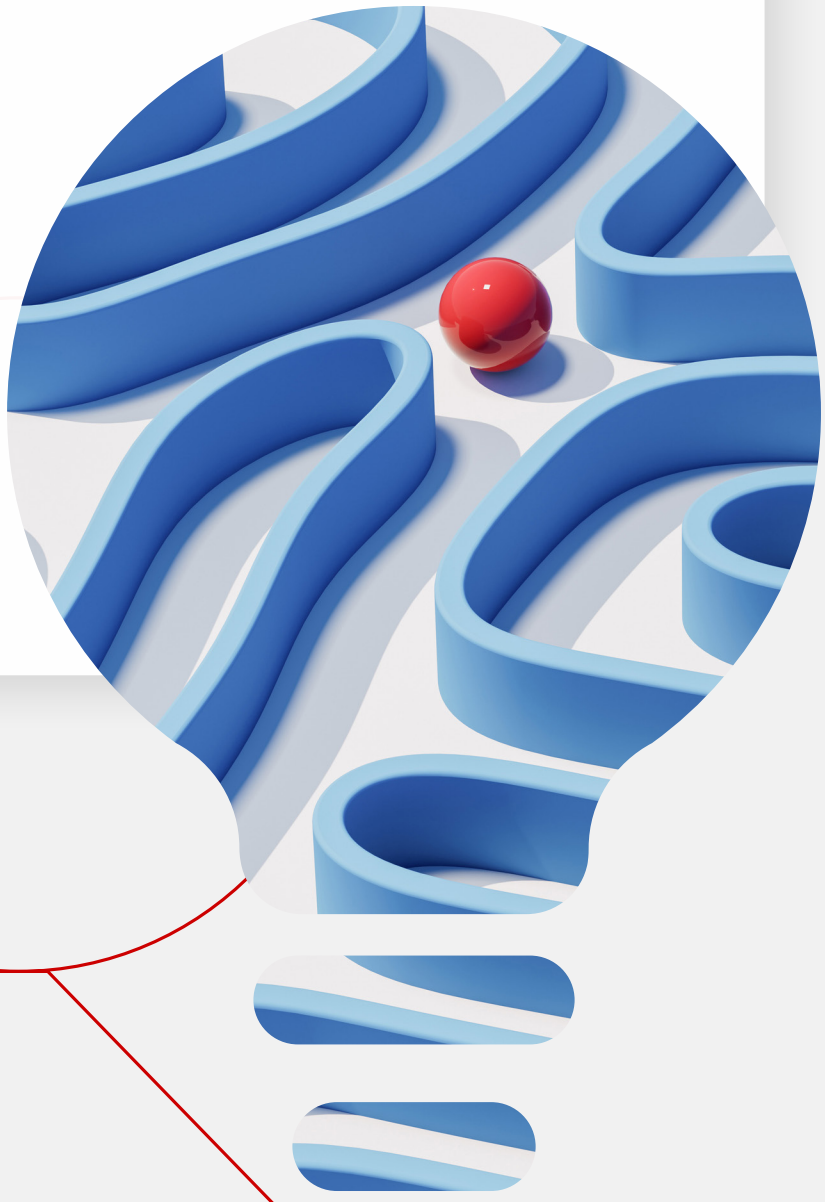
Hitachi Vantara

Guide

Accelerate your AI success

AI Use Case and Accelerated ROI Guide

Discover how, with unique insights and access to proven AI use cases, you can transform AI initiatives into tangible results faster. Accelerating ROI, reducing risk, and supporting sustainability.



Executive summary

No longer the talk of tomorrow, AI has become a dominant part of the present and is a central aspect of almost every conversation about processes, tasks, and innovation developments.

While it's likely already an intrinsic part of your business, the focus now must be on how you can take AI deployments beyond simple tasks to unlock deeper, more impactful value.

According to a report by McKinsey, over the next three years, from 2025, 92% of organizations plan to increase their AI investments – yet only 1% of businesses call their companies 'mature' on the deployment spectrum.[1]

So, there's a clear need to progress AI further – removing the guesswork around where to focus investments to ensure more highly accurate deployments, integrated across the business, that deliver fast time-to-value.

