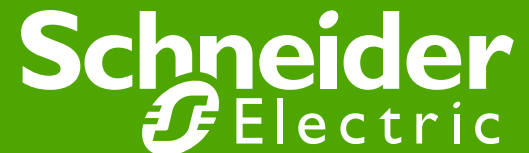


tefma 2013

Realizing Sustainability Success Through Technology

Glen Scott, National Manager, Australia & New Zealand

September 2013



The pressure on energy keeps growing



Today:

6 billion inhabitants

50% lives in cities

2 billion have access to a decent energy infrastructure



By 2030:

8 billion inhabitants

60% will live in cities

an additional **2 billion** people in the “energy” middle class

The energy dilemma is here to stay

The facts

× 2

Energy demand

By 2050

Electricity by 2030

Source: IEA 2007

vs

The need

÷ 2

CO₂ emissions to
avoid dramatic climate
changes by 2050

Source: IPCC 2011

**Frequent
power outages**

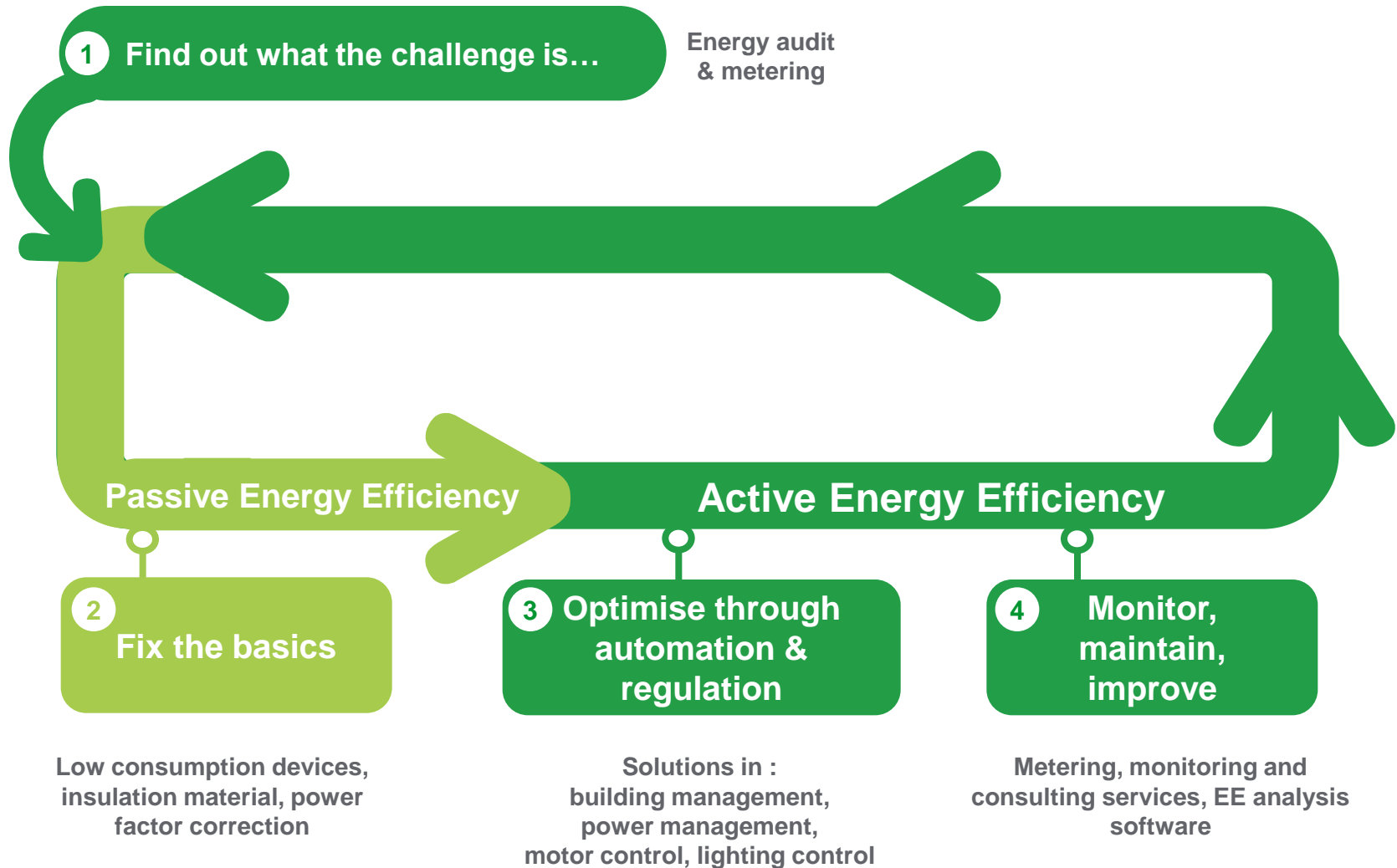
**Rising
energy prices**

Climate change

**Conflicts for
resource access
& control**

Active energy efficiency:

The fastest way to save energy and curb CO₂ emissions



Sustainability

Sustainability is increasingly becoming a byword of our time, a metaphor or change at all facility levels, as well as a means by which facilities are enhancing reputations and business value.

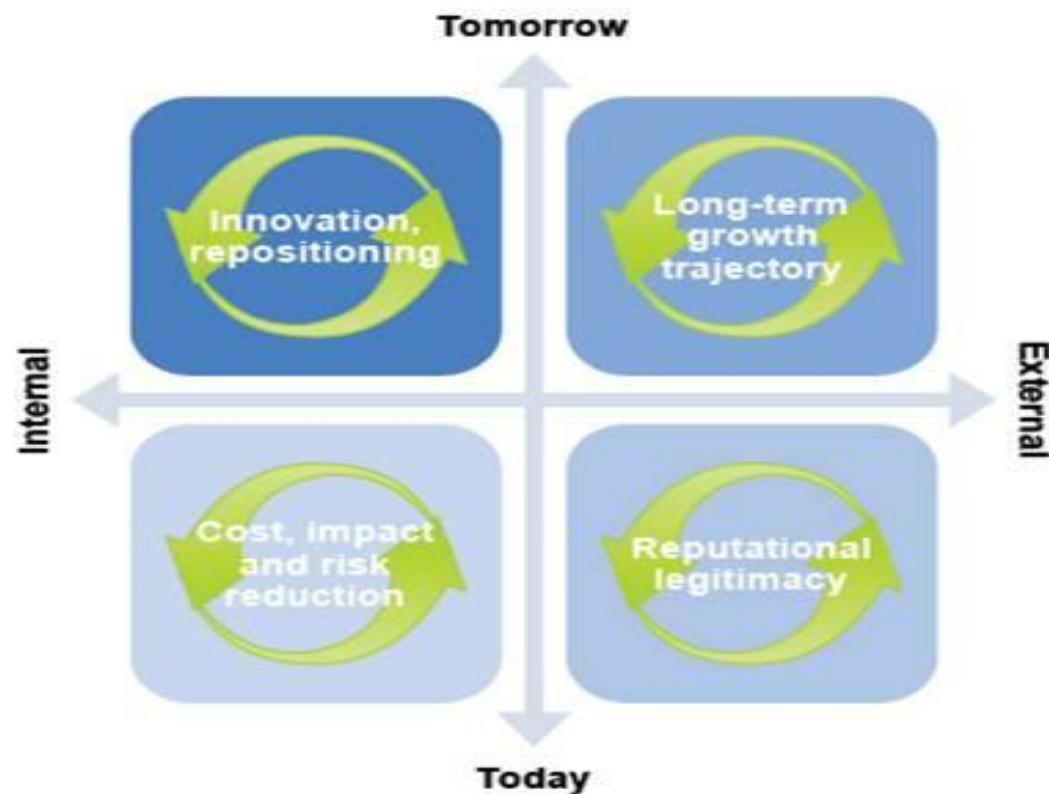
For a concept that has so rapidly evolved during the 21st century, there are few frameworks through which it can easily analyzed, communicated and understood.

