



## Schneider Electric, the Global Specialist in Energy Management and Automation

€24.7 billion  
FY 2017 revenues

~5%  
of FY revenues devoted to R&D

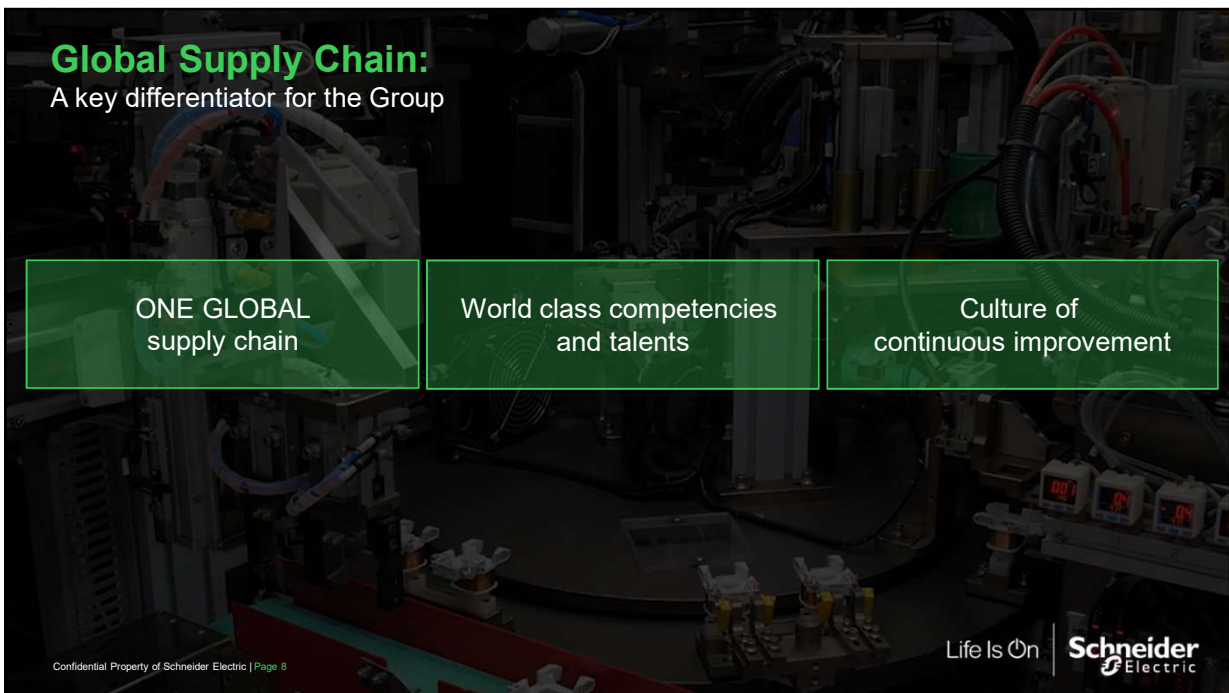
144 000  
people in 100+ countries

### Four integrated and synergetic businesses FY 2017 revenues

Buildings & Partner	Industry Infrastructure	IT
43%	22%	15%

### Balanced geographies – FY 2016 revenues





## Global Supply Chain

A vast worldwide set-up across value chain



The slide features a horizontal flow diagram with four green chevron-shaped boxes representing stages of the supply chain: Orders, Logistics, Manufacturing, and Procurement. Each box contains an icon and key statistics.

