Resilient Supply Chain

EcoStruxure™ enables trust in the Food & Beverage, Household and Personal Care industries.
We help on every step of the value chain

Efficient facilities
Safer, more available, and greener resources

Agile manufacturing
Boost manufacturing flexibility & efficiency

Resilient supply chain
Manage complexity and improve visibility

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... enabled by transversal digital transformation capabilities

Food Safety & Traceability
Ensure compliance and increase trust across the whole value chain

Energy & Sustainability
Reduce environmental footprint and meet sustainability goals

Asset Performance
Maximize return on asset investment

Workforce Empowerment
Take teams efficiency to the next level

Digital Engineering
Cut time, cost and risks of capital project engineering
Manage complexity and improve visibility across your Supply Chain

**Agriculture efficiency & sustainability**
Help farmers and agri-business improve productivity, better manage the use of resources and achieve regulation compliance and traceability.

**Increased productivity** while ensuring safety

**Greater yield** leveraging digital solutions

**Warehouse management**
Ensure process, control and optimization of warehouse operations to improve efficiency and address ecommerce imperatives.

**Increase your visibility, improve agility and performance to build a resilient supply chain, end-to-end.**

**Supply chain optimization**

**Build a resilient Supply Chain**

**Product Information Management**
Ensure the right information related to the product is available for a seamless omnichannel retail experience.

**Cold chain monitoring**
Manage efficiently your assets tracking, performance and maintenance to optimize your supply chain logistics.

**Up to 17% increase in data accuracy**

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Resilient Supply Chain
Manage complexity and improve visibility across your supply chain

Warehouse Management
Ensure process, control, and optimization of warehouse operations from receiving and shipping product items

Cold Chain Monitoring
Manage efficiently your assets tracking, performance and maintenance to optimize your supply chain logistics

Agriculture efficiency & Sustainability
Help farmers and agri-business improve profitability and better manage resources

Supply Chain Optimization
Get visibility into your entire suppliers’ network. Help operational and strategic decisions for efficiency and profitability

Product Information Management
Ensure the right information related to the product is available for omnichannel retail
Agriculture Efficiency & Sustainability
Help farmers and agri-business improve productivity and better manage the use of resources

• **Increase productivity**
  Increase operational efficiency and enhance product quality and storage through automation technologies

• **Achieve sustainable energy management**
  Gain visibility on energy usage for proactive and efficient management of the energy cost and usage.

• **Optimize irrigation and water management**
  Improve water management through efficient irrigation and optimized water pumping using fully automatic systems integrating IoT for remote control monitoring
Agriculture Efficiency & Sustainability

Help farmers and agri-business improve productivity, better manage the use of resources and achieve regulation compliance and traceability.

• The pandemic exposed the fragility of a global agrifood system and accelerated the drive for a zero emissions future.

• The food system remains one of the primary driver of climate change.

• Regulation such as the European Green Deal and the Farm to Fork Strategy set out a vision to change the way we value food sustainability by reducing food loss and waste while not increasing emissions associated with production.

• Regenerative farming/agriculture is one approach having the potential to reduce climate change instead of contributing to it.

Source: EITfood, 2020;
Agriculture Efficiency & Sustainability

Main Challenges

Increase Productivity
- Connected sensors/IoT
- Automatization of operations
- Software solutions
- Collaborative platforms

Enhance Water and Energy management
- Irrigation solutions
- Water consumption monitoring & management
- Energy consumption management monitoring

Manage Regulation & Traceability
- Robust documentation for regulation compliance and trading with partners
- Real-time critical data sharing with the ecosystem
- End-to-End Traceability

Use Cases

Precision Farming / Precision Crop Management
Vertical Farming and Smart Greenhouses
Livestock Management
Fish Farming Aquaculture
Automation technologies & Software Solutions
For increased productivity, yield and improved quality

