

24/7

Energy and Climate Smart Healthcare Facilities – from Data to Operational Insights

Improving healthcare operational efficiency,
patient satisfaction, and safety for all

Life Is On

Schneider
Electric

The Present is Digital

The technology revolution is transforming our world and occurring at an unprecedented speed

Internet of Things

10x more

Incremental connected devices
than incremental connected
people by 2020

Big Data

x5

81B GB in 2017.
403B GB in 2021

Artificial Intelligence

x6

Worldwide spending on cognitive
and AI systems 2017 - 2022

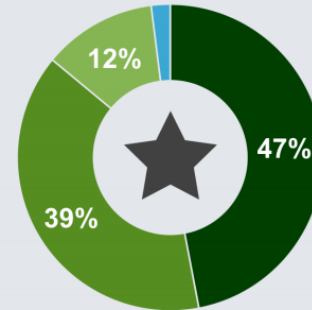
Digital adoption is NOW

86%

of organizations have a full or limited digital transformation strategy

What best describes your organization's digital transformation strategy?

- Full strategy
- Limited strategy
- No strategy now; in the process of developing one
- No plans to develop strategy



Base: 253 global non-IT technology and business decision makers
Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, February 2017

Schneider Electric leading the digital transformation of energy management and automation

Key figures for 2018

5% of revenues devoted to R&D

€26 billion

2018 revenues

42%

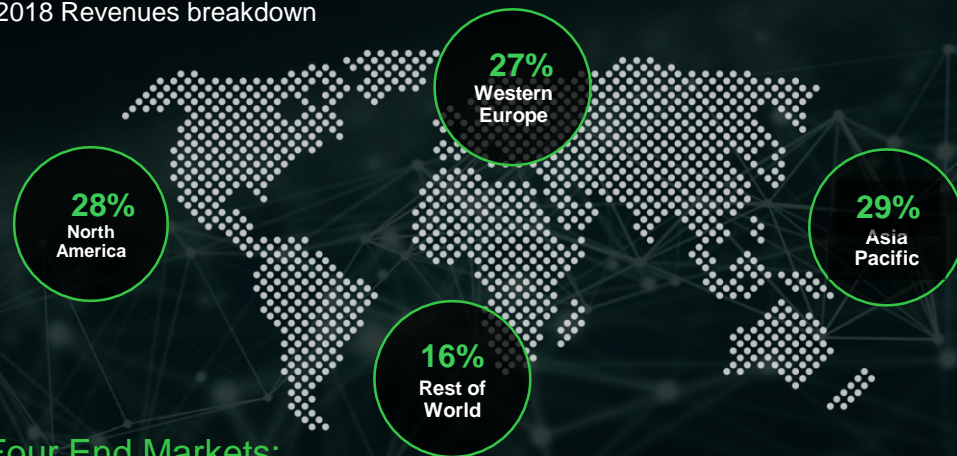
of revenues in new economies

137,000+

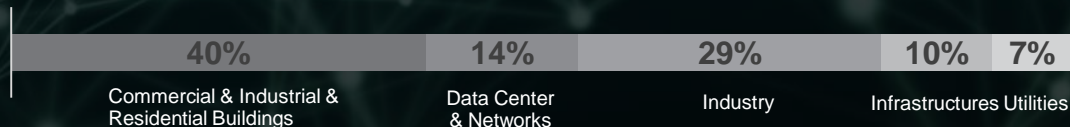
Employees in over 100 countries

A well-balanced global presence

2018 Revenues breakdown



Four End Markets:



Connecting deep domain expertise with ~20,000 application and software engineers



20 of the largest **Oil and Gas** companies



9 of the 10 largest **Mining, Metals and Minerals**



11 of the top brands within **Food & Beverage**



40k **Water and Wastewater** installations in **120** countries



1 million+ **Buildings** including 3 of top 5 **hotel** chains and approx. 40% of the world's **hospitals**



10 of the world's top **electric utilities**



4 of the top 4 biggest **hyper scale cloud** providers



8 the top 10 **packaging machine** builders

Intelligent healthcare buildings: supporting improved patient outcomes, sustainability and operational efficiencies

Schneider Electric Healthcare Solutions

- Sales: €650M / year
- Customer base: 50,000 hospitals
- Impact: 14 million hospital beds

Healthcare challenges & opportunities



With the population aged 60+ expected to double by 2050¹, the patient population will also surge



More than 50% of healthcare executives say patient satisfaction is a “top 5” concern³



Safety is paramount when lives are at stake. 33% of EHR disruptions are caused by a power outage



87% of healthcare organizations will have adopted IoT technology by 2020

Hospitals need to become more connected...