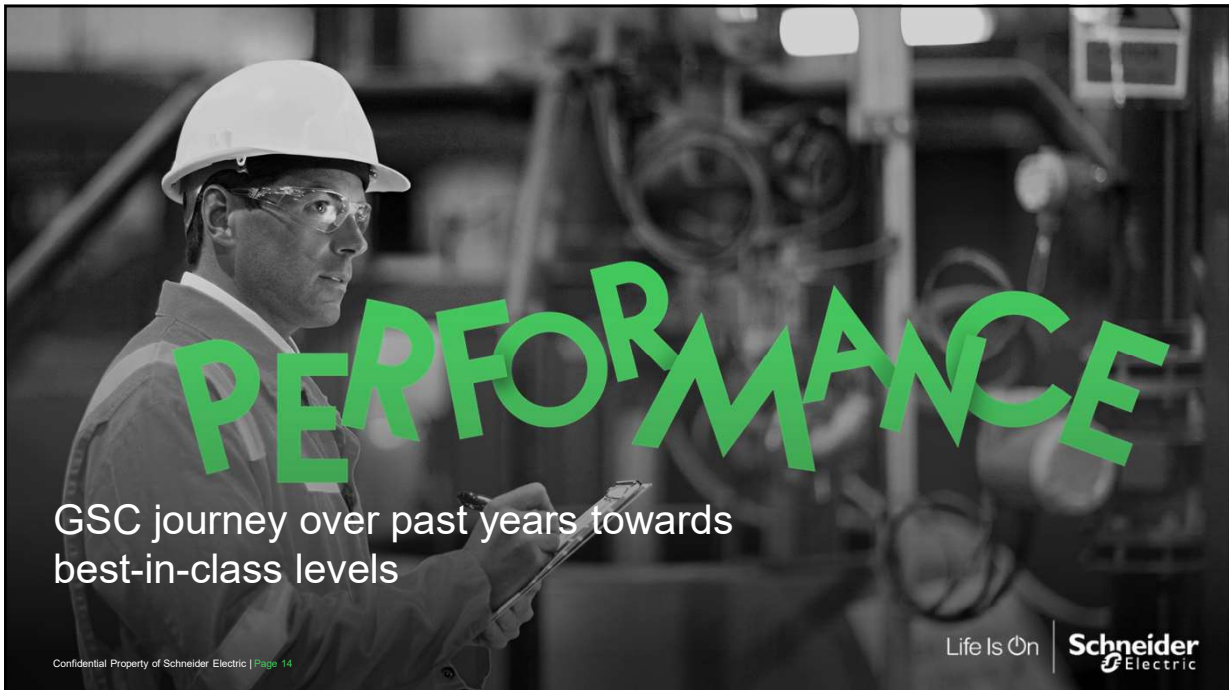
- Orders**
  - 150,000 order lines / day
  - 260,000 SKU references
- Logistics**
  - 95 distribution centers
- Manufacturing**
  - 204 factories
  - 44 countries
- Procurement**
  - 22,000 suppliers
  - €8 B purchases

**86,000 employees** (Total industrial headcount incl. Procurement, Manufacturing and Logistics)

July 2018 (including Delixi)

