

SUSTAINABILITY

Digital innovation for multi-site plant process optimization

From shop-floor to top-floor, Schneider Electric boosts multi-site manufacturing plant performance by up to 5% with end-to-end digital collaboration tools



EcoStruxure™ Plant Lean Management is a comprehensive end-to-end solution based on the AVEVA™ Data Hub platform that digitalizes and optimizes the manufacturing process across one or multiple sites, up to several hundred. It is part of the Schneider Electric™ Apps, Analytics & Services range, leveraging an open, scalable, and cybersecure industrial internet of things (IIoT) platform.

Background

Manufacturing plants have long served as a backbone for the continued success and growth of the Schneider Electric corporation, with annual revenues exceeding €34 billion. The company conducts business in over 100 countries and has established itself as a global leader in manufacturing full lifecycle industrial process automation and energy technologies, endpoint-to-cloud connected products and solutions, and industrial and energy management software and services.

Schneider Electric's 135,000 employees and 200+ manufacturing sites are dedicated to driving the availability of sustainable solutions across global industries. In many cases, Schneider Electric's supply chain digital transformation solutions are first developed for internal use and field tested in its own factories. Once proven to cut costs and drive revenues, these solutions are made available to the marketplace.

Sustainability and supply chain excellence are core business values

Schneider Electric's commitment to sustainable operations has always been firm, with the objective to have carbon-neutral operations by 2025 and net-zero emissions operations by 2030.

Corporate Knights ranked Schneider Electric 1st in its peer group and 7th worldwide in 2023 out of more than 7,000 global companies assessed for sustainability. In 2023, Schneider Electric was recognized by Gartner as the #1 best supply chain in the world, building on its Tailored Sustainable Connected 4.0 program, which places sustainability at the heart of the supply chain.

Goal

Digitize 200 global manufacturing sites over 18 months by implementing new digital tools that streamline lean manufacturing short interval management (SIM) processes.

Story

A leading global industrial automation and energy management manufacturer involves employees from shop-floor to top-floor to help implement a team collaboration tool that improves overall plant productivity by up to 5%.

Solution

Ecostruxure Plant Lean Management, a digital solution that collects all information technology (IT) and operational technology (OT) relevant data for key performance indicators (KPIs) used in Lean Manufacturing SIM meetings.

Results

- 70,000 engaged users across 200 sites in < 18 months
- 4-5% average increase in overall manufacturing site performance
- 25% time reduction for data collection activities
- 33% reduction in shift handover activities
- < 4-hour on-site software deployment and configuration for new sites
- All SIM key metrics provided (i.e., safety, performance, service level, customer satisfaction, and quality)
- Historical data available from prior 12 months, as needed

Factory digitization efforts enable innovation and new ways of working

Over the recent years, Schneider Electric has internally implemented several key initiatives to achieve corporate sustainability, efficiency, and profitability goals. Their Global Supply Chain organization drove one such effort to digitize and modernize worldwide plant operations.

The organization launched an internal **lean digitization** initiative across its global factories and distribution centers. This program was not a massive top-down digitization project. It was developed to engage the factory employee base and to focus on low-cost/rapid implementation opportunities to drive production.

Two factories directly impacted by the initiative are Carros and Le Vaudreuil, a World Economic Forum-recognized Lighthouse factory. The plant sites implemented key digitization strategies to drive efficiencies and maximize their ability to respond to rapidly changing customer demands.

One of the critical solutions deployed at those sites to help address challenges involved a collaborative tool called **EcoStruxure Plant Lean Management**. This digital solution that collects relevant data for KPIs used in lean manufacturing's so-called SIM cycles.

Challenges to overcome

When deciding which solution to choose for driving digital transformation in their plant operations, Schneider Electric Global Supply Chain senior managers first identified their four most significant business challenges:

1. Worker acceptance – The management team needed a robust, user-friendly shop-floor to top-floor work collaboration application that could accommodate thousands of users across many plants. The team wanted to provide their employees with both on-site and remote data access from any of their plants and looked for easy integration with existing legacy data sources.