“Gartner” has developed a useful model through which sustainable business and its value can be more clearly articulated.

Internal and External stakeholders

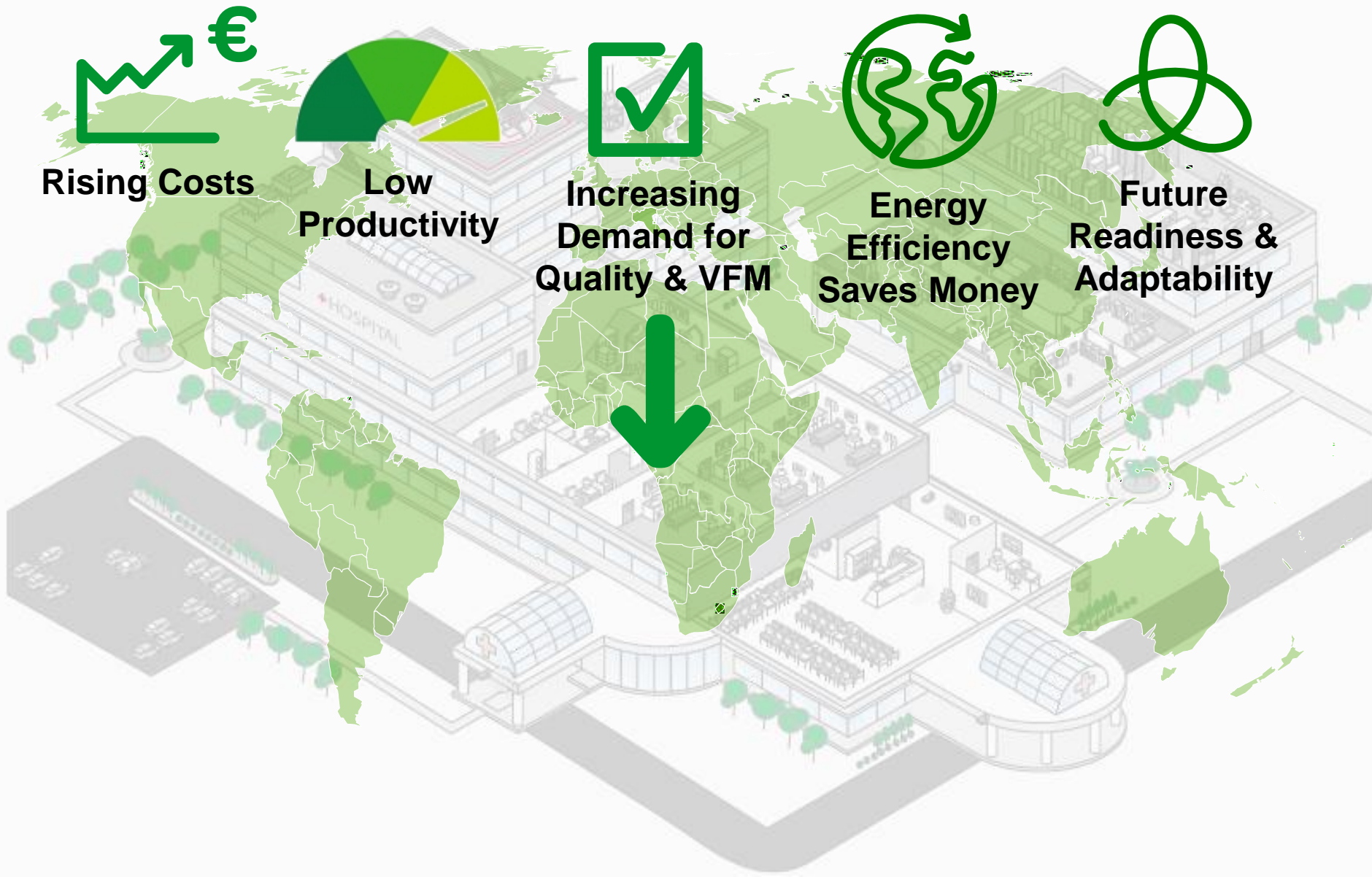
FIGURE 1

Sustainable Business Delivers Significant Business Value Both to Internal and External Stakeholders.



Source: Gartner (August 2012)

Global Trends



Energy Management

A cornerstone of Sustainable Business

- ❖ Energy – it's use, cost and price volatility; a persistent factor in any strategy
- ❖ Energy Management and Sustainability are closely related
- ❖ 2 issues are critical
 - ❖ The ability to address energy resources as part of the overall sustainability plan
 - ❖ The ability of a organisation to make positive moves that enable saving and allow for reinvestment in a growth direction

Energy Management

Total cost of Energy

- ❖ Energy – the total cost is an extremely valuable piece of information to the C-Level exec
- ❖ The capacity to evaluate and apply this knowledge may not exist
- ❖ The Data.....huge, manageable?

Data Management is Key

Data Management Challenges

- Disparate Data Sources
- Lack of:
 - Point Naming Conventions
 - Normalization Standards
 - Human Processing Time
 - Visualization Tools

THE DATA WALL

Building Point Density on the Rise!”

“We can easily expect between 1,000 to 1,500 input-output control points per building today, while only 10 years ago we may have seen as few as 200.” [S. Makarechi, Sept 2011](#)

15 minute interval data for 1,000 points in a building yields more than 35 million data points per year!

