

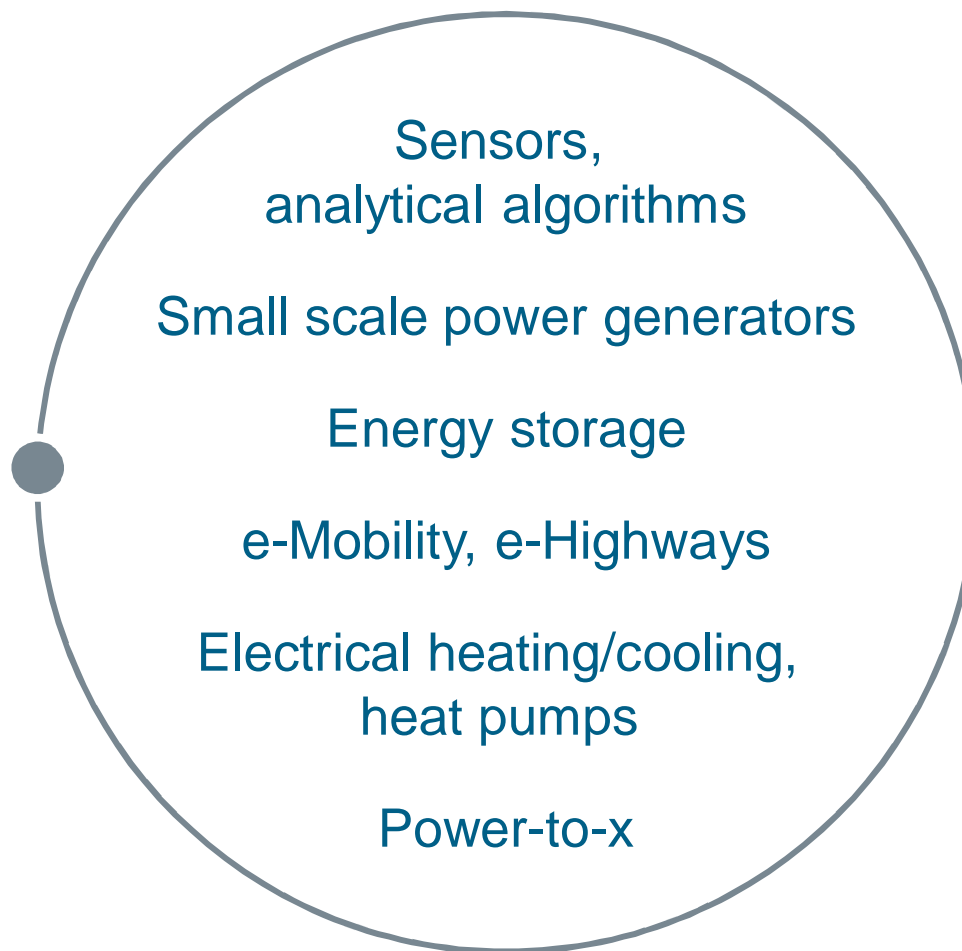
# Agility in energy – Unleashing the power of the industry

Ralf Christian | CEO Energy Management Division  
EUW, November 15, 2016, Barcelona



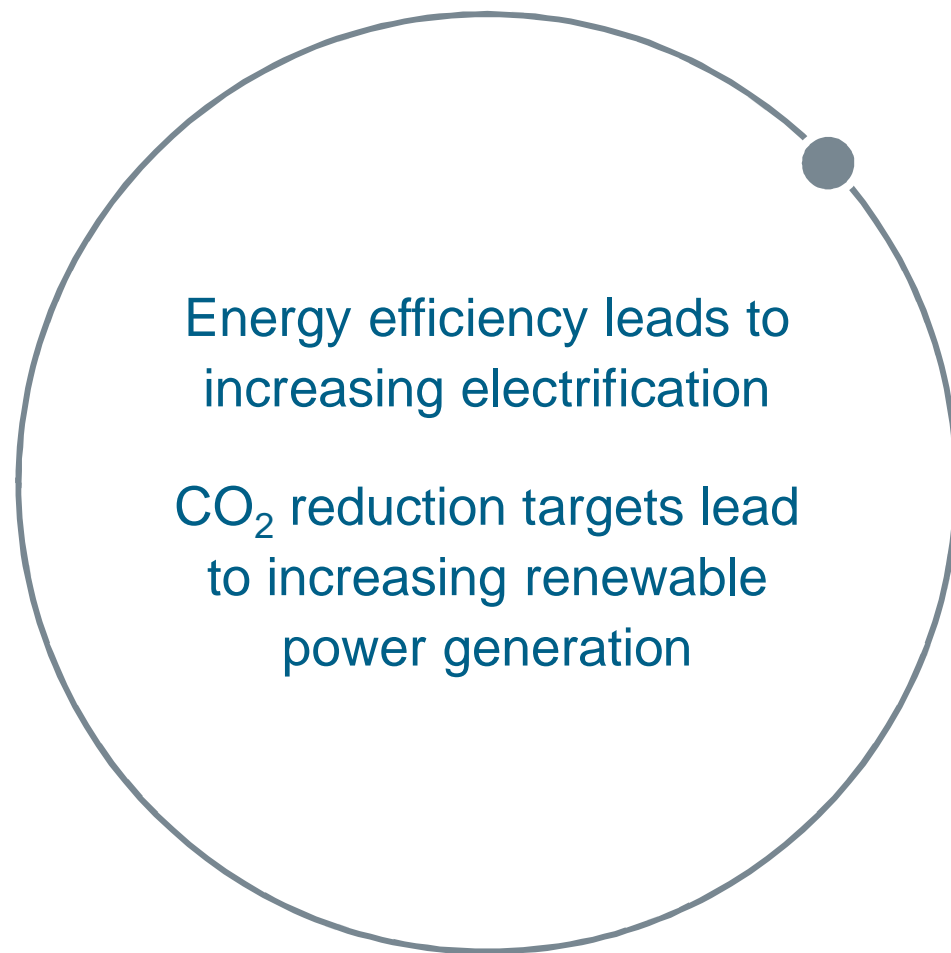
## Three major factors are driving the revolution of energy systems

### Breakthrough technology



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