Hospital infrastructure digitization

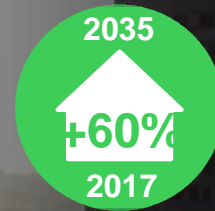
1.7B
2014

5.5B
x3
2020

- Gathering data from many sources
- Structuring data
- Interpreting data with AI and analytics
- Using insights to solve real-world problems

...and more sustainable

Hospitals' Electricity consumption



- Self-generation
- Source management
- Electrical reliability
- Energy efficiency

Yet... healthcare building data remains in chaos

Co-Innovating to meet your hospitals' operational priorities



EFFICIENCY



SUSTAINABILITY

“Smart Healthcare” market is going through end-user led technology transformation



Cloud



Artificial Intelligence



Internet of Things



Personalization



Building as Strategic Asset



Digital Natives



TECHNOLOGY



USERS



Are healthcare organizations prepared?

85% of companies feel prepared for the **new energy future**.



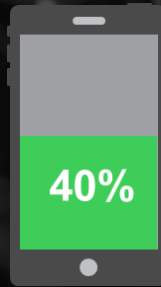
We've got this!

BUT...



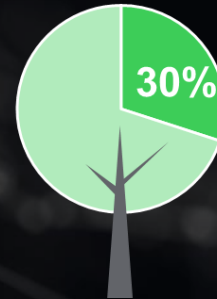
44% say that **lack of coordinated planning** between internal energy and sustainability teams is a barrier to achieving goals

NOT INTEGRATED



of companies have a **wholistic data (Energy & Sustainability) management strategy**

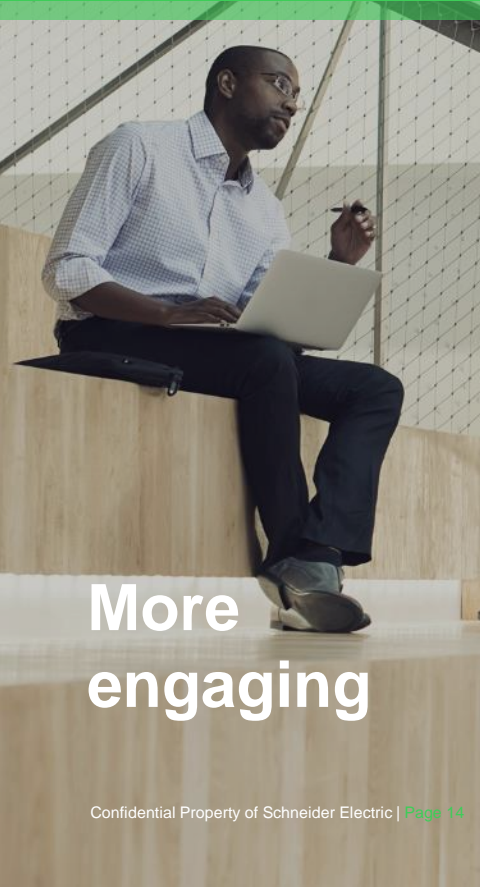
NOT CONNECTED



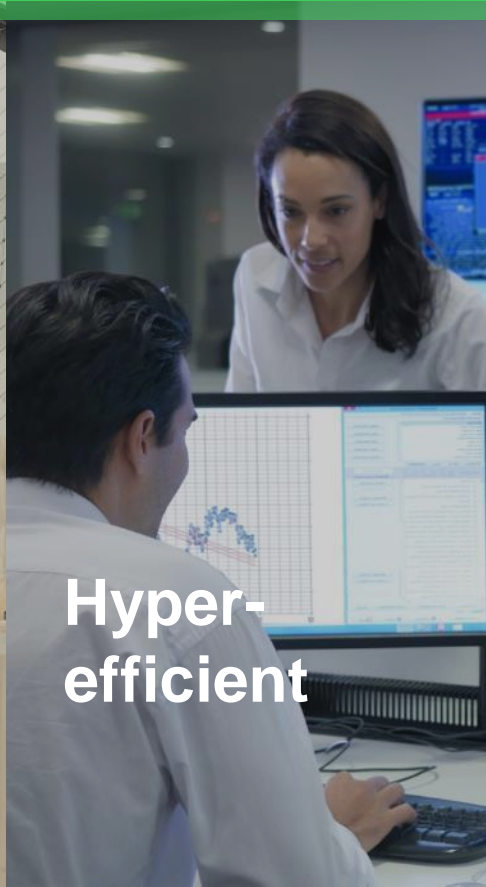
of companies are considering advanced systems like **energy storage and demand response**