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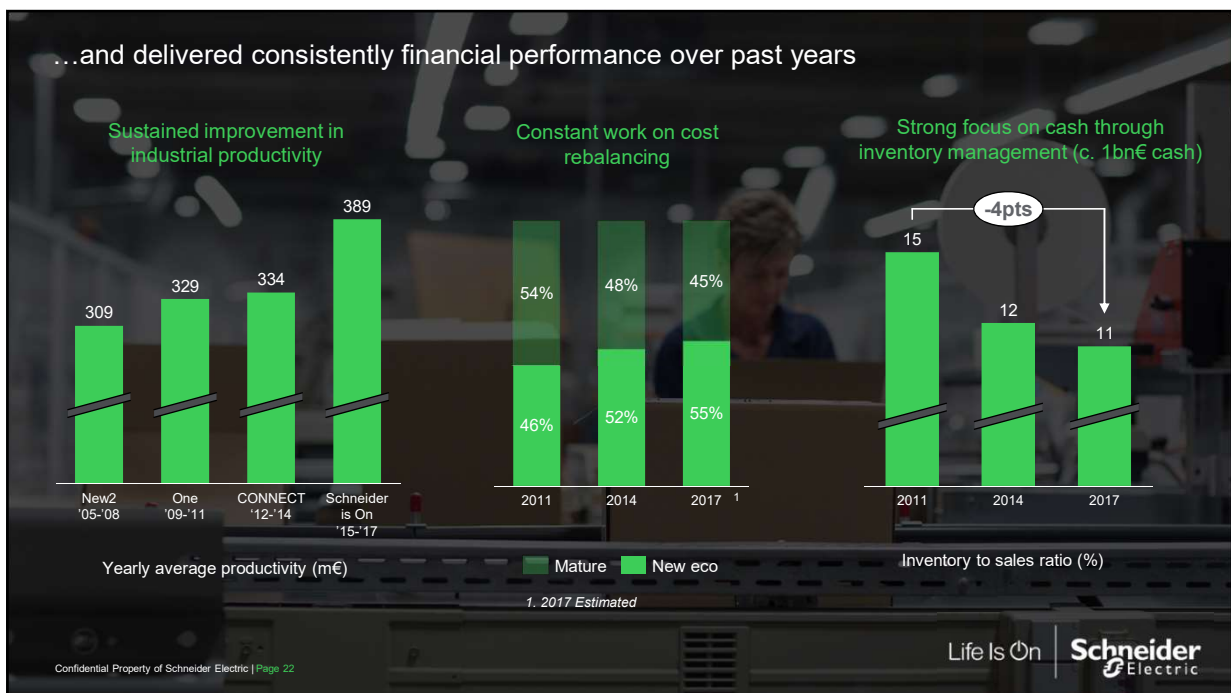
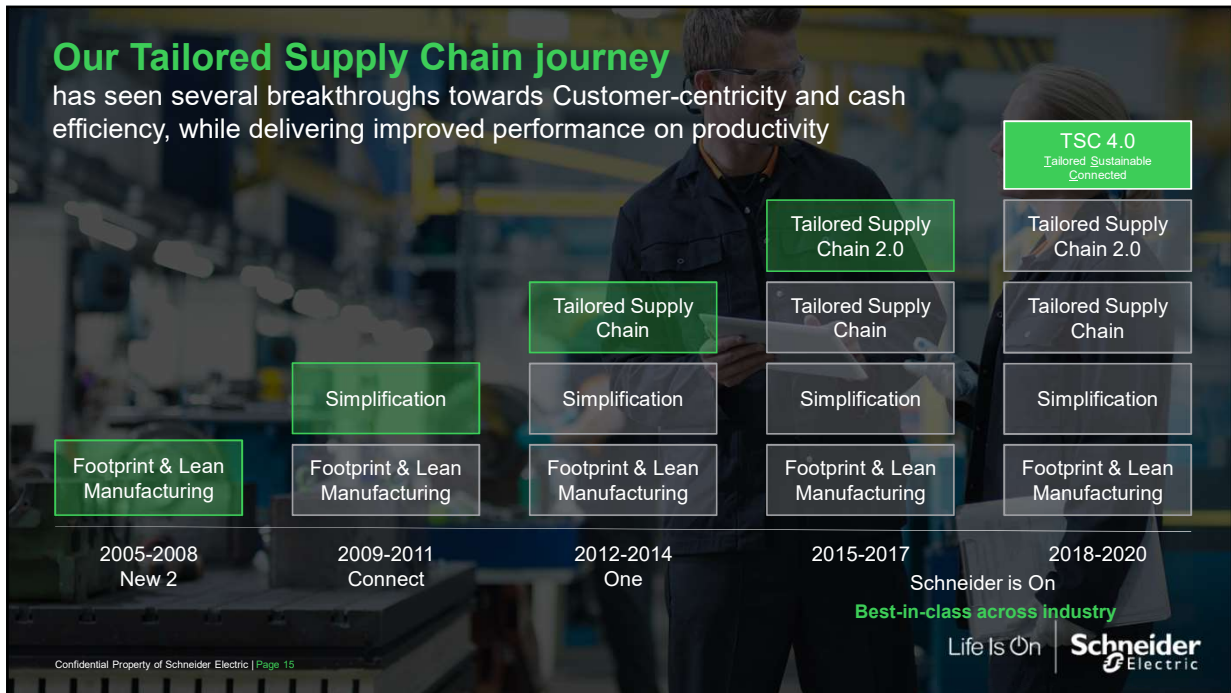
# PERFORMANCE

