital Infrastructure beyond.

That is why I am convinced that Japan can lead the realization of the Harmonized Society.

Of course, significant challenges remain.

We must ensure openness and sovereignty in Physical AI platforms, create safe and secure environments for deployment.

We must develop new frameworks, new governance models, and most importantly, earn the trust and understanding of society.

Harmonized Society



But I believe we have a unique opportunity before us.

Together, we have been given a blank canvas on which to imagine the future we want to create and take the steps needed to make it real.

Just as the Industrial Revolution transformed the world, and just as the Internet redefined human connection, now let us launch the next transformation from Japan and shape the future together.



Start Now with Hitachi.

Together with all of you here today, I hope we can begin a dialogue on the future society we aspire to create, starting here and now.

Start now with Hitachi! Thank you.