The Challenge

Managing enterprise resources while optimizing business outcomes

- ❖ Sustainability efforts extend beyond Energy Management.
 - ❖ CO2, emissions, water consumption, waste – obligations!
- ❖ The Challenge – optimize business outcomes while simultaneously managing enterprise resources
- ❖ In the digitally enabled world – information is key!
- ❖ The solution is clear; an efficiency and sustainable strategy, driven by a powerful, integrated software capable of collecting, analysing and reporting on energy and other resource costs and consumption across the campus.

The Solution

StruxureWare software applications and suites

- ❖ A unique platform of integrated applications.
 - ❖ Visibility into energy and resources
 - ❖ Open, scalable and easily integrated with 3rd party and legacy systems
- ❖ Campus is able to measure and manage data in the 3 layers
- ❖ Delivering one version of the truth that is accurate and actionable
- ❖ This software is unified across 3 levels to maximize efficiency

3 Levels & 7 functions



Enterprise

"I Conserve our enterprise resources"



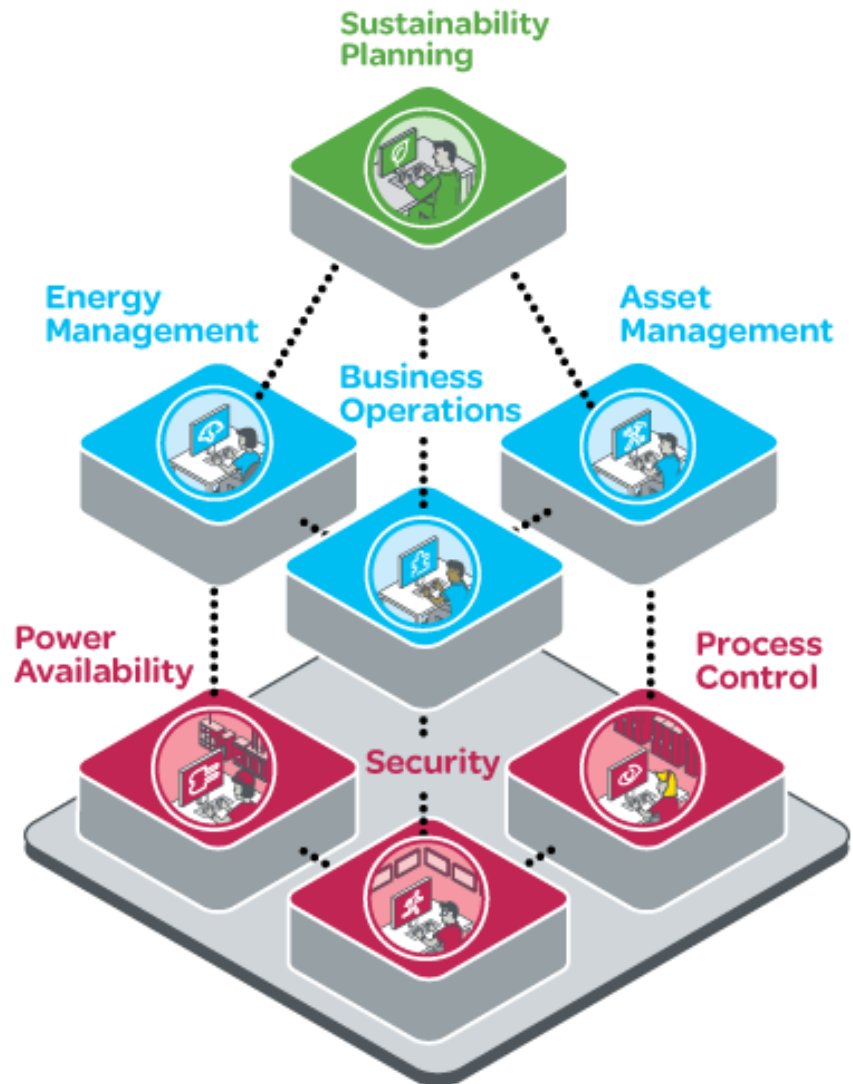
Operations

"I Optimize our operations and assets"



Control

"I Control our facilities processes"



The Payoff

Long Term growth with manageable expenses

- ❖ Campus' that implement strong sustainability and energy management agendas will benefit from closer alignment and integration of enterprise wide systems
- ❖ Those that don't implement technologies that support operational excellence and energy systems will be constrained
- ❖ Disparate data, duplication of resources and inconsistent guidelines will be further impeded
- ❖ StruxureWare.....!

IBCON - 2013



IBCON 2013

Major Building Automation thought leaders have established that the industry is at a critical point with technology adoption where the changes are taking place so fast that ideas and concepts that were once considered visionary and radical are now being established as best practice.

The vision of the conference is to bring Building Automation Technology leaders together to take a closer look at how facilities will be owned, operated and used over the next few years

The Next Big Technology Trends

Technology Trends

How is this Realized in Building Automation

Mobile

Portable Device Adoption will Overtake PC'S as the most common Web Access Device by 2013