In this guide, we'll cover some of our most powerful use cases across industries to inspire you. You can also learn more about our AI Discovery Service, iQ AI infrastructure stack, and the deep heritage of One Hitachi – and how you can put each area to use to unleash huge value from AI for your business.

Overview

The AI challenge: knowing where to start

Turning AI into ROI

It's all too easy to take a broad-brush approach to AI deployments, but we now know this can lead to poor success rates, low value, and increased exposure to risk. The key to success is with a hyper-targeted approach – starting with well-defined, impactful projects where AI can deliver the greatest ROI.

We can help you. We have the expertise to unpick the right place to start, focusing on your unique business and industry needs, and by providing a range of use cases to drive inspiration and get you to tangible outcomes, fast.

Value starts with understanding

A clear goal and visibility of the IT and data landscape are key to deploying AI solutions that deliver. But it's not always straightforward to pinpoint the most high-value AI use cases, evaluate data readiness, determine ROI and develop a strategic roadmap for successful AI implementation. It's why at Hitachi Vantara we offer an AI Discovery Service; the following three-week process to set you off on the right track:

Week 01 – Opportunity analysis

Review your current landscape, from priorities and objectives to inventory of internal data sources, risk identification, and opportunity prioritization.

Week 02 – Use Case Selection

Prioritize projects for pilots that are best placed to optimize business based on value creation, risk, and data availability.

Week 03 – Planning

A proof-of-concept vision, approach, and timeline aligned to value creation goals, hypotheses to validate success criteria, and a roadmap for next actions.

AI Discovery Service Outputs

Tangible deliverables from the AI Discovery process include:

1. Research report on user insights
2. Prioritized AI use case roadmap
3. AI concept documentation and recommendations for proof-of-concept

Why Hitachi Vantara is the trusted expert for AI success

Over 110 years of domain experience garnered from across the One Hitachi Group have fed the development of proven industry-specific solutions, putting us in a prime position to help you chart the journey from proof of concept to profitable growth with AI.

Results-focused AI use cases

By combining the deep data and storage infrastructure expertise of Hitachi Vantara, with the heritage and cross-industry insight of One Hitachi, our AI use cases are proven to deliver value from the moment of deployment.

Our use cases can be applied with flexibility across multiple, diverse industries, as long as there is an underlying need. Hitachi iQ, our end-to-end, purpose-built AI solution stack, helps you extract the full value from each one.

We've spotlighted five AI use cases below, so take a look to discover the opportunities and see how you can unlock results fast.

Data analysis and transformation

- Advanced data analytics
- Automated reporting with visualization
- Predictive analysis
- Data mining / business intelligence
- Data cleaning, error correction and integration

Process automation and optimization

- Process automation
- Resource allocation
- Asset management
- Scheduling
- Route planning
- Document analysis

Content generation and personalization

- Automated writing
- Personalized content
- Personalized marketing and learning
- Image, audio, video, and graphic creation
- Synthetic data generation

Information exploration and decision support

- Information retrieval
- Knowledge discovery / extraction
- Summarization
- Risk assessment
- Classification and trend analysis
- Strategic planning

Conversational AI and virtual assistants

- Natural language processing
- Chatbots
- Voice assistants
- Speech recognition and synthesis
- Sentiment analysis
- Intent recognition

Here are some of the use cases available from Hitachi iQ

Data analysis and transformation

Use case focus: Remaining Useful Life (RUL)

In asset-intensive industries, operational success depends on the reliability and availability of critical equipment. Unscheduled downtime caused by equipment breakdowns can disrupt workflows, delay deliveries, increase operational costs, and erode customer trust. Preventing these issues requires a shift from reactive to predictive maintenance strategies.

With a data-driven solution that analyzes trends in KPIs, organizations can estimate the RUL of equipment or components more accurately – so teams can plan maintenance or replacement well in advance.

- Schedule repairs or replacements before failures occur
- Minimize downtime and maintain continuous operations
- Improve cost efficiency, avoid emergency repairs and optimize resource allocation
- Extend asset life with better health visibility

Process automation and optimization

Use case focus: fleet management optimization

To maximize vehicle uptime, reduce service interruptions, and lower operational costs, fleet operators and transportation service providers rely on timely maintenance. But without accurate forecasting, maintenance is reactive, leading to unplanned downtime, increased repair costs, and underutilized fleet assets.

