DELL Technologies

MANUFACTURING
MALAYSIA | SANDISK™

A blueprint for tomorrow's manufacturing

Sandisk achieves lights-out operations and unprecedented efficiency with Dell Technologies and NVIDIA.

Business needs

Many manufacturing companies know that sustainability, efficiency and productivity can be complementary goals, but they lack a clear path to reach them. Sandisk committed to an AI-driven strategy to become a more sustainable, efficient and productive organization.

Business results

Achieved 95% lights-out factory operations.

Reduced CO_2 emissions by 45% and cut factory costs by 32%.

Lowered the number of defective parts per million from 800 to 100.

Accelerated product design process with AI.

Solutions at a glance

- Dell AI Factory with NVIDIA
  - Dell PowerEdge XE-Series servers with NVIDIA accelerated computing
  - NVIDIA AI Enterprise software
  - Dell Professional Services
- Dell PowerEdge R-Series servers
- Dell PowerMax storage
- Dell ProSupport for Infrastructure

NVIDIA

46% reduction in energy consumption achieved with AI-enabled lights-out factory operations.

Sandisk Corporation, the global flash storage leader, began an Industry 4.0 journey by introducing comprehensive automation and robotics to enable lights-out factory operations at its manufacturing facility in the Malaysian state of Penang. The company accelerated innovation with the Dell AI Factory with NVIDIA, implementing an infrastructure for AI and Generative AI solutions. This has placed Sandisk at the leading edge of an industry trend that involves many manufacturers. According to IDC, 73% of manufacturing companies invest in IT infrastructures to support AI workloads and apps, 33% are implementing AI as a top priority for the coming year, and 29% rely on technology to reach their sustainability goals.[1]

Peng Koon Hew, Senior Director of Automation & Analytics at Sandisk, comments, "Drawing on the Dell AI Factory with NVIDIA and the expertise of Dell Technologies in computing hardware customization has enabled Sandisk's shift toward the next phase of digital transformation."

Building solutions on human expertise, AI and edge data

Sandisk deployed the Dell AI Factory with NVIDIA to develop, refine and operate advanced AI and GenAI solutions, including:

- PrimeGPT, a multimodal large language model, combines human expertise and advanced AI to enable continuous innovation and superior efficiency. A big step toward agentic AI, PrimeGPT provides a conversational interface with seamless access to critical information. It also offers a tool for generating images to drive creativity in product design and team collaboration.
- Vision AIoT allows Sandisk to accelerate its sustainability goals by means of outstanding energy efficiencies in a great variety of production environments. Vision AIoT relies on AI applied to data from factory sensors and the Internet of Things to distinguish human from robotic movement to ensure that lights come on only when humans are present in certain areas.

Generating outstanding results in sustainability and efficiency

Sandisk's AI and GenAI initiatives have yielded substantial benefits in terms of sustainability and resource efficiency, including an increase in lights-out factory operations from 80% to 95%. Mr. Hew points out, "As reported by the World Economic Forum, our AI initiatives have resulted in a 32% reduction of factory costs, 46% reduction in energy consumption, and 45% reduction in CO_2 emissions." In addition, Sandisk:

- Reduced material waste per unit by 16%.
- Achieved 99% on-time delivery with a 54.5% reduction in lead time.
- Lowered the number of defective parts per million from 800 to 100.
- Reduced baseline inventory cost by 20% and finished goods and work-in-progress inventory by 42%.[2]

> *"Sandisk is building the future of manufacturing with Dell Technologies and NVIDIA."*
>
> **Peng Koon Hew**
> Senior Director of Automation & Analytics, Sandisk

Empowering the factory workforce

Sandisk employees benefit from the company's GenAI technology in everyday operations. "Ranging from operations to engineering, GenAI has proven to be advantageous for our factory team," says Mr. Hew. "They gain operational insights by extracting and generating information from industrial-standards documentation, perform more efficient code development, can access secure databases to work on product designs, and more — all in a safe and protected environment."

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> Senior Director of Automation & Analytics, Sandisk

Acclaim for AI-powered innovation

The World Economic Forum included Sandisk in its Global Lighthouse Network, naming the Penang factory as Asia's first World Economic Forum Sustainability Lighthouse and as Malaysia's first Advanced Industry 4.0 Lighthouse. Mr. Hew explains, "The World Economic Forum promotes technology-driven industrial transformation that achieves exceptional impact on productivity and sustainability, enabling entire ecosystems to transform for the benefit of mankind and the world we are living in." Visibility for Sandisk's successes continues to mount, including winning two Malaysia Technology Excellence Awards 2025 for AI-powered solutions.[3]

Infrastructure for AI breakthroughs

Dell PowerEdge XE-Series servers with NVIDIA accelerated computing, NVIDIA AI Enterprise software to simplify AI workflow development and deployment, and Dell Professional Services combine to form the Sandisk AI Platform. Dell PowerEdge XE-Series servers deliver maximum performance, flexibility and reliability in large-scale deployments and demanding data center environments. Dell Consulting Services helped plan and implement the lights-out factory operations by adhering to Sandisk's AI strategy. "Powered by the Dell AI Factory with NVIDIA, Sandisk is reinventing AI-driven automation," Mr. Hew says.

In addition, Sandisk relies on Dell PowerMax storage to run mission-critical workloads and intelligent production applications, delivering exceptional performance and secure AI-driven storage efficiency. Dell ProSupport for Infrastructure keeps Sandisk's technologies running smoothly, and Dell PowerEdge R-Series servers are efficient, reliable and high-performing servers that optimize its data center performance. Sandisk's hybrid deployment combines on-premises and cloud technology to achieve optimal data security and allow efficient, real-time updates. Malaysian technology partner Pentech Solution provided expert guidance and deployment support.

Ongoing transformation with ambitious goals

The framework of the Dell AI Factory with NVIDIA is critical for Sandisk's continuing AI innovation. "Sandisk is building the future of manufacturing with Dell Technologies and NVIDIA," says Mr. Hew. "The next evolutionary step for Industry 4.0 is to enable the human-AI connection in smart manufacturing to drive further innovation and increase manufacturing capability."

Learn More About Dell Technologies AI Solutions.

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References:

1. IDC InfoBrief, sponsored by Dell and NVIDIA, "Modern Infrastructure to Compete in the AI Age," #AP242511IB, March 2025.
2. Statistics mentioned here were published by the World Economic Forum in Global Lighthouse Network: The Playbook for Responsible Industry Transformation and The Global Lighthouse Network Playbook for Responsible Industry Transformation (both March 2022). Sandisk became an independent business in February 2025 after separating from Western Digital, which had acquired it in 2016. WEF materials from before the split refer to Western Digital, not Sandisk.
3. The Asian Business Review, Sandisk clinches Malaysia Technology Excellence Awards 2025 for AI-powered solutions, April 2025.