Mobile

- HTML 5 Apps
- Multiple Applications with Touch UI

Social Media

- Interaction Between People where they create share and exchange information

Social Media

Community Based Facilities Management and Product Information

Cloud Computing

Cloud Computing

- Cloud Based Platforms and services with low infrastructure costs

Big Data

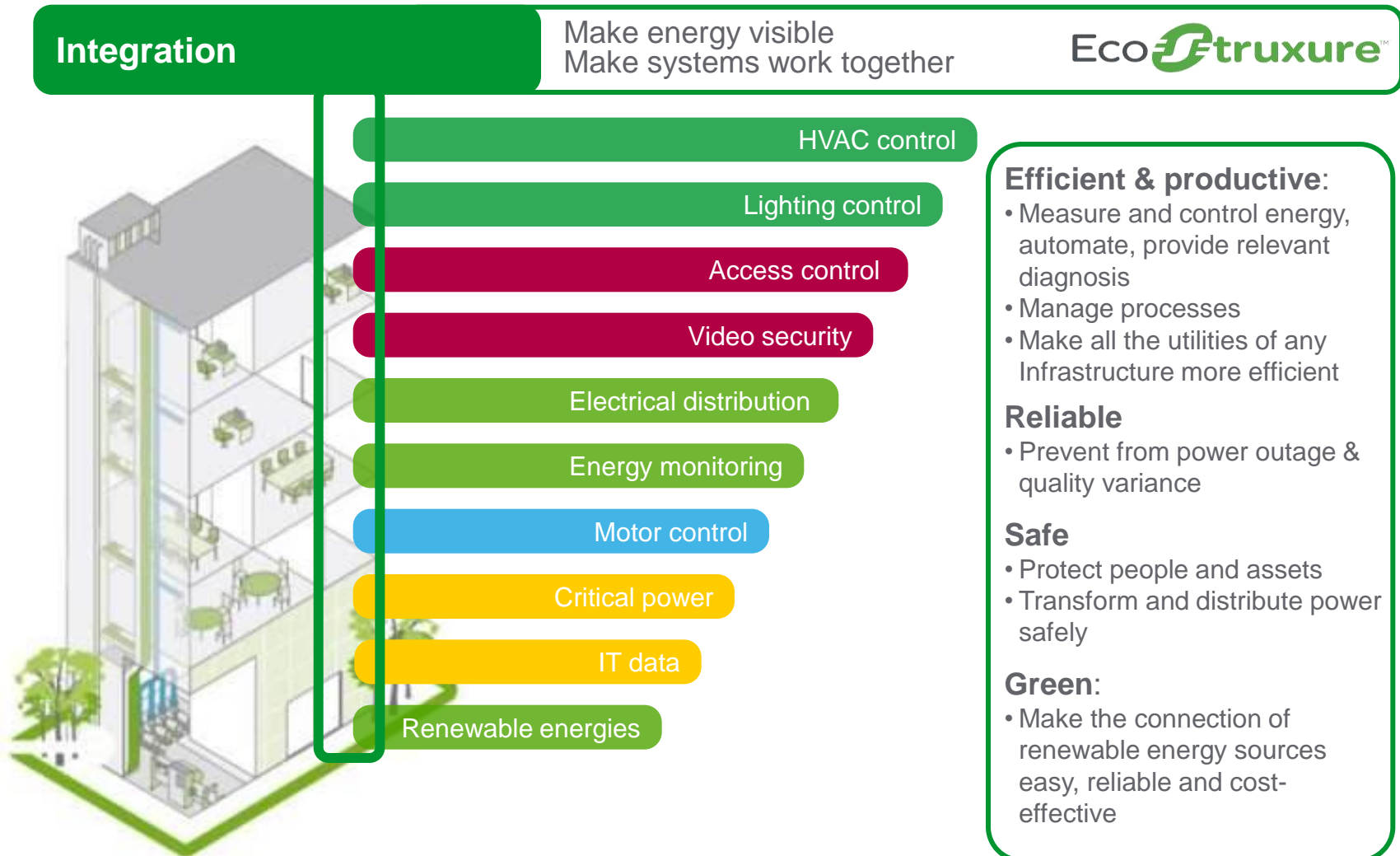
Is the collection of data so large and complex that standard processing is un-manageable

Big Data

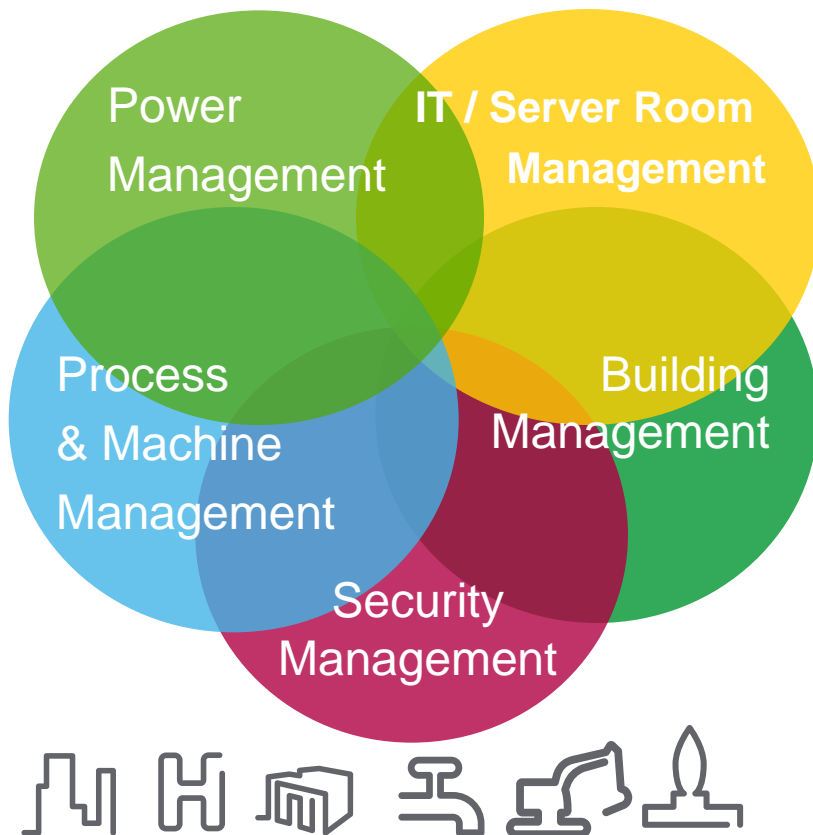
- Analytical Data Analysis
- Historical Benchmarking
- Automated Reporting with Actionable Data

Enabling a integrated solution approach:

Integrated solutions in a building



EcoStruxure: the right ecosystem to support the convergence of 5 key domains



EcoStruxure™ promise :

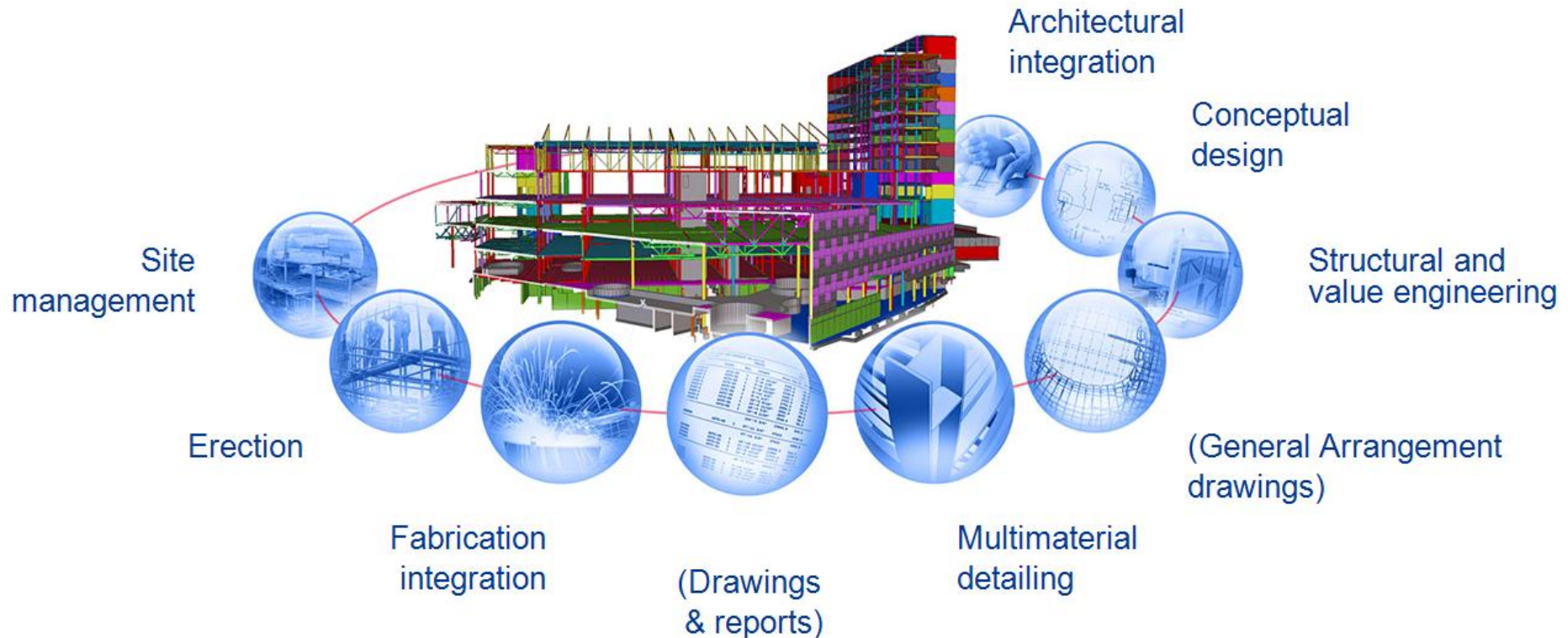
- Guaranteed compatibility / synergy / capability between the 5 domains of expertise
- Enhance the solution experience
- up to 30% saving in Capex and Opex
- Enabled by the right connecting technologies :
 - Ethernet/IP as a common highway
 - Web services as a common language (SOA architectures)