2. Streamlined issue escalation and resolution

– As teams were using SIM approaches to boost productivity, management needed a digital tool to increase the speed and efficiency of the SIM cycles. The goal was to accelerate the pace of idea generation and streamline the escalation and issue resolution processes.

3. Open system implementation – The ability of all legacy and existing IT and OT data sources to integrate into a more open, cybersecure technology platform was also deemed critical for success and served as a technical prerequisite for selecting the solution.

4. KPI integration – The existing assessment of efficiency, safety, and sustainability process indicators needed automation to align ideas and corrective actions more directly to pre-defined KPI targets.

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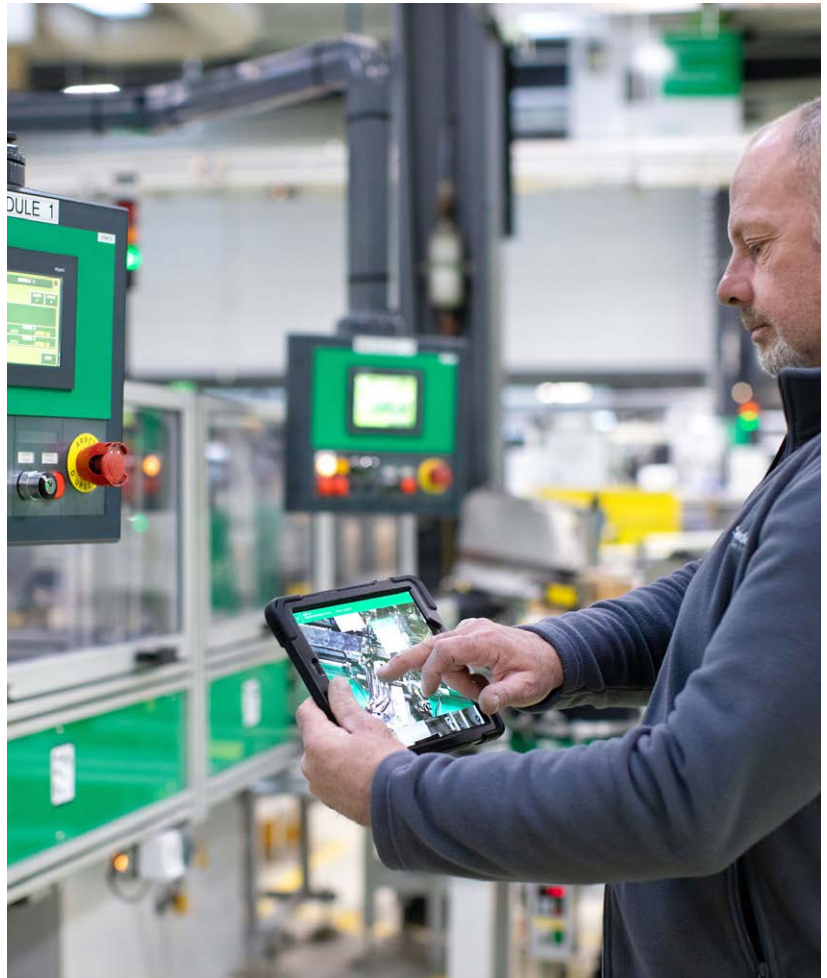
— Philippe Sola,
General Manager
at Carros Plant,
Schneider Electric

To overcome these four business challenges, the digital transformation required a simple and fast way to reduce Lean Management SIM-cycle meeting-related paperwork and manual data collection. Plant executives were looking for a technology roadmap and process methodology based on open standards, with technologies that would be easy and flexible to deploy.

Plant employees at all levels needed to be involved in enabling the free flow of ideas and related follow-up actions. Operators, production line supervisors, and plant managers would require easy access and real-time visibility to current issues and problem resolution status.

By making this data visible to plant floor workers for the first time, such a tool would accelerate their ability to make quick yet accurate decisions. The deployed solution would also help management-level employees to expedite issue escalation and remediation.