GSC journey over past years towards best-in-class levels

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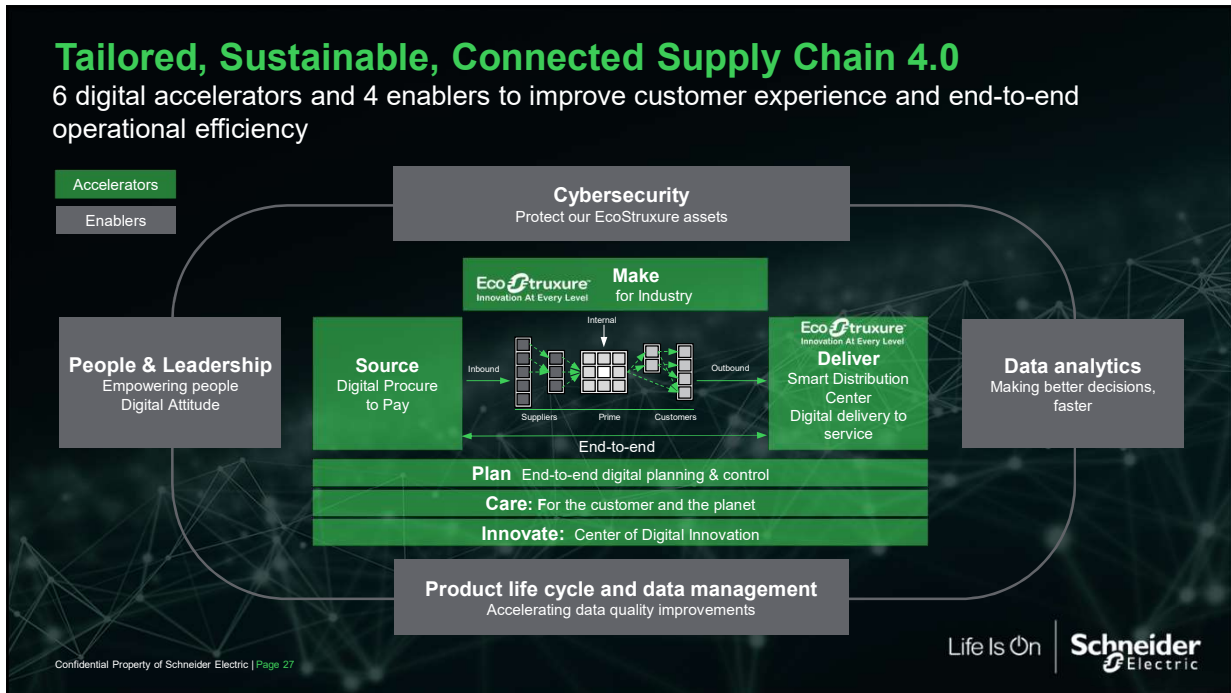
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## TSC 4.0 - Source

Digitization accelerates procurement and suppliers efficiency

### E-Procurement

One platform capability for non-production procurement bringing:

- Reduced consumption through better procurement controls and approvals
- Increased deployment of catalogues and associated price reductions

One Schneider Supplier Portal for all production procurement :

- Allowing digital processes for forecasting, ordering, invoicing but also sharing all type of documents
- To be extended to quality, inventory, transport etc..

⇒ Agile model being deployed

### Procurement Analytics

One centralized platform consolidating detailed production procurement information enabling:

- Fully automated, real time visibility and insights on spend coverage & supplier performance
- Support for procurement negotiation
- Visibility on order delay at supplier

⇒ Already 2,000+ users in PRISM tool - 100% spend coverage, 90% being automated

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## TSC 4.0 - Make: EcoStruxure™ for Smart Factory

Catalyze optimization with high level of platforming data



## TSC 4.0 - Deliver

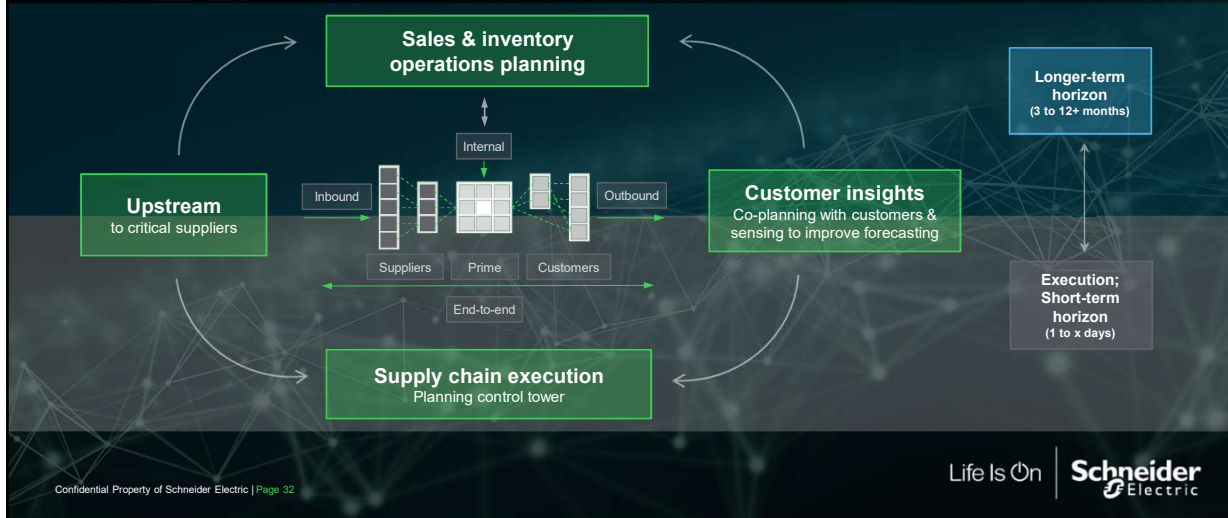
Digitization improves customer experiences with more efficient and sustainable logistics