The solution

Business value

- Optimized production conditions through data analysis
- Increased operational efficiency and reduced costs through automation
- Remote capabilities: monitoring and alert notifications
- Greater reliability and uptime to increase production
- Increased productivity and yield
- Enhanced product quality
- Improved animal welfare

Watch the video
Customer Challenge
• Closed proprietary system expensive to maintain and modernize (Packhouse automation system)
• Requires open future ready system.
• Limited energy supply, needs full optimization of available power

The Solution
• EcoStruxure plant incl.:
  • Modicon M340 PLCs
  • Altivar drives
  • HMI
  • Circuit Breakers
  • Contactors

Customer Benefits
• Improved reliability and uptime to increase production
• Solution enabling energy management
• Future improvement: machine learning – cloud based

The Results: Life is On with... Expanded packhouse production output
Increasing productivity in poultry production while ensuring animal welfare

Global Poultry producer

Customer Challenge
- Identify and monitor individual birds for desirable growth traits and feed consumption, assuring welfare while reducing feed costs

Solutions
- Telemecanique Sensors solutions incl.: customized RFID Readers and firmware integrated into customer’s feed stations with RFID tags placed on each bird to identify, record weight and amount of food consumed
- Modicon PLCs, Control & Signaling components

Customer Benefits
- Simple robust solution in a complex, crowded environment
- Developed over 3 years with strong collaboration with customer’s R&D team.
- Rigorous testing and pilot deployment in US and Europe

The results: Life Is On with... Increased productivity while ensuring animal welfare

Global network of 7 major facilities, with 450 Feed Conversion Systems per facility, each using 8 RFID readers
Customer Challenges
Create and tightly control an artificial environment to maintain optimum growing conditions: light, temperature, humidity, watering.

The Solution
Schneider Electric’s reputation for high quality and reliability are the main reasons why Australian Vanilla Plantations chose to install an EcoStruxure Plant solution with the Modicon M172 PLC and Altivar Process variable speed drives. These products deliver the automation and efficiency essential for maintaining the ideal growing conditions for the vanilla orchid’s beans.

Customer Benefits
- Increased efficiency and reduced operational costs due to the automation of processes such as ventilation, water misting, temperature control
- Remote access capabilities which allow the team to receive alerts and monitor conditions when offsite
- Improved reliability in a harsh environment
- Optimized growing conditions through data analysis to constantly adjust and improve growing capabilities

Life Is On with... 20x greater yield than a traditional plantation, leveraging automation technologies

“We could not have come as far as we have without the support and progressive nature of Schneider Electric.”

David Soo
CEO of Australian, Vanilla Plantations

Innovative vanilla producer uses advanced research and automation to cultivate the highly prized beans.
Customer Challenge
- Operate a big land-based RAS (Recirculating Aquatic System) modular fish-farming plant efficiently and sustainably, in natural surroundings close to a recreation area, with extra strict environmental requirements regarding noise and emissions.
- Need to ensure constant water conditions – level and quality – in a prefabricated module installed in remote locations

Solutions
- EcoStruxure™ Plant with connected products and AVEVA Software solutions, to remotely manage the whole plant
- EcoStruxure™ Secure Connect Advisor for cybersecurity
- EcoStruxure™ Power connected ACB and CCB
- Pump application Drives (ATV Process)
- Telemecanique sensors: XMLP pressure transmitters, XCS safety switches, XX ultrasonic and XS inductive sensors

Customer Benefits
- Complete hardware and software solution for automation and electro from one supplier
- A cyber-secure plant for best possible fish-health + top productivity
- Predictive maintenance to avoid down-time and lower OpEx
- Energy and resources savings: low energy consumption and environmental blueprint
- Intelligent remote control, resulting in meaningful analytics and more informed decision-making for operations.