According to Emmanuel Morice, Schneider Electric General Manager at the Le Vaudreuil Plant, "This tool met the needs of employees in the production sectors and the support services such as health, safety, quality, supply chain, and maintenance processes. We have goals to improve our productivity by about 7% every year, and above all, we seek to accelerate our ability to observe and decide."



EcoStruxure Plant Lean Management solution drives productivity improvement

After carefully considering the digitization requirements, the Global Supply Chain organization deployed EcoStruxure Plant Lean Management across 200 global plants. The solution works with the AVEVA Data Hub IIoT platform, Apps & Analytics, and edge software for on-premise data collection.

EcoStruxure Plant Lean Management is an IIoT, open, scalable, cybersecure, and multi-site solution for SIM cycle digital lean management that acts as a smart factory digital brain by consolidating data from multiple key operation sources. The solution creates a global framework for all plants and drives plant-by-plant flexibility by enabling functional additions based on local needs.

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— Emmanuel Morice,
General Manager
at Le Vaudreuil Plant,
Schneider Electric

Plant floor workers can now suggest ways to rapidly improve production systems using this brand-agnostic, open tool. Operators, for instance, can raise issues with supervisors, who are then committed to action dates for addressing the issues. If not sufficiently addressed at the supervisory level, the connected worker platform automatically escalates it to the next level in the plant organization.

The EcoStruxure Plant Lean Management solution displays data and KPIs to reflect how the various teams manage their performance. When it becomes apparent that progress against a particular KPI is missing a target, workers can create a suggested action or idea to improve its progress or remove the bottleneck that is preventing better performance.

Shop-floor to top-floor acceptance enables exponential benefit sharing

From a technology integration perspective, the solution supports easy IT/OT integration. It can be implemented on-site in less than four hours, offering users easy-to-interpret plug-and-play features.

Once installed, the system tracks historical data, performing analytics on data from the prior 12 months if needed. The system also generates key SIM cycle process metrics, including safety, performance, service level, customer satisfaction, and quality (CS&Q) measurements.