Transportation	Customer Delivery Experience
<p>Control Towers for real-time monitoring in all regions</p> <ul style="list-style-type: none"> <li>Drive remediation plans to protect customer from delays</li> <li>CO<sub>2</sub> measurement and reduction of wasted volume in transport</li> <li>Supported by our strategic partners</li> </ul>	<p>Segment customer delivery experience:</p> <ul style="list-style-type: none"> <li>Close collaboration with Businesses &amp; marketing to deploy 30 capabilities- in progress</li> <li>Providing more visibility on shipment for critical deliveries</li> </ul>
<p><i>Australia Control Tower for Pacific zone</i></p>  <ul style="list-style-type: none"> <li>Reduction to less than 1/5th in end-to-end case cycle times</li> <li>On Time Delivery transport above 98.5%</li> <li>50% improvement in % cases answered to customers within 24 hours</li> <li>Total request time open reduced by 70%</li> </ul>	<p><i>GPS tracking for critical deliveries increasing satisfaction in Wuhan (China)</i></p>  



## TSC 4.0 - Plan

End-to-End Planning will expand to improve synchronization of Demand & Supply



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## TSC 4.0 - Care for our Customers

End-to-end quality assurance

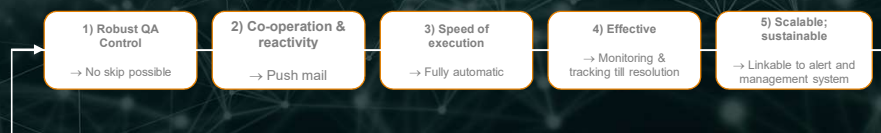
Improvement of the execution of Process Control Plans with digital solutions  
Example of Schneider Electric Batam (Indonesia)

- Digitization of procedures for regular quality assessment
- Mobile device support to quality technician
- Audit results linked to continuous improvement actions across factory



Improvement through digital:

- ✓ Reliable & Robust
- ✓ Paperless
- ✓ Simplified
- ✓ Real-time
- ✓ Traceable & reliable
- ✓ Visual support
- ✓ Resource Management



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## TSC 4.0 - Care for our Customers

End-to-end quality assurance

Real time process & quality monitoring enabling preventive actions  
Example of Schneider Electric Bangalore (India)

The **digital** solution integrated to **EcoStruxure** enables **connected** products, machines & tools to **collect** process & critical to quality data, in real-time.

Analysis(process capabilities) helps to **drive preventive actions**

**EcoStruxure**  
Innovation At Every Level

- Apps, Analytics...
- Edge Control
- Connected Products

Parameter	Image	Highest Value	Lowest Value	SPC	TRIGGER	CAPA
Temperature		31 Deg C	27 Deg C	Under Control		
Humidity		60% RH	50% RH	Under Control		
Lux		600 Lux	450 lux	Under Control		
Noise		60 db	50 db	Under Control		
Leakage Voltage		5.7 Volts	0.8 Volts	Under Control		
Dust				Under Control		
CO2		400 ppm	200 ppm	Under Control		
ESD Grounding				Under Control		



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## TSC 4.0 - Care for the Planet