But, with a powerful predictive maintenance solution that uses available sensor and KPI data, organizations can plan maintenance proactively – even when failure event data is limited.

- Predict optimal timing for services or replacement with accurate RUL estimates
- Minimize downtime and avoid unexpected failures
- Reduce maintenance costs and labor hours
- Keep more vehicles on the road with reliable performance forecasting
- Flexible data input, whether it's sensor logs, event data, or KPI trends

Content generation and personalization

Use case focus: parts inspection

Organizations across the transportation industry face pressure to minimize downtime and reduce maintenance costs. But a shortage of skilled technicians and the growing complexity of modern vehicles make this a challenge, leading to diagnostic errors, incorrect repairs, repeat failures, extended repair cycles, and lost revenue – not to mention the impact on inventory planning and customer satisfaction.

With an analytics platform that analyzes structured and unstructured inputs using natural language complaints from service logs, vehicle information, and event logs, engineers can diagnose and repair vehicles correctly first time.

- Intelligent repair recommendations based on actual fault patterns and service histories
- Reduce diagnostic time with root-cause identification from contextual fault code analysis
- Speed up the repair cycle and improve accuracy with issues fixed first time
- Reduce costs by eliminating unnecessary parts and labor hours
- Improve parts forecasting by reducing repair unpredictability

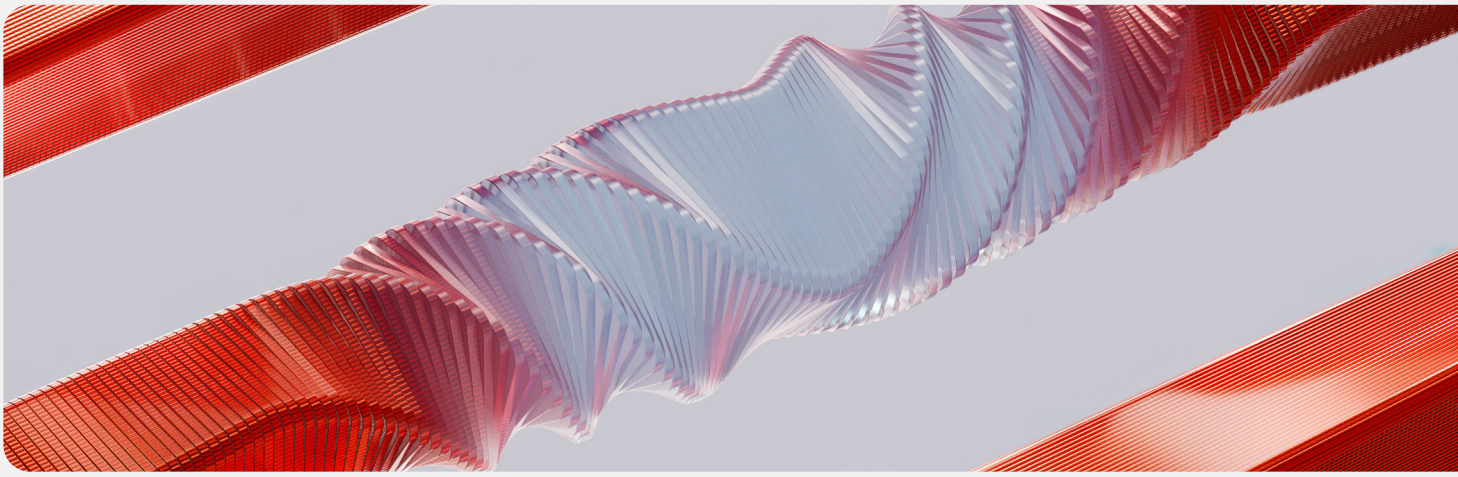
Information exploration and decision support

Use case focus: operator skill evaluation

As experienced operators in industrial operations retire, they're leaving a widening skills gap, and new or less experienced workers face challenges executing complex tasks with consistency, speed, and safety. This issue is compounded by modern equipment and processes that require digital literacy and data-driven decision-making.

With an Operator Skill Evaluation solution, machine learning and performance analytics can help monitor, assess, and guide operator development – delivering tailored feedback to speed targeted development where needed.