NOT RESPONSIVE

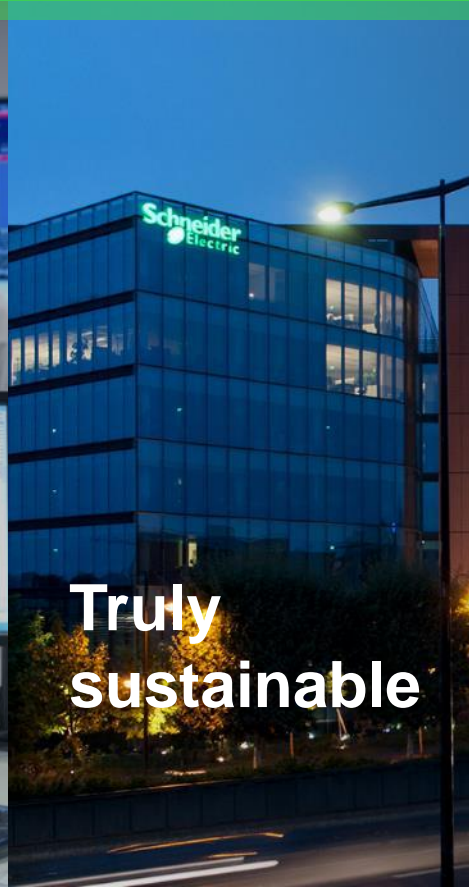
Reinventing healthcare buildings to be...