Our 2020 Sustainable Supply Chain ambitions

### Clean and safe facilities

- 0** serious or fatal accidents
- 1** medical incident per million hours worked
- 100%** of sites certified with ISO 14000, ISO 50000, and OHSAS 18000  
Integrated new sites and secure certification renewal

### Carbon light and digital

- 80%** of electricity comes from renewable sources,  
In line with RE100 commitment of 100% renewable sources by 2030
- 100%** of sites deliver energy savings, leveraging EcoStruxure Power & Resource Advisor

### Resource efficient – circular

- 95%** waste recovery rate and 200 sites on the way to zero waste to landfill
- 100%** of regions with circular supply chain innovations, through new and scalable innovations
- 100%** cardboard / pallets from recycled or certified sources

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## TSC 4.0 - Innovate

Digitization that drive idea generation and experimentation

Newly set-up Center Of Digital Innovation to monitor breakthrough technologies...

...experimenting to deploy best-of-breed innovations in our facilities

Dedicated team focused on 2 to 5+ years horizon

Artificial intelligence (AI) used in quality improvement through faster machine learning:



Industrial innovation

- Teaching a pair of AI instances how to look at data from a camera



Empowering employees with cutting-edge technology

- Active, intelligent system that can check the quality of orders, products



Collaborative robotics & advanced automation

Blockchain usage tested to improve critical to quality parameters and offer traceability:



Artificial intelligence

- Proof Of Concept in North America with different suppliers and partners

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## TSC 4.0 - Cybersecurity

An essential pillar of our smart Supply Chain

### Holistic approach

- Integrated in overall Schneider Electric CyberSecurity Strategy
- Leverage Schneider Electric EcoStruxure Offer
- Connect and integrate external inputs (e.g. suppliers, machine investment, ...)

### Strong focus on architecture

- Covering IT/OT convergence (hardware and software) through strategic partnerships at a global and regional level
- Support from Schneider Digital organization to implement best practices
- Internal conformance process and centralized governance

### Embed cybersecurity in operations

- Creation of a network of Supply Chain Cybersecurity referents
- Improved coordination for threats identification, detection and responses
- Regular assessment of the maturity level of every site, with action plans to reach the expected level of protection

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## TSC 4.0 - People

Empowered people to drive the digital transformation with “competencies of the future”

### Competencies of the future

- Evolving skillset (hard and soft)
- Digital technologies all pervasive
- Increased focus on analytics driven by new technologies

### Constant learning culture

- Prepare future adaptations through constant learning experience for blue-collar
- Technology solutions offering easy access

### Leadership in supply chain of the future

- Higher empowerment of blue-collar through digital - direct link with suppliers to share and manage quality issues
- Management transformation: from technical to coaching skills

### Learning corner for Mexico Factory blue-collar

- Full Schneider academy content available, including safety, technical, quality, onboarding training, HR meetings...



Transformation complementary with strong focus on current skills management

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**RELIABLE**

Deployment of our Smart Supply Chain powered by EcoStruxure: from local scale to global standardization

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MB12

## GSC leveraging EcoStruxure offers

### The aim:

- Optimize end-to-end efficiency and asset reliability using EcoStruxure for Industry
- Integrating innovative technologies, IT solutions and data analytics into our manufacturing operations
- Opening our smart factories to customer visits – EcoStruxure for Industry Showcase



Being disruptive is required in today's Digital Age to be even more competitive and to deliver greater value to our employees and customers

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## Deploying EcoStruxure in GSC sites

Think big. Act small. Scale fast.

2017

11 Advanced  
25 Step-up  
70 sites connected to Resource Advisor

**More sites covered**  
**Wider solution deployed**  
**Deeper expertise:**

- **Standard** – a connected factory for process control
- **Step-up** – a strong level of lean digitization
- **Advanced** – a high level of platforming data

2020

Reach 100+ Advanced + Step-up  
200+ sites connected to Resource Advisor

Capitalizing a global roadmap with all regions and testing solutions from ideation to feasibility to pilot and scale  
Deploy global governance and appropriated centers of excellence

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**Slide 23**

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**MB12** Copy aligned with slide 10 from smart factories ppt  
Magdalena BLASZCZYK, 21/03/2018



MB14

## Digitization powered by EcoStruxure

is driving end-to-end efficiency for industrial environment

### Agile Management

Shop floor agility: Bringing control to the enterprise level

### Process Efficiency

Better closed-loop measurement and control for greater throughput and faster processing