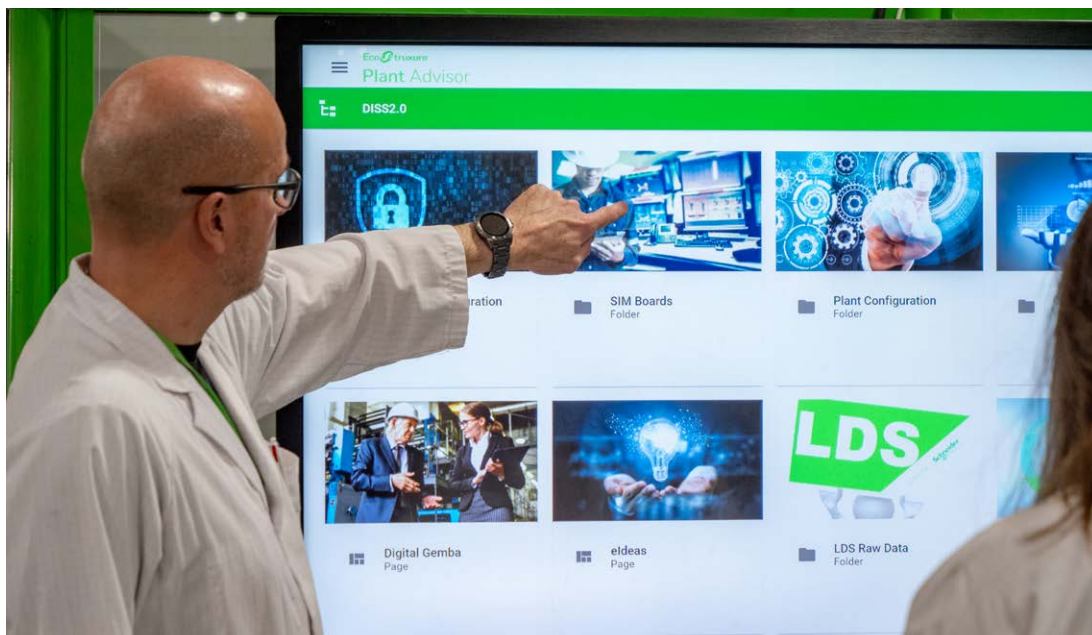


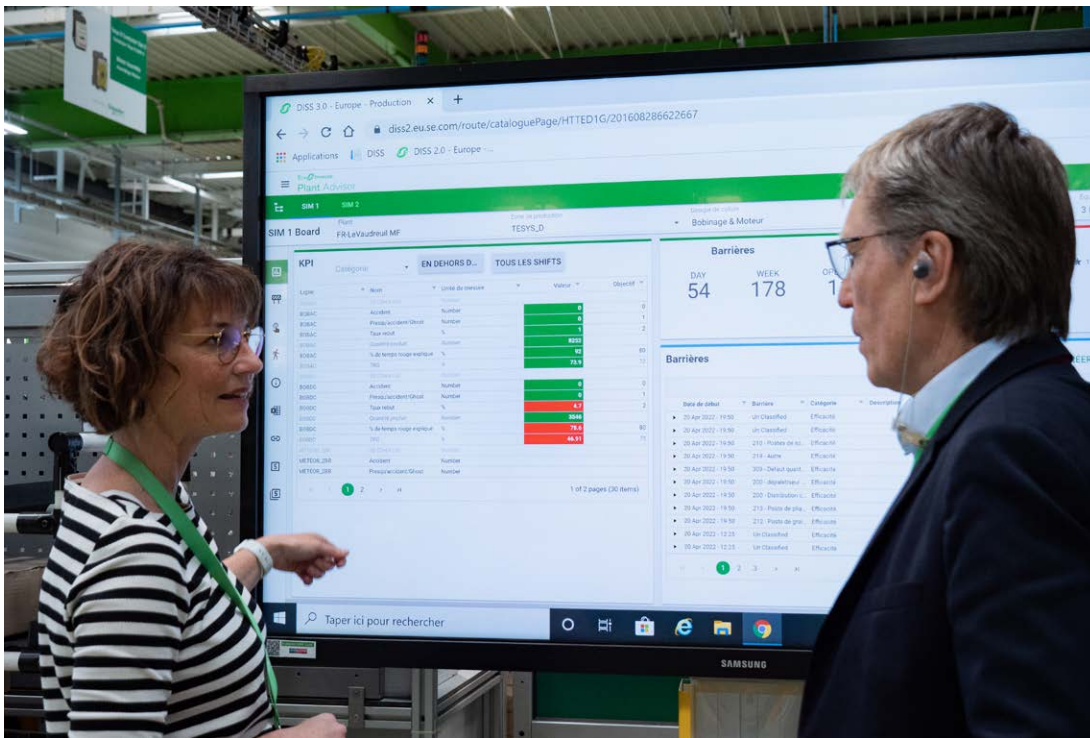
Workers use the web-based application to digitize their workflow and input new ideas to generate higher operational efficiencies. The time spent on updating SIM boards is reduced, and processes for escalation, communication, and review of actions and ideas are accelerated.

Tens of thousands of front-line workers worldwide (including those in the Carros and Le Vaudreuil plants) using the tool are now empowered to facilitate continuous improvement activities. Shop floor workers have also eliminated many non-value-added tasks, allowing them to focus more on core activities.

“EcoStruxure Plant Lean Management is used daily by 100% of our employees, operators, and team leaders. It is at the center of our daily performance meetings and enables us to improve our site performance by 4 to 5%.”

— Philippe Sola,
General Manager
at Carros Plant,
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Rapid rollout fuels productivity gains

Schneider Electric has deployed the EcoStruxure Plant Lean Management solution across 200 global manufacturing sites. As shop floor employees discover the power of digitization, they immediately begin to generate new ideas and invent new ways of driving additional productivity and efficiency approaches that were never before considered.