Helping to solve their Energy Equation

Making the energy Safe, Reliable, Efficient, Productive and Green

Technology Solutions and Applications

Building Information Modelling (BIM) aids in sustainability



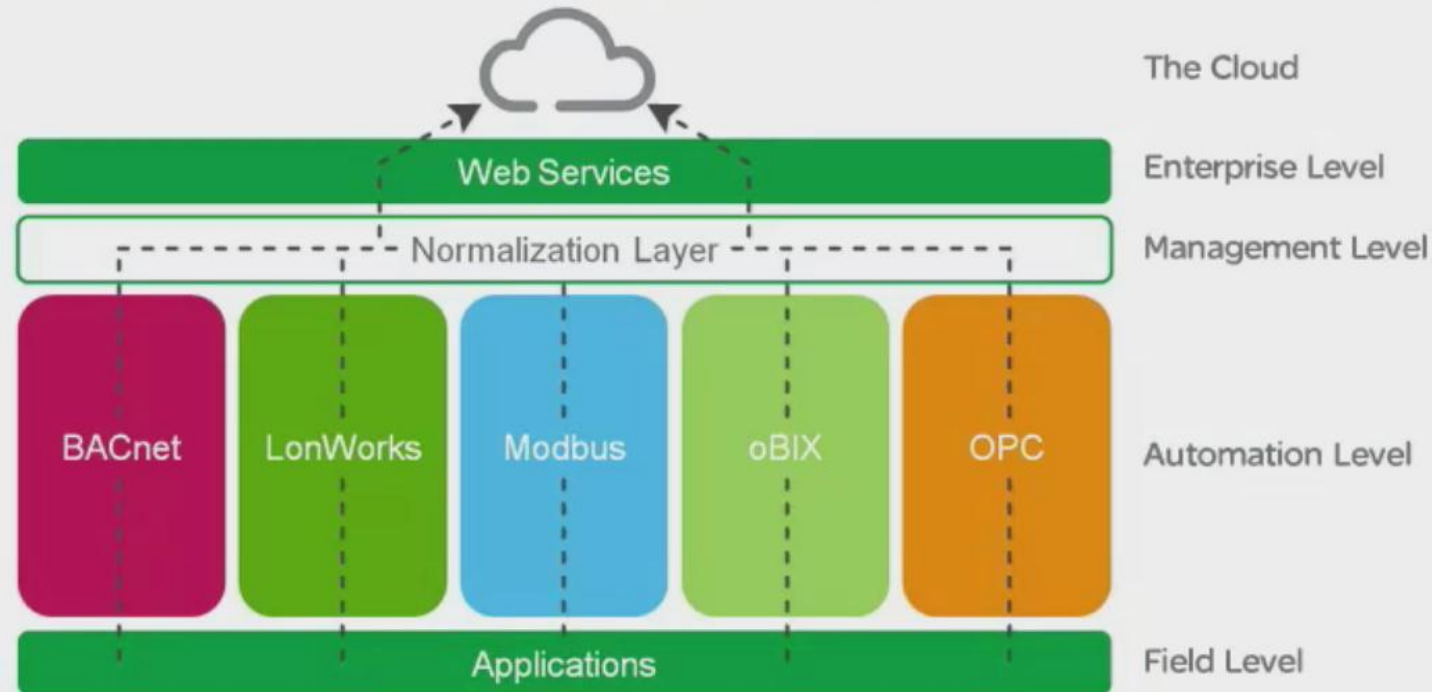
Incorporate real time monitoring and analysis as well as technological innovation within the facility intelligent infrastructure aligned with the building information model



Multi Lingual – True Open Protocol



StruxureWare's unique architecture



What is EcoStruxure?

In a word: **architecture**

In a few more words:

EcoStruxure is an **architectural foundation** which **unites** Schneider Electric's expertise in **power, data centre's, process and machines, building control, and physical security** to enable intelligent energy management solutions for customers seeking to optimize energy efficiencies across multiple domains of their business.

