EcoStruxure™
Innovation At Every Level

REMOTE

Clearing the air

NIT Korea Co. Ltd, Seongnam, Gyeonggi, Korea

Better remote management and customer service of pollution reduction systems, with EcoStruxure Machine

EcoStruxure Machine Advisor is part of the Apps, Analytics & Services portfolio of the Schneider Electric IoT-enabled architecture: EcoStruxure Machine. This digital cloud-based services platform enables machine builders to provide new services to machine operators for each installed machine in any production site worldwide.

A breath of fresh air

Little is more basic – or more precious – than the air we breathe, making air quality of paramount importance. Since its establishment in 2003, NIT Korea Co. Ltd (Nature Innovative Technology Korea) has been on a mission to improve indoor air quality by building systems that remove a variety of pollutants produced during industrial activities. For over 18 years, the company has been designing and developing air purification systems and electrostatic precipitators (ESP) with its innovative plasma-based technologies for customers in Korea and around the globe. It has gained a reputation as an industry leader in air purification, particularly for solutions that filter industrial by-products such as white lead, and for developing ESP technologies that comply with stringent international regulations for thermoelectric power plants, steelworks, and coke processing plants.

The demand and market for industrial air purification systems have been on the rise due to increasingly stringent government environmental policies and, more recently, to the impact of the COVID-19 pandemic. To comply with regulations and meet the growing need, the systems built by NIT Korea can be applied in a wide range of areas, including industrial complexes such as power plants and factories or any facilities that are susceptible to air pollution and fine dust particles, including tunnels, subways, parking lots, residential buildings, laboratories, and other public facilities.

Goal

An efficient, predictive maintenance and remote management-ready digital solution for dust collectors installed at industrial facilities around the world.

Story

To accommodate tighter environmental regulations and the growing demand for dust collecting devices, NIT Korea, a leading producer of air pollution reduction systems, leverages the latest remote monitoring technologies to improve customer service.

Solution

A complete EcoStruxure Machine solution, including digital services and power products, with the consultation and support of Alliance Machine Integrator partner, ENES.

Results

- 20% cost savings in investment and workforce requirements
- Increased operational efficiency
- Facilitated new business model to remotely service end users
- Easy-to-implement, cloud-based monitoring system for better customer service
- Single vendor for solution and functionalities that met all the customer's needs
- Full engineering and efficient 24/7 technical support

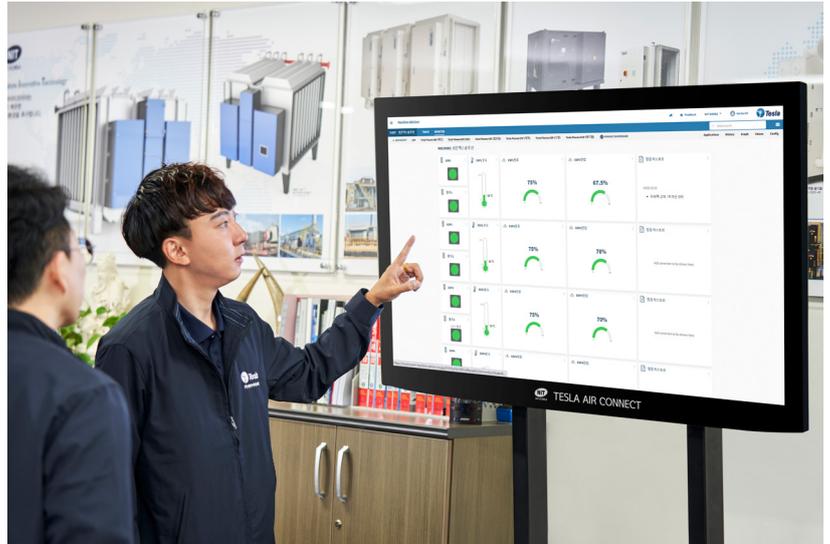Life Is On | Schneider Electric

From reactive to proactive

"As the government's concern for the environment grows, the demand for industrial grade dust collectors also grows. As the market expands, our customers' needs are also diversifying," says Hyung Keun Jeon, General Manager at NIT Korea. "We were looking for a business model that could differentiate our products and services from those of our competitors."