- Objectively assess operator performance using data-driven comparisons for skill benchmarking
- Speed upskilling with personalized training recommendations
- Reduce errors and process variability by standardizing best practices
- Improve knowledge retention by codifying expertise from experienced workers for scalable onboarding
- Enhance safety and compliance with improved equipment handling and safer workflows



Case study: An advanced AI solution for critical power transmission reliability

To meet the growing demand for power, Southwest Power Pool (SPP) needed a solution to accelerate generator interconnection (GI).

Currently, the US generates 1.28 terawatts of power – but more than twice that amount waits in a queue as unusable backlog caused by the grid interconnect process, which includes time-consuming analysis and simulation studies to ensure new energy source introductions don't compromise grid reliability, stability, or performance.

To address the gap, Hitachi Energy, Hitachi iQ and Hitachi R&D came together to help develop an integrated AI-driven solution – differentiated by its advanced proprietary AI algorithms and high performance enabled by Hitachi iQ's enterprise AI solution stack. This helped speed interconnection studies and support the 2-3 percent annual growth in US energy demands, with:

- Process automation
- Predictive analysis
- Communication systems integration

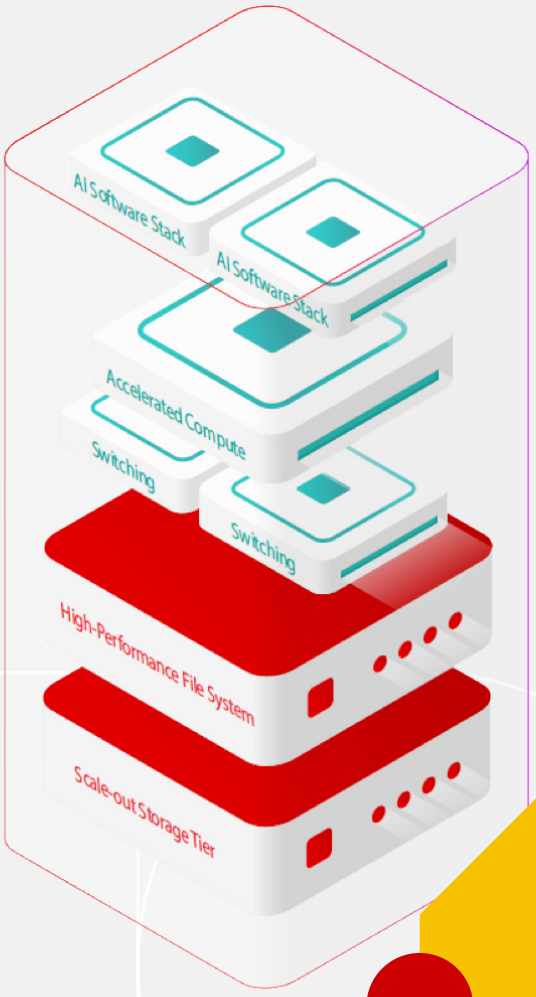
"This initiative is about reimagining the electricity production and distribution process through the lens of modern AI technology. Real-time data access is needed to create truly realistic scenarios caused by new generator introductions. The AI solutions we're developing will provide that data, among other advantages. SPP can then make significantly quicker, better-informed decisions that will increase overall ROI while better serving the nation's population with accessible power."

Frank Antonysamy
Chief Growth Officer, Hitachi Digital

Behind the use cases: Hitachi iQ

An industry-optimized, end-to-end AI solution suite, Hitachi iQ equips IT leaders with the capabilities they need as they explore new ways to automate processes, speed time-to-market, and uncover fresh insights to inspire innovation and accelerate growth. With adaptable, end-to-end hardware, software, and services to help you bring AI in-house and meet a wide range of use cases, Hitachi iQ can scale and evolve with you as your needs change. No use case is too big or too small.

The powerful integrated stack of accelerated compute, robust networking, high-performance file systems, and scale-out storage delivers a turnkey, intelligent, performant, scalable, and flexible GenAI solution, with all the services you need to support your AI pursuits.