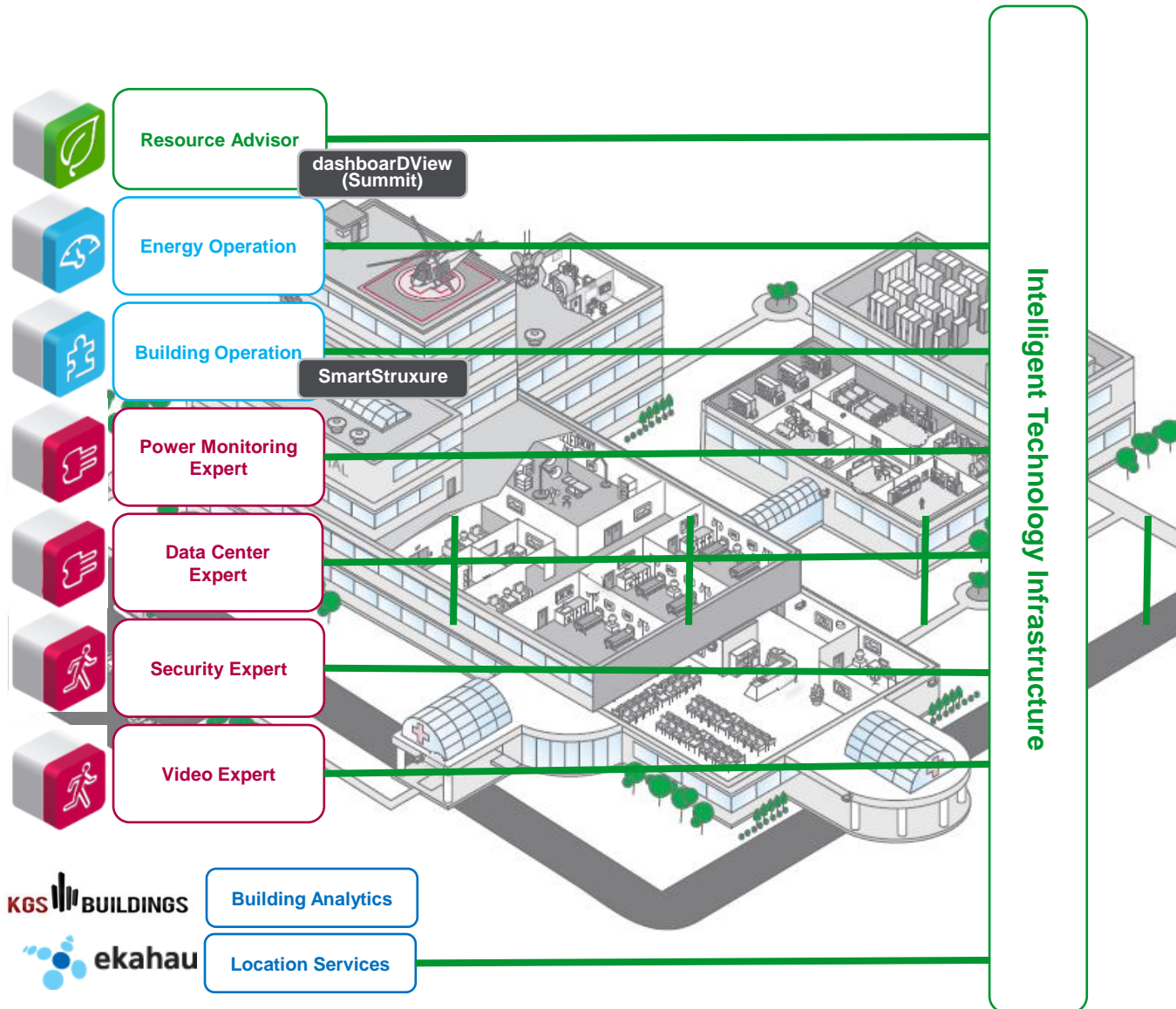
What is StruxureWare?

In a word: **software**

In a few more words:

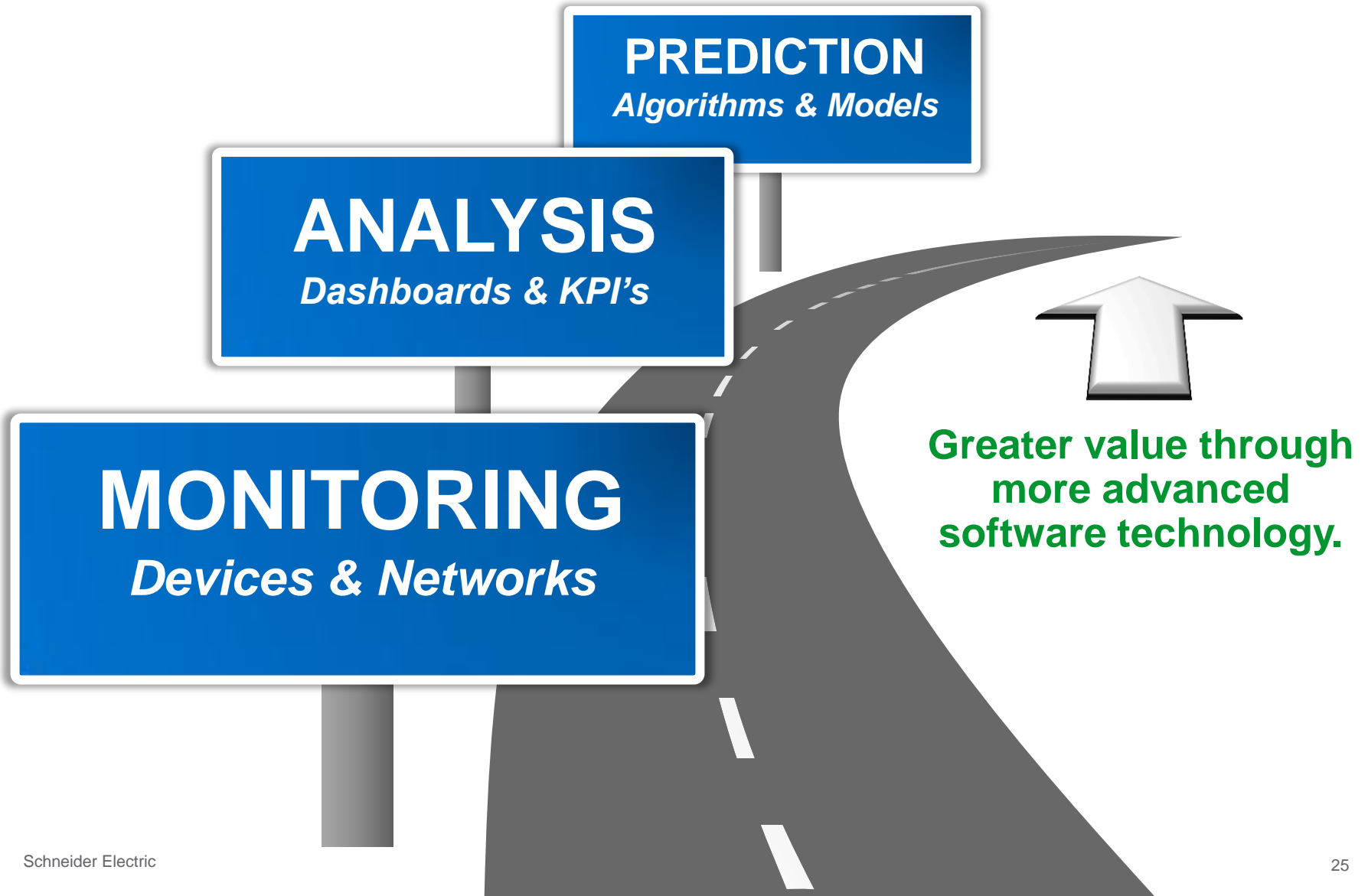
StruxureWare is Schneider Electric's platform of **integrated software applications and suites** that help to maximize business performance while conserving enterprise resources.