The Results: Life Is On with... Increased productivity and improved quality

A fully automatized fish-farming plant with 6000 m² surface / 20-30 employees.
Energy Management & Sustainability Solutions
Digital solutions and associated services for reliable and green energy systems

The solution

Business value

- Integrated platform for energy and building management
- Increased visibility on energy usage
- Improved energy efficiency
- Support to achieve Zero emission of green house gases
- Proactive management of the Energy cost and usage
- Microgrid-as-a-service business model helps save capital while also immediately benefiting from more efficient, sustainable and economic energy consumption.
- Smart, reliable, flexible and green energy systems enabling farmers to cultivate crops in off grid areas

Watch the video
Agro-Invest, Russia
The fastest growing modern greenhouse complex to grow fresh vegetables.

80 hectares of modern greenhouses. Over 25 varieties of vegetables every year and annual capacity of 35,000 tons.

Customer Challenge
• Improve operational efficiency and reduce energy-related costs
• Ensure electrical network reliability and reduce downtime
• Optimize equipment utilization and reduce the cost of operations

Solution
• EcoStruxure Power Monitoring Expert
• Integration of existing power meters, relay protection and MES
• Service expertise to develop Energy Efficiency improvement

Customer Benefits
• Simple and fast project delivery due to easy integration of existing devices and systems
• Visible impact of temperature, occupancy, or production values on energy usage
• Reliable, flexible and customized tool that help achieving energy saving targets
• Energy efficiency increase and emissions reductions
• Full utilization of the Energy assets

The Results: Life is On with... Proactive management of the Energy cost and usage

<table>
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Customer Challenge
• Harsh environmental conditions for electrical equipment (heat & humidity) leading to big challenge to maintain the equipment into proper working conditions
• Solution to detect equipment failure in an automated way and to facilitate the diagnostic in order to minimize operations shut down.

The Solution
• Set of wireless sensors for temperature and humidity installed in different critical points.
• EcoStruxure Asset Advisor solution

Customer Benefits
• Monitoring of the equipment’s life cycle
• Fast clearing of the failure when it happens
• Support to the maintenance team to identify and detect failures
• Efficient and reliable operations as critical environmental data are available

The Results: Life is On with... Reduced time of intervention and costs linked to operations shut down
Customer Challenge
• Provide an energy management solution
• Centralized system focused on improved production efficiency, reliability and simplified maintenance
• Ensure full compatibility between systems and locations

The Solution
• EcoStruxure Building Operation
• EcoStruxure Power Monitoring Expert
• EcoStruxure Power Advisor
• EcoStruxure Power Quality Advisor
• Power Meters

Customer Benefits
• Delivery of an integrated platform for energy and building management
• Standard solution easy to deploy to other sites worldwide and new facilities

The Results: Life is On with... Partnership agreement signed. Schneider Electric listed as preferred vendor for long term relationship.
Customer Challenge
• Design, build and finance a microgrid for robotic indoor farming pioneer Fifth Season.
• Scale Microgrid Solutions, own, and operate the system with SE solutions to deliver sustainable and dynamic energy management for Fifth Season's newest, highly autonomous vertical farm in Pittsburgh, PA (60,000-square-foot facility)

The Solution
• Scale Microgrid Solutions including rooftop solar array, natural gas generator and a lithium-ion battery energy storage system leveraging EcoStruxure Microgrid Advisor software platform to collect, forecast and optimize operations

Customer Benefits
• Microgrid-as-a-service business model helps save capital that can be used toward additional operational investments, while also immediately benefiting from more efficient, sustainable and economic energy consumption.

The Results: Life is On with...
Reach full production potential with a smart, reliable and green energy system.