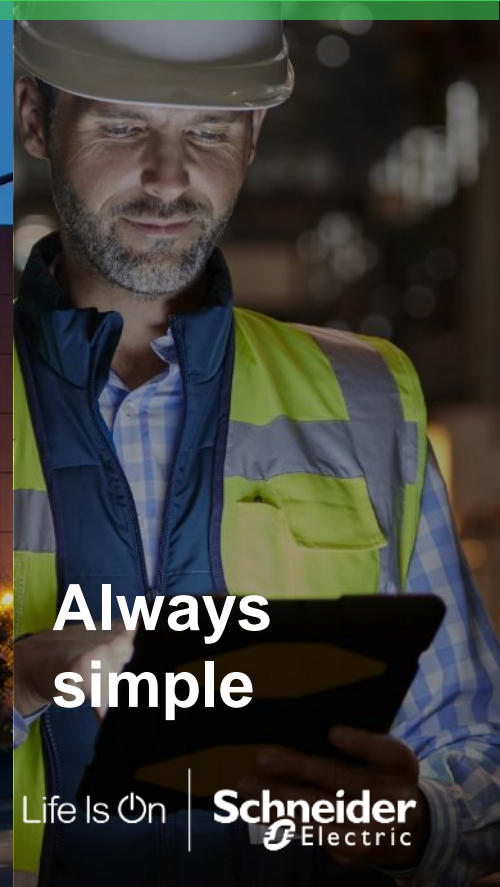
**More
engaging**



**Hyper-
efficient**



**Truly
sustainable**



**Always
simple**

Efficiency gains will come from IT/OT convergence

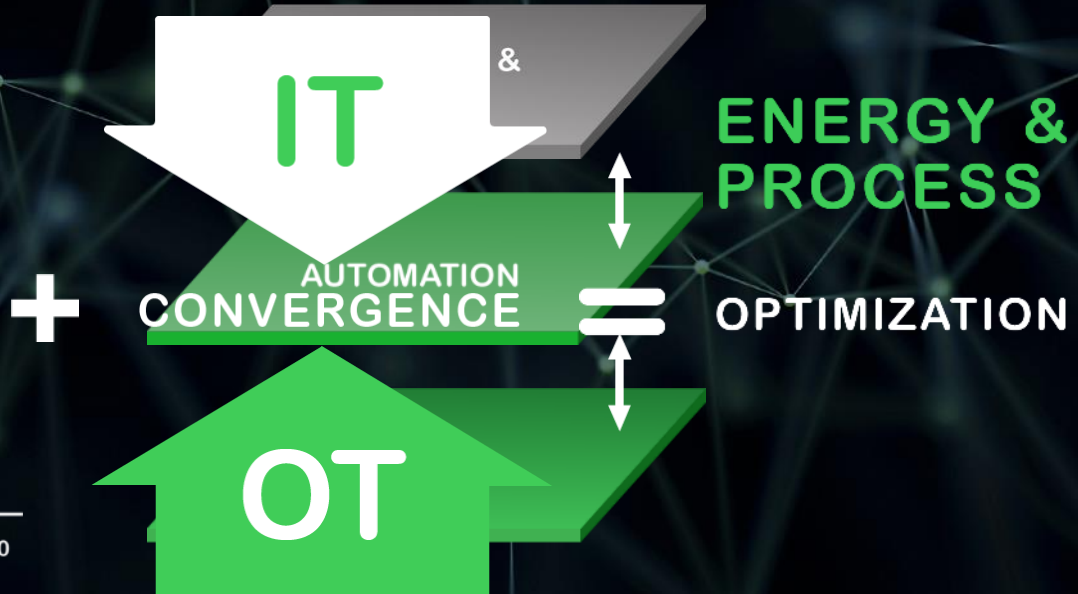


ACCELERATION

Driven by pervasive penetration of
MOBILITY & ANALYTICS

INTERNET OF THINGS

Source: Cisco



Translating the data into meaningful insights

Context that drives business value

CLOSE THE LOOP



CONNECT

Connect everything from shop floor to top floor



COLLECT

Capture critical data at every level, from sensor to cloud



ANALYZE

Convert data into meaningful insights



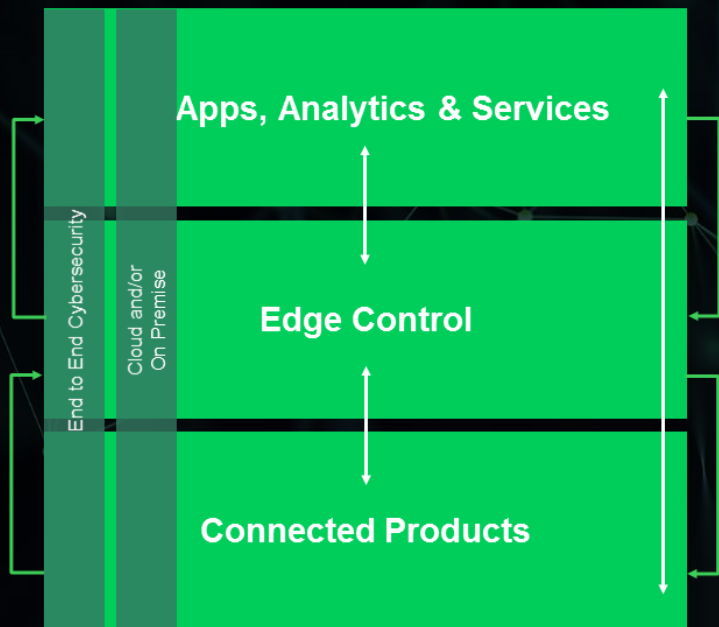
TAKE ACTION

Drive action through real-time information and business logic



EcoStruxure™ enabling

The Open Innovation Platform for Healthcare Buildings...



Unique strengths



Enterprise Services at Scale,
for FMs, Building Occupants, Workplace Strategist...



Powerful Integration & Control at the edge,
with Open Integration framework, Support for variety of Protocols, Semantic Tagging, Mobile experience



Digital IP backbone,
enabling IoT in Buildings

Avoid business interruption, cut energy & maintenance costs and reduce patient complaints with EcoStruxure™ Advisors for Healthcare



Facility
Manager

**Patient
Safety &
Reliability**

Patient safety is at stake when **Power outage** occurs e.g., in intensive care and operating theaters

EcoStruxure™ POWER Advisor



- 20% less downtime thanks to detection of high-risk electrical network and power quality issues



COO

**Operational
Efficiency**

2,000€/h for MRI equipment when **poor power quality** affects current phasing

4X more cost to do emergency vs. Predictive maintenance (M€ impact)