Bringing together.....



Where are we headed?

Innovative software solutions allow solutions to become more sophisticated, predictive.



How is it used?

5 Domains of Expertise

Power Management

The Electrical Manager ensures power availability and quality and reduce energy bills

Process & Machine Management

The Production Manager ensures the efficiency and performance of machines and processes, improve productivity, and optimize costs

IT Room Management

The IT Manager guarantees the availability of critical applications while keeping energy costs as low as possible

Building Management

The Facility Manager improves building's performance to use less energy, and be more comfortable and productive for employees

Security Management

The Security Manager safeguards people and assets, and protect core business functions

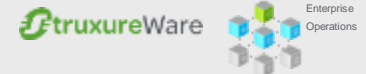
1 Unique Supervision

Site supervision

The site manager ensures business continuity, user comfort, equipment security, and energy performance. Supervising integrated domains at one location, the site manager can drive improved performance and react quickly in all situations

Enterprise Performance Management

The CEO, CFO, and energy manager master business operating cost efficiency and track the potential energy savings at the site and enterprise levels. EcoStruxure system architecture enables your energy management investment to yield the best returns, no matter which vendor you've selected in the past or which technology best suits your enterprise in the future.

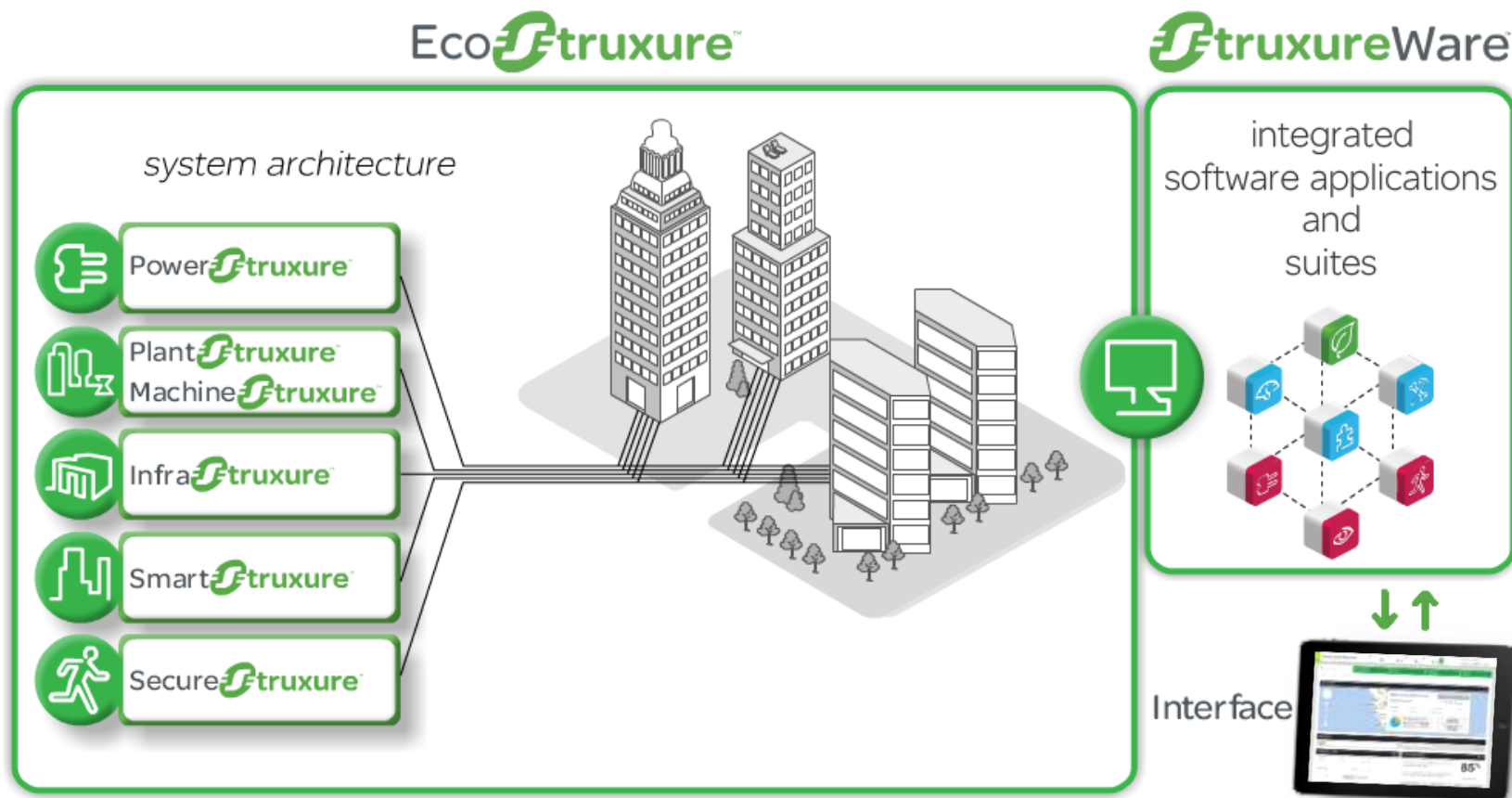


EcoStruxure™

Design, Installation
and Maintenance



Powerful Integration



An innovation eco-system for a simpler and greener future

We start today...

Partnering with 50+
best-in-class public and
private organisations



**Leading global
projects** for Intelligent
buildings, renewables,
nanotechnologies

Homes
Minalogic
Smart
Electricity

**Boosting
standardisation**
Zigbee, IEC, NEMA

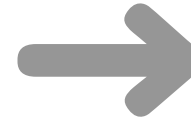


Funding start-ups
Schneider Electric
Venture capital fund

Demand
response,
software
breakthrough

**7,500
R&D
engineers**
**50 centres in
25 countries**

So tomorrow we can be...