With customers both in Korea and overseas, NIT Korea needed a more efficient way to manage its machines and provide the necessary services, but it lacked sufficient data to determine scheduled maintenance and regular customer visits by staff to provide services onsite were costly.

Instead of waiting to carry out any maintenance work and services until a request came in from a customer or an emergency arose, it wanted a digital solution that would allow it to proactively detect potential failures and respond accordingly, reducing maintenance costs and improving efficiency and the service it could provide to its customers.

It also needed a solution that could be implemented on PCs or mobile devices to monitor machine status in real time based on location, provide alerts, and analyze accumulated data to predict potential failures and time to replace worn components.

When Schneider Electric proposed the remote monitoring technology in EcoStruxure Machine, it was the answer NIT Korea was looking for. The solution would enable them to build a 24/7 customer support system without requiring a large CapEx investment.

Tapping into a wealth of data — remotely

To design, build, and commission the digital solution for its industrial grade dust collection systems, NIT Korea turned to its long-time collaborator and Schneider Electric Alliance Machine Integrator partner, ENES. NIT Korea knew that ENES possessed the necessary expertise to deliver an integrated solution and it had already established itself as NIT Korea's trusted technology partner. An Alliance machine integrator for over seven years, ENES provided:

- Architecture design

- Panel building

- PLC & HMI programming

- Field commissioning

- Service team training (VSD, PLC, HMI) for field optimization

The EcoStruxure Machine solution includes the Modicon M172 controller, Altivar ATV212 HVAC variable speed drives, Harmony HMI, as well as Schneider Electric meters, circuit breakers and contactors. This solution relies on the flexibility of Schneider's EcoStruxure Machine Expert HVAC and Basic software and is monitored in the cloud by EcoStruxure Machine Advisor.

"We are certain that a long and trusted partnership with Schneider Electric will help us confront the challenges of digital transformation in the future."

— Hyung Keun Jeon, General Manager, NIT Korea

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EcoStruxure Machine Advisor consists of three modules:

1. **Track,** which manages a machine fleet (BOM, documents, architecture, etc), logs all activities done on a machine, and manages time-based maintenance tasks for a machine

2. **Monitor,** which collects and visualizes operational machine data, provides alerts on anomalies, creates and manages dashboards, and adds versatile widgets for KPIs such as OEE, energy consumption, machine performance, and more

3. **Fix,** which provides onsite availability of necessary software tools via the cloud to fix machine issues, improve machine code quality, maintainability, and development efficiency with code analysis

For machine builders like NIT Korea, EcoStruxure Machine Advisor opens up access to all machine data anytime, anywhere to ensure higher machine availability through its analytics and notifications. It is also the digital environment for collecting, storing, and providing valuable data related to environmental indexes, something NIT Korea's customers need in order to maintain mandatory operations logs on the emission of pollutants.

Delivering better service

Armed with its EcoStruxure Machine solution, NIT Korea has achieved its goal of improving its customer service through a new business model for remote monitoring and services and reduced its costs by 20% in the process.

Schneider Electric's EcoStruxure Machine Advisor, a cloud-based services platform, has enabled NIT Korea to expand its TESLA E.M.A (Environment Equipment Monitor Advisor) service platform to manage machine information remotely and provide relevant data to its customers, strengthening and differentiating its service capabilities with its new business model. As it expands its digital technologies for predictive maintenance and machine management to all its customers and products, it expects to establish itself as a new services provider, improving customer satisfaction through better and faster service.