The Hitachi iQ storage components create an AI Data Lakehouse that gives AI models unified access to data, irrespective of where it resides – speeding AI success and time-to-value while ensuring explainability, lineage, data accuracy, security, and traceability at any given point for mission-critical solutions. Hitachi iQ conforms to the NVIDIA AI Data Platform reference design to redefine enterprise AI data pipelines and unlock new levels of efficiency. And with AI solutions for Retrieval Augmented Generation (RAG), you can improve the accuracy and relevance of your large language models (LLMs) while maintaining full control, sovereignty, and governance over your data.

Unlike other approaches, Hitachi iQ goes beyond basic integration and testing by layering industry-specific capabilities, built from 100+ years of industry expertise from across One Hitachi on top of the AI solution stack. Resulting in outcomes that are more specific and relevant to your business.

AI is better with Hitachi iQ

- **20x** improved AI training time
- **75%** improved ROI
- **65%** storage cost savings

Hitachi Vantara named a leader in AI storage by GigaOm.

Read the report here →

The inner workings of the high-performance AI tech stack

The team at Hitachi will work with you to implement the AI stack, which uses best-in-class solutions from NVIDIA, to deliver sustainable, reliable, secure, cost-effective, and peak-value AI solutions. Pairing high-performance file systems with our VSP One storage gives you the fastest time to insights and the best-in-class economics for AI platforms at scale.

In addition to performance, by leaning into over 100+ years of industry expertise from across One Hitachi, including transportation, energy, and manufacturing, we can create the differentiated horizontal and vertical AI solutions you need to set your business apart from the rest.

Accelerate your AI journey with EverFlex AI Data Hub as a Service

Taking on AI can be daunting – particularly if you don't have the resources, skills or capacity. But with our flexible Data Hub as a Service solution, you can rest assured that your data is taken care of and primed for AI. A virtualized data lakehouse gives you a single, unified view of your data, regardless of where it resides. Breaking down silos so your AI solutions can query data in-place – accelerating AI innovation and delivering real-time insights along with significantly reduced cost and complexity.

Hitachi iQ delivers:

Personalized solutions

Built to take on the rigors of AI with compute power delivered by NVIDIA but engineered for industry-specific outcomes and customized to your business's unique needs.

Faster insights

The accelerated architecture delivers massive performance starting at 600 GB/s and 22M IOPS, resulting in as much as a 20x improvement in GPU resource utilization through improved processing.

Scalability

Validated designs and solution blueprints provide the flexibility and scale to rapidly develop, test, and deploy modern AI solutions while adapting to fluctuating customer workload demands.

Lower TCO

Lower cost, erasure-coded, scale-out object storage safeguards data, catalogs for re-use, and stores data long-term while optimizing costs. Infrastructure-as-a-Service offerings can further dramatically reduce TCO and management overheads.

Accuracy

Data is identified, classified, consolidated and prepared to increase data quantity and quality and improve the reliability of results and get more value from AI initiatives.

Success means looking inward

When it comes to the success of AI, the word to remember is intention. Just as everything that goes into the Hitachi iQ platform is intentional, AI projects and pilots must also have intention behind them; it's not just a case of buying more GPUs or downloading some LLMs and seeing what works.

But how do you move forward without becoming overwhelmed by a technology that can seemingly do anything?

It takes a multifaceted approach. One that involves multiple teams – not just senior leaders and IT, but also HR, finance, and lines of business. With a coordinated effort, you can more easily identify the specific tasks that will deliver the fastest value and ensure a cohesive approach to AI.

With a targeted approach from the get-go, and continued focus there on, you can deliver more meaningful outcomes. And training is essential at all levels, because AI isn't just about technology; it's about reshaping how we think, interact with systems, and create new ideas.

Crucially, as we move ever closer to Agentic AI (and whatever the next big thing after that may be), your deployments in GenAI must be flexible and able to adapt to whatever is next. Then you will have the confidence, vision, and certainty to continue your AI journey.

Learn more about our AI Discovery service, and start turning AI into ROI today.

Turn AI into ROI →

Sources

1. https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/superagency-in-the-workplace-empowering-people-to-unlock-ais-full-potential-at-work

Hitachi Vantara

Hitachi Vantara is transforming the way data fuels innovation. A wholly owned subsidiary of Hitachi, Ltd., we're the data foundation the world's leading innovators rely on. Through data storage, infrastructure systems, cloud management and digital expertise, we build the foundation for sustainable business growth.