### Asset Performance Management

Optimized asset use to improve profitability

### Empowered Operators

Empowering operators for more effective decisions on the factory floor

### Reliability

Ensuring plant, process, and asset uptime

### Energy Efficiency

Visibility, control, and optimization of power consumption and costs

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MB15

## Agile Management & Process Efficiency

Driving faster and better decisions, enterprise wide

IT/OT integration

Factory-floor insights and efficiency

Better decisions, faster processing

### Business value

Based on 15 years of Lean Manufacturing, we deliver Lean Digitization through:

- Transparency, visibility, reactivity
- Paperless operations in the factory for line management and support functions
- System Platform to reinforce control process and traceability

### Targets/Outcomes

- Simplification of shop-floor management across 100+ sites by 2020
- ROI in 2 years thanks to agility and efficiency

**EcoStruxure**  
Innovation At Every Level

Apps, Analytics & Services	Lean Digitization, EcoStruxure Machine Advisor, EcoStruxure Asset Advisor, system platform
Edge Control	HMI/PLC, IIoT Edge Box
Connected Products	PacDrive robot, Altivar drives, Zigbee/sensors, Harmony, RFID for Kanban

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## Slide 25

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**MB14** Content aligned with slide 12 from smart factories ppt  
Magdalena BLASZCZYK, 21/03/2018

## Slide 26

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**MB15** Content aligned with slides 13 & 14  
Magdalena BLASZCZYK, 21/03/2018

## Asset Performance Management

Predictive analytics for reduced downtime and longer operational times

**Business value**

IIoT-powered predictive analytics reduce downtime and extend operational times through:

- Real-time insights
- Ease of integration
- Machine learning
- Improved overall assets availability and reliability, including reduced spare parts inventory costs
- Integration with Enterprise Asset Management

**Targets/Outcomes**

- ROI in 6 months on IIoT-powered connected assets (IIoT Edge Box)
- ROI in less than 2 years on computerized maintenance management system (Enterprise Asset Management)

**EcoStruxure**  
Innovation At Every Level

Apps, Analytics & Services	EcoStruxure Machine Advisor, EcoStruxure Asset Advisor, Enterprise Asset Management, Insight on Line
Edge Control	IIoT Edge Box, PLCs
Connected Products	Zigbee/LoRa IIoT sensors, Harmony motor

Connected Products IIoT

30

connected sensors connected to the IIoT Edge Box

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## Empowered Operators

For increased efficiency in maintenance and processes

**Business value**

Empowering operators by bringing all necessary information in hand to act:

- Simplified use of information at point of need or in case of repair
- Easy access across functions
- Driving effective decisions on shop floor

**Targets/Outcomes**

- Reduced mean time to repair
- ROI in between 6 months and 1 year

**EcoStruxure**  
Innovation At Every Level

Apps, Analytics & Services	EcoStruxure Augmented Operator Advisor, EcoStruxure Mobile Operator Advisor, EcoStruxure Secure Connect Advisor
Edge Control	PLCs
Connected Products	PacDrive robot, Altivar drives, Zigbee/LoRa IIoT sensors, Harmony...

Augmented Operator Advisor

Shanghai - China

Lexington, KY - US

Le Vaudreuil - France

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## Energy Efficiency & Reliability

Driving reduced energy consumption through real-time insights

Energy and sustainability insights

Real-time power monitoring

Greater energy efficiency and power reliability

Business value

Energy efficiency program, built on real-time insights, delivers:

- Full visibility and control of energy consumption
- Continuous improvement and energy savings plan
- EcoStruxure supports ISO 50.001 certification (energy management)

Targets/Outcomes

- First implementation delivers up to 30% energy savings and contributes to continuous improvement over the years
- 70% of our energy spend is already covered by Resource Advisor

Innovation At Every Level

Apps, Analytics & Services	EcoStruxure Resource Advisor; EcoStruxure Power Advisor
Edge Control	EcoStruxure Power Monitoring Expert
Connected Products	Solar panels, Schneider inverters, connected meters, gateways, Masterpact, Easergy, Varilogic, PowerTag, lighting/HVAC control

Example: GSC India / Bangalore / SEPC

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# Questions ?

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