"We are expecting to achieve more productivity and efficient machine maintenance by predicting potential failures with Schneider Electric's solution," says Jeon. "We are planning to become a dedicated integrated solution provider that can cover from the design phase to service integration, while increasingly adopting digital technologies."
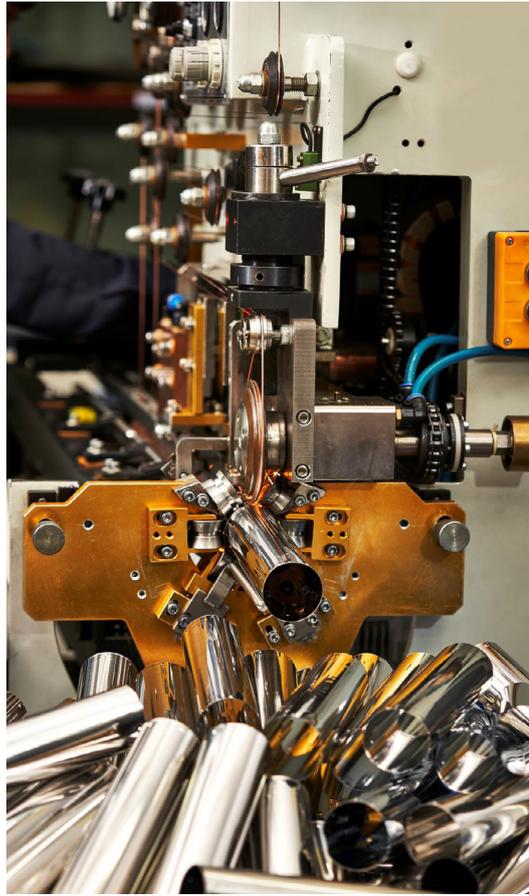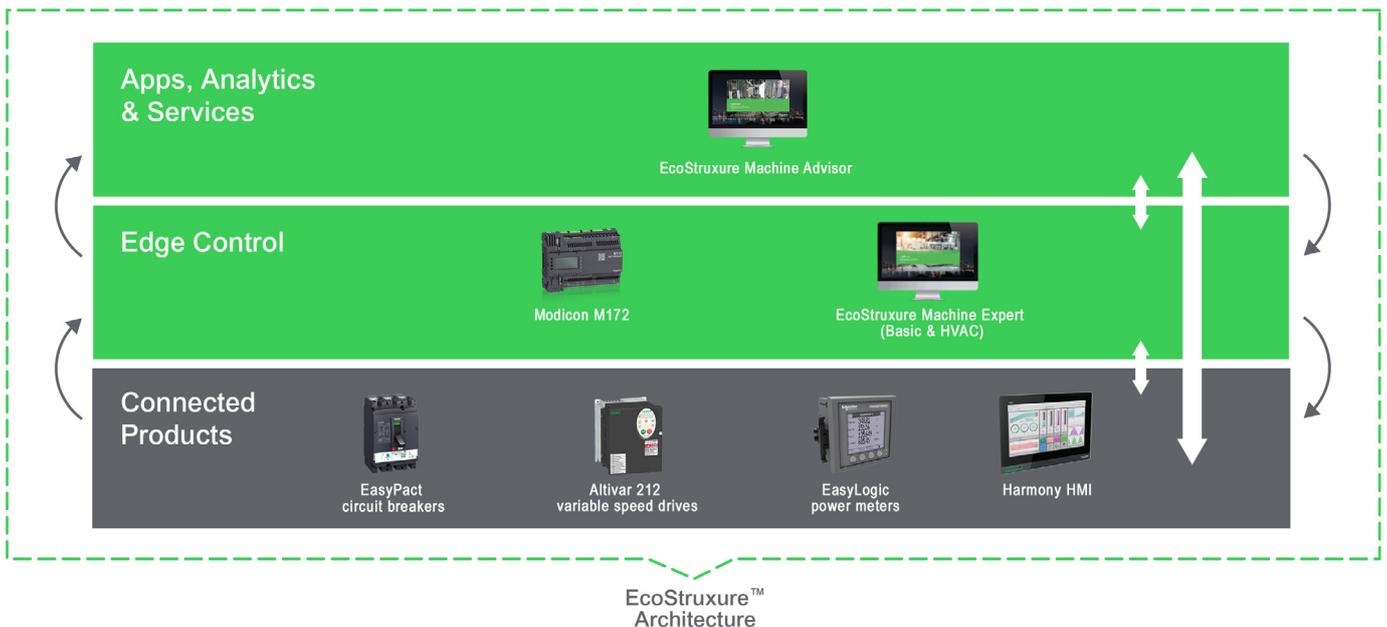
20%
cost savings

Another challenge faced by NIT Korea was its ability to meet the demand for printed circuit boards (PCB) that are broadly used in dust collection. It just didn't have the engineers and other personnel to design the panels. But it did have a technology partner in Schneider Electric. Our fully integrated EcoStruxure Machine solution, including products and services, enables NIT Korea to produce the PCBs that the market needs.