Energy
efficient



Environment
friendly



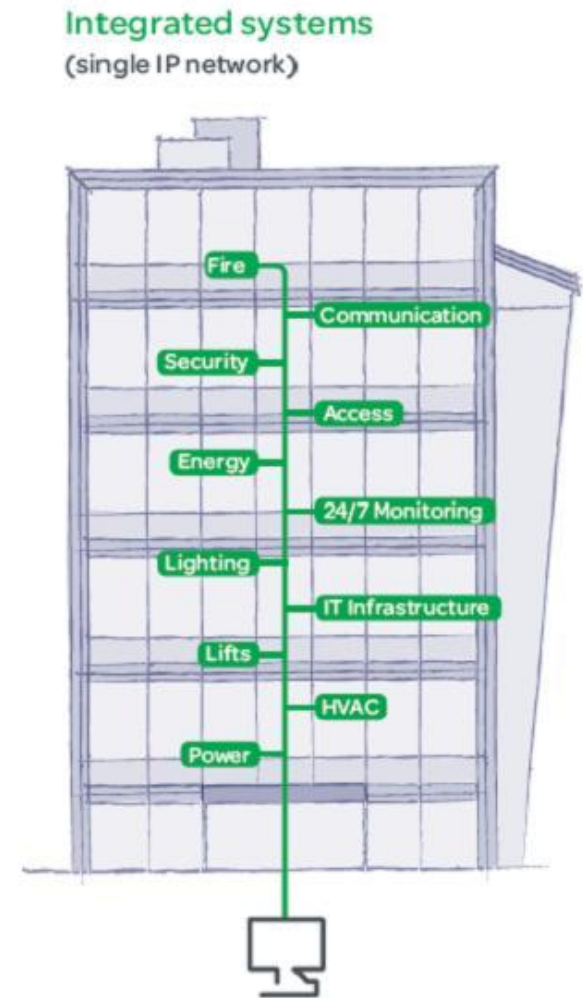
Open and
connected



Available 24/7,
on site and remote

Enhanced value & performance with integrated building solutions

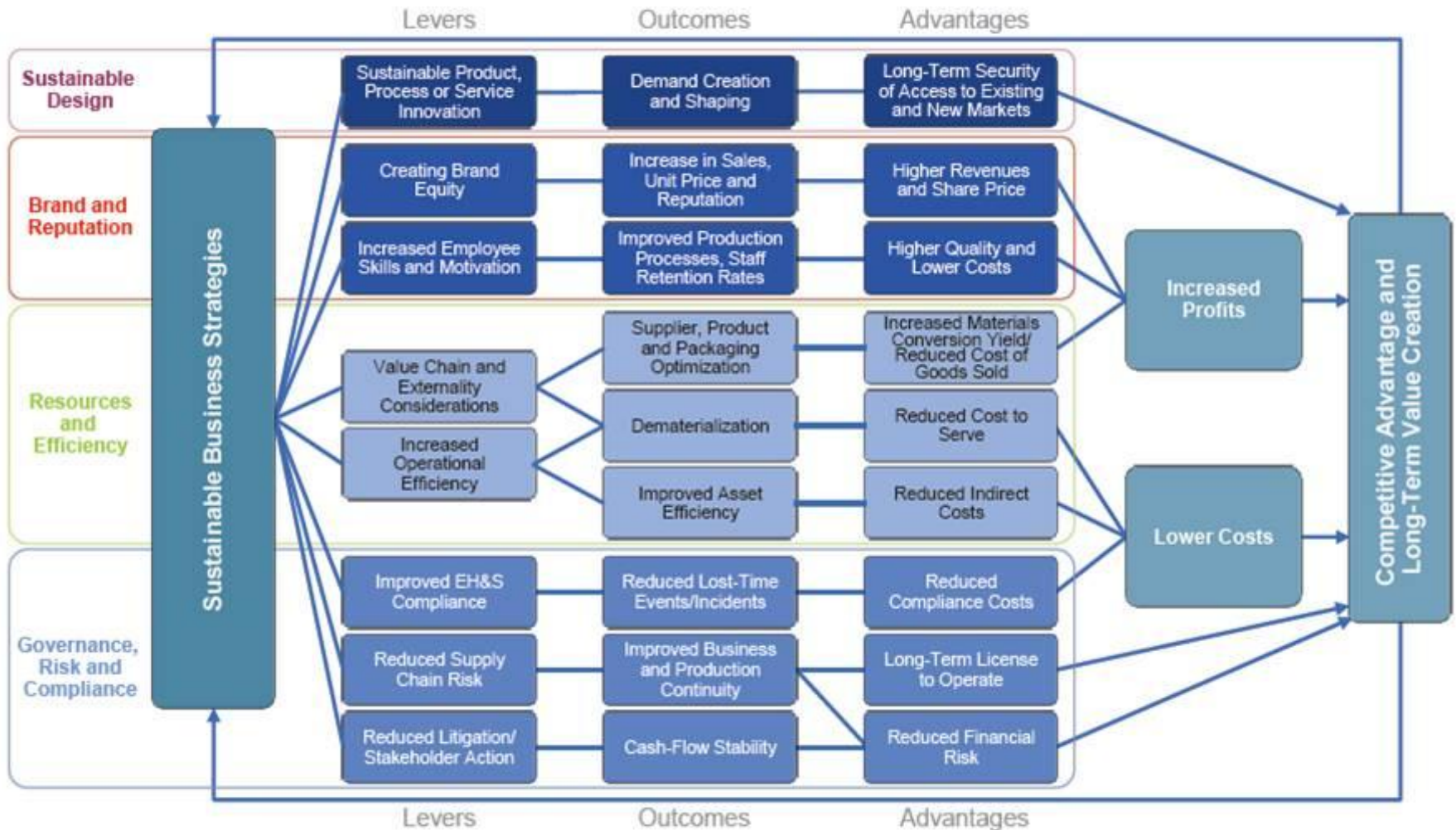
- **Reduce costs** of operational expenses
 - Energy (up to 30%)
 - Maintenance
- Create new **revenue opportunities**
- Increase **employee productivity**
- **Optimise** space usage
- Enhance building asset **value**



Sustainable Business Strategies

FIGURE 1

Competitive Advantage and Value Delivery Through Sustainable Business Strategies



Source: Gartner (December 2011)

Make the most of your Energy



Schneider Electric

the global specialist in energy management

27

billion \$ sales in 2012

37

% of sales in new economies

110 000+

people in 100+ countries

4-5%

of sales devoted to R&D

The global specialist in
Energy management

5

Businesses addressing 62% of Australia's
final energy consumption

Buildings

Schneider
Electric

Industry

Schneider
Electric

Energy

CLIPSAL
by Schneider Electric

ITB

APC
by Schneider Electric

Partner

Schneider
Electric

Making energy...
Safe, reliable, efficient, productive and green



Schneider-Electric

A global leader in efficiency and sustainability

- ❖ Named 26th on the Global 100 Most Sustainable Companies – solutions and expertise to max enterprise efficiency & minimise environmental impact
- ❖ Gigaton Award – business leadership in action to reduce carbon usage
- ❖ Zayed Future Energy Prize – “Large Corporations”; leading efforts in renewable energy and sustainability
- ❖ Among the “Ethisphere” 110 World’s Most Ethical Company honourees; demonstrating real and sustained ethical leadership within their industries.