EcoStruxure™ ASSET Advisor



- 24/7 cloud & mobile asset health visibility
- Predictive maintenance analytics



E&S
Manager

**Patient &
Employee
Satisfaction**

Hospitals are **#2 most energy intensive** buildings

#2 patient complaint is linked to temperature too warm or too cold

EcoStruxure™ BUILDING Advisor



- 30% less patient complaints with automated diagnostic and early fault detection
- 80% remote issue resolution thanks to cloud based analytics
- 20% less energy cost from continuous building commissioning enabled by performance monitoring

EcoStruxure™ RESOURCE Advisor



- Provides a one-stop-shop for view energy data and documents, including utility contracts and invoices

Better together: a dynamic ecosystem to accelerate digital innovation

Optimizing our customer's business operations for over 30 years by harnessing our unified drive towards digital transformation and sustainability



Global, open platform

- Open, scalable platforms and products
- Focus on scale, speed and security



Technology + domain expertise

- Latest and greatest Microsoft tech and digital capabilities
- Schneider Electric's vertical market knowledge
- Extensive domain experience
- Re-engineering expertise

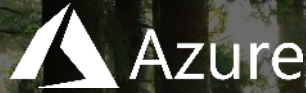


Sustainably-driven business

- Access to clean energy
- Dedication to renewables and sustainability
- Energy efficient solutions

Azure IoT + EcoStruxure™

Scale your digital journey quickly and securely with open, flexible platforms that accelerate execution and reduce time to market by up to 80%



Scalability and Agility

- Azure is available in more than 100 services and 54 regions
- Unlimited computing power available on demand
- EcoStruxure has been deployed in 450,000+ installations



Speed and Acceleration

- Real-time processing through intelligence in or near to local devices
- Enhanced user experience with digital hologram context and prescriptive actions
- Open, interoperable design for easy-to-integrate analytics and maintenance



Security

- Decades of enterprise IoT experience and a steadfast commitment to security and compliance
- Azure all up has 70+ compliance offerings
- 90% of fortune 500 companies trust their business on the Azure cloud

World-class digital hospitals

Need the right information to the right person, anytime, anywhere



Patient safety



Patient experience



Operational efficiency

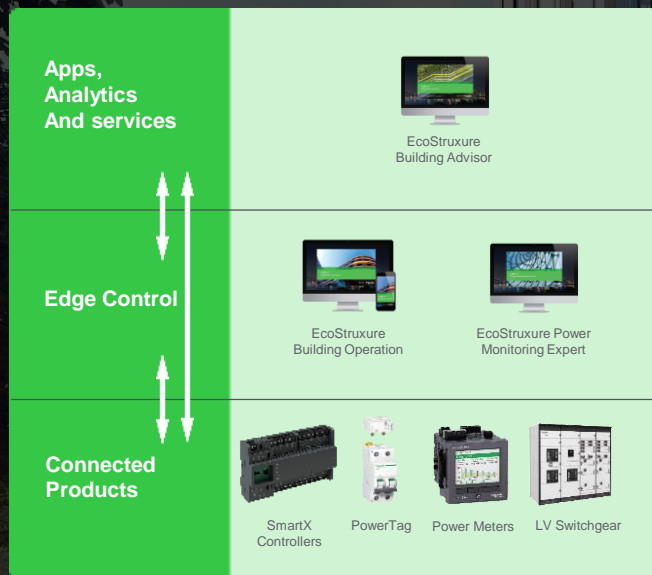
Prepare for the future

Integrate energy and sustainability strategy, **connect** assets, and **uncover, analyse and respond** to new opportunities



Large Healthcare Region Southern Sweden

EcoStruxure™ for Healthcare
Innovation At Every Level



- **The challenge:**
 - Visibility of building performance data & a missing link between capital investments and results
- **The approach:**
 - Collaborative, solution focused
 - Building trust and ownership
 - Start small, prove in operation, scale
- **The ambition in metrics:**
 - *16 months ROI*
 - *Positive NPV & cashflow in year 2*
 - *ROE requirement 4%*
 - *Minimum 10% energy savings*
 - *Minimum 10% reactive maintenance reduction*
- **The next steps:**
 - Extend cloud based architecture across OT
 - Connect missing equipment and systems
 - Extend Building Advisor Cloud Analytics platform across all facilities in the region ~25+ buildings

Life Is On



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Electric