"The EcoStruxure Machine solution has helped us in many areas," says Jeon, "from designing to programming and manufacturing the panels. Schneider Electric's unique engineering capabilities and immediate technical support, in particular, were very helpful in completing each phase of the project.

"We were happy to see the amount of initial investment was reasonable and efficient, so that played a key role in selecting Schneider Electric. We are certain that a long and trusted partnership with Schneider Electric will help us confront the challenges of digital transformation in the future," he concludes.

EcoStruxure™ Machine

Apps, Analytics & Services
EcoStruxure Machine Advisor

Edge Control
Modicon M172
EcoStruxure Machine Expert (Basic & HVAC)

Connected Products
EasyPact circuit breakers
Altivar 212 variable speed drives
EasyLogic power meters
Harmony HMI

EcoStruxure™ Architecture

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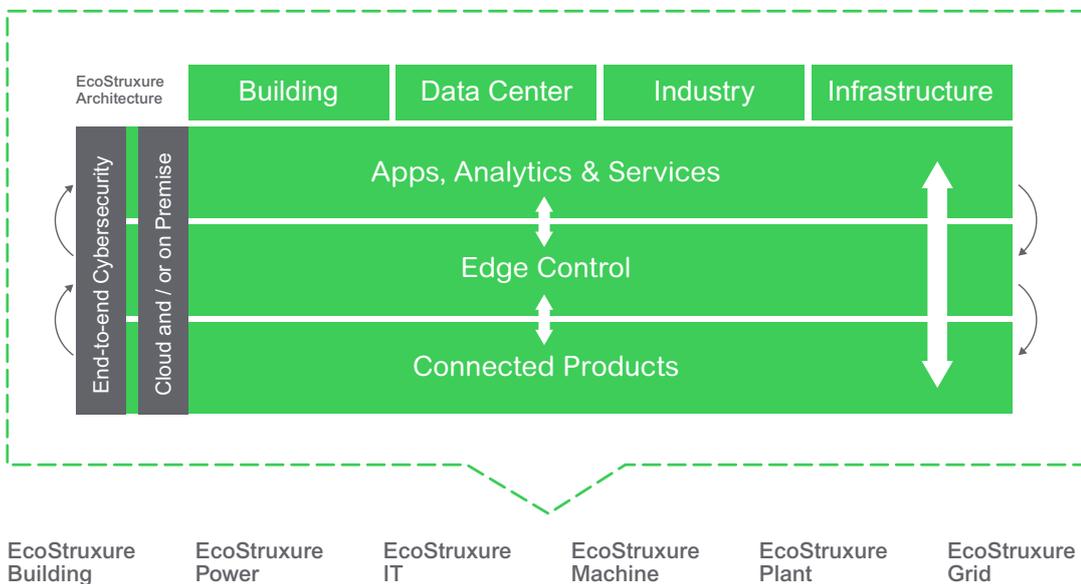
Eco**S**truxure™
Innovation At Every Level

IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is our open, interoperable, IoT-enabled system architecture and platform. EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers. EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level.

This includes Connected Products, Edge Control, and Apps, Analytics & Services which are supported by Customer Lifecycle Software. EcoStruxure has been deployed in almost 500,000 sites with the support of 20,000+ developers, 650,000 service providers and partners, 3,000 utilities and connects over 2 million assets under management.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise

EcoStruxure Architecture	Building	Data Center	Industry	Infrastructure
End-to-end Cybersecurity / Cloud and / or on Premise	Apps, Analytics & Services			
	Edge Control			
	Connected Products			

EcoStruxure Building   EcoStruxure Power   EcoStruxure IT   EcoStruxure Machine   EcoStruxure Plant   EcoStruxure Grid

Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

Find out more about EcoStruxure

se.com/ecostruxure

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of the Future

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EcoStruxure Machine

Digital Services for Industrial
Automation

Modicon, the industrial Edge
control for IIoT

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