“Our vertical farm in Pittsburgh is reconnecting consumers to locally grown fresh food. This is a first step in solving some of the largest problems facing society caused by the broken food system, however, this industry must achieve long term economic and environmental sustainability. This microgrid enables our journey to create a sustainable system that delivers healthier, fresher greens to local communities through both economic and environmental efficiencies.”
Grant Vandenbussche, Chief Category Officer at Fifth Season.
Irrigation & Water management Solutions
Digital solutions and IoT integration for efficient irrigation and water management

The solution

Business value
Pumping of water for irrigation supply in off grid areas: fully automatic system to provide water at affordable cost
Remote control, monitoring and digitization of the maintenance of irrigation systems
Optimization of water pumping and field irrigation
Precise, reliable data provided about the installation in real time for greater machine availability and process reliability
Increased response time to quality issues
• Secure production continuity, more efficient and effective water usage and management
• Single integrated view of critical irrigation assets
• Typically 20% increase in productivity

Learn more
Customer Challenge
• Optimization of the complex irrigation system
• Control of the energy performance and real time maintenance management of the system in place

The Solution
• Altivar Process Speed Drive
• Real-Time, easy to understand and relevant data displayed: flow, cumulated water consumption and duration of irrigation

Customer Benefits
• Optimization of water pumping and field irrigation
• Remote control and monitoring of the irrigation system
• Digitization of the maintenance

The Results: Life is On with... Typically 35% energy consumption reduction and 20% increase in productivity
Customer Challenge
• Digital solution for water pumping stations and irrigation systems
• Solution enabling to connect unreachable assets in the field

The Solution
• Cloud connected sensor XIoT from telemecanique sensor

Customer Benefits
• Ease of use
• Precise, reliable data provided about the installation in real time such as status of the solution so farmer can immediately place the irrigation solution to other field location
• Solution enables increased productivity and time saving
• Quick and easy to install
• Real Time Data & alarms sent to the cloud, all accessible on mobile devices
• Data can be configured to suit users requirements

The Results: Life is On with... Greater machine availability and process reliability

Link to video

Lesieur SA is a dealer of agriculture material and machine including water pumping stations and irrigation systems for farmers
Customer Challenge
• Critical assets are remote and isolated
• Increasing regulatory requirements
• Obtaining visibility into system status and performance

The Solution
• AVEVA InSight
• EcoStruxure Geo SCADA Expert (Clear SCADA)
• SCADAPack 500E rPAC
• Altivar Process 600, Trio Q Radio

Customer Benefits
• Single integrated view of critical irrigation assets
• More efficient and effective water use
• Significant time savings

The Results: Life is On with...
50% reduction in energy costs in the first season using SCADAFarm

“By leveraging our relationship with Schneider Electric, we can focus on our core business – effective water management – knowing that the information management, analytics and automation side is covered”.

Ron McFetridge
Director, WaterForce

Link to Video
Link to Paper
EcoStruxure™ Process Expert – Grain Silo Manager
Integrated automation solution for Grain silos

The solution

- **Field proven standard** hardware and software solution
- Faceplates for any equipment (Operator modes, failures, parameters, maintenance information)
- **Energies measurement and preventive maintenance** (running hours, number of equipment’s operations)
- **Route selection** based on equipment’s availability
- **Routes management** for grains handling
- Management of products’ constraints (prevention of products’ mixes, forbidden routes…)
- Parametization depending on products & routes (timers, conveyors speeds, energies, densities…)
- Operators profiles & privileges, Remote Access

Business value

- **Scalable** solution to the size of the grain elevator
- Easy to integrate: 50% reduction in development time
- **Energy Management**: real-time reporting of energy usage
- Open standard system for end-users and integrators
- Ergonomic and customizable supervision
- Easy to maintain and easy to use
- Advanced functionalities: control of fans, humidity, temperature
- Easy to deploy across different sites

Learn more
Customer Challenge
• Modernization of Grain Elevator’s automation

The Solution
• EcoStruxure Process Expert with Grain Silo Library

Customer Benefits
• Easy to integrate
• Customizable solution
• Open system
• Support Energy Management approach
• Ease of use: simple visualization, dedicated library with grain elevator objects and standard icons

The Results: Life is On with...50% reduction in development time

90 plants. 3,500 members
2 sites using Grain Elevator Management solution

Grain Cooperative, France
Grain Elevator’s automation

Connected products
Edge control
Apps, analytics, and services
EcoStruxure Process Expert
Grain Silo Manager