According to Philippe Sola, General Manager of the Schneider Electric Carros Plant, “It enables us to increase our response times, with the possibility of escalating priority actions during the course of the day.”

Another unexpected benefit the plants encountered when rolling out the solution was the high degree of employee enthusiasm and acceptance. “Employees see their issues shared with top management and benefit from quicker management decisions,” says Guillaume LeNotre, Schneider Electric Smart Factory project leader at the Carros, France plant. “EcoStruxure Plant Lean Management strongly impacts employee motivation. Using the collaborative mobile app to compare performance injects a fun aspect into the process.”

Empowered workers drive the process efficiencies

The manufacturing teams have experienced several benefits that have helped them to better fuel Schneider Electric’s corporate business growth:

- **Higher performance** – Once employees achieved confidence in the new system, performance numbers began to accelerate rapidly. Overall plant performance has increased by up to 4-5%, with overall equipment effectiveness (OEE) increasing by 8% over only one year.
- **Broad worker acceptance** – By involving workers at the grassroots level from the very beginning of the digitization initiative, it became much easier for them to accept changes to how they execute daily tasks. More than 70,000
- employees are now global users of the EcoStruxure Plant Lean Management tool, with an average of 3,000 concurrent users per shift per day.



- **Empowered workers** – Shop floor workers can quickly analyze ideas and actions, accelerating decision-making and problem-solving in lean manufacturing meetings. They also do not have to wait long to see their valid suggestions implemented. Escalation of priority actions now can occur the same day as all escalations are visible and can be tracked, driving significant efficiency gains. Plant operators have greater autonomy and responsibility for how equipment runs, enabling them to make quick and accurate production decisions.
- **Increased efficiency** – Since process efficiency KPIs have been standardized and automated, process execution efficiency has increased across multiple levels of the SIM cycle process, impacting both production and maintenance level performance. For instance, management teams observed reductions of up to 25%

in data collection activities for SIM meetings, reductions of up to 33% in shift handover activities, and 10% reductions in maintenance and support interventions.

- **Improved safety** – Safety issues have been reduced by sharing real-time proactive safety alerts and security incident warnings.

Global Supply Chain and workers receive recognition

As a result of their collective plant digitization initiatives, Schneider Electric's Global Supply Chain organization has been universally recognized for the efficiency of its smart factories. The organization has been ranked #1 in "The Gartner Supply Chain Top 25 for 2023" ratings and has successfully deployed its own *Tailored Sustainable Connected Supply Chain 4.0* program.

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For more information

Now that new digital solutions such as **EcoStruxure Plant Lean Management** solution based on AVEVA Data Hub have proven successful in boosting plant productivity and worker efficiency, Schneider Electric is making the solution available to its industrial customers in the many discrete manufacturing sectors so they can enjoy the benefits of smart factory technologies.

Discover how Schneider Electric and AVEVA help maximize value from industrial assets. Digital transformation solutions, combined with leading-edge industrial software, help increase profitability, drive higher sustainability, and empower people.

AVEVA

Learn more

Life Is On

Schneider
Electric

Learn More



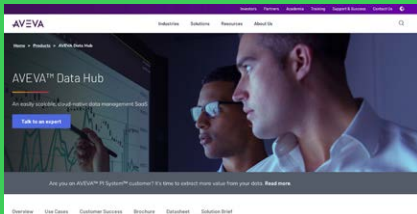
Learn more about how Schneider Electric EcoStruxure Plant Lean Management solution can help to drive new levels of efficiency in your manufacturing facilities



Read how Schneider Electric leveraged EcoStruxure Plant Lean Management solution in their own global supply chain



Watch how to remove the barriers to data sharing with AVEVA Data Hub platform



Discover AVEVA Data Hub industrial cloud platform, an easily scalable cloud-native and data management SaaS



Discover Schneider Electric EcoStruxure's open, scalable, cybersecure, pre-packaged IIoT solutions for a sustainable and profitable digital transformation



Learn more about The Factory of the Future and its benefits from digitally transforming to consume less energy and water to reduce CO₂ emissions

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