Life Is On
Family Owned business chooses redundant Grain silo automation

Customer Challenge
• Modernization of Grain Elevator’s automation

The Solution
• EcoStruxure Process Expert with Grain Silo Library
• Redundant installation
• Modicon M340

Customer Benefits
• Very high level of automatic generation of the control application thanks to the Grain Silo library
• Grain Silo supervision application very well accepted by the users
• Very rich and comprehensive library for grain handling
• Full integration of the grain silo library into the EcoStruxure Process Expert application for grain routes management and products’ quality

The Results: Life is On with...Modernization of silo with improved product quality

Family owned business with 30 locations across France, 5,000 customers and 200,000 tons of grains collected per year
Resilient Supply Chain
Manage complexity and improve visibility across your supply chain

- **Warehouse Management**
  Ensure process, control, and optimization of warehouse operations from receiving and shipping product items

- **Cold Chain Monitoring**
  Manage efficiently your assets tracking, performance and maintenance to optimize your supply chain logistics

- **Fields & Farms**
  Agriculture efficiency & Sustainability
  Help farmers and agri-business improve profitability and better manage resources

- **Cooperative**
  Supply Chain Optimization
  Get visibility into your entire suppliers’ network. Help operational and strategic decisions for efficiency and profitability

- **Manufacturing**
  Product Information Management
  Ensure the right information related to the product is available for omnichannel retail

- **Distribution**

- **Retailer**

- **Consumers**

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EcoStruxure for Food & Beverage / CPG

Agile manufacturing
Boost manufacturing flexibility and efficiency
Manufacturing Operation Management
Industrial Information Management
Process Control System
HMI and data Integration
Process Automation
Packaging Automation

Efficient facilities
Safer, more available, and greener resources
Smart Building Management
Power Safety & Availability
Power Quality & efficiency
Renewable Energy & Microgrids
IT Infrastructure Management

Resilient supply chain
Manage complexity and reduce logistics costs
Agriculture Efficiency & Sustainability
Suppliers Management
Supply Chain Optimization
Cold Chain Monitoring
Product Information Management

Food Safety & Traceability
Ensure compliance and trust across the product life cycle
Food Defense
Cybersecurity Services
Digital Calibration
Raw material traceability
Production traceability
Product Identification & Tracking
Sustainability Consulting
Energy Demand Services
Strategic Energy Sourcing
Enterprise data management
Energy as a Service
Assessment and Consulting
Enterprise Asset Management
Condition Monitoring
Predictive Analytics
Line & Process Optimization
Modernization services
Operator Training Simulator
Augmented & Virtual Reality
Workflow Management
Staff Schedule Management
Operator Knowledge Sharing

Energy & Sustainability
Reduce footprint and meet sustainability goals
Assessment and Consulting
Energy Demand Services
Strategic Energy Sourcing
Enterprise data management
Energy as a Service
Sustainability Consulting
Energy Demand Services
Strategic Energy Sourcing
Enterprise data management
Energy as a Service

Asset Performance
Maximize return on capital expenditure
Assessment and Consulting
Enterprise Asset Management
Condition Monitoring
Predictive Analytics
Line & Process Optimization
Modernization services
Operator Training Simulator
Augmented & Virtual Reality
Workflow Management
Staff Schedule Management
Operator Knowledge Sharing

Workforce Empowerment
Improve staff knowledge, productivity and collaboration
Assessment and Consulting
Enterprise Asset Management
Condition Monitoring
Predictive Analytics
Line & Process Optimization
Modernization services
Operator Training Simulator
Augmented & Virtual Reality
Workflow Management
Staff Schedule Management
Operator Knowledge Sharing

Digital Engineering
Cut time, cost and risks of capital project engineering
Assessment and Consulting
Enterprise Asset Management
Condition Monitoring
Predictive Analytics
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Modernization services
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Let’s talk about EcoStruxure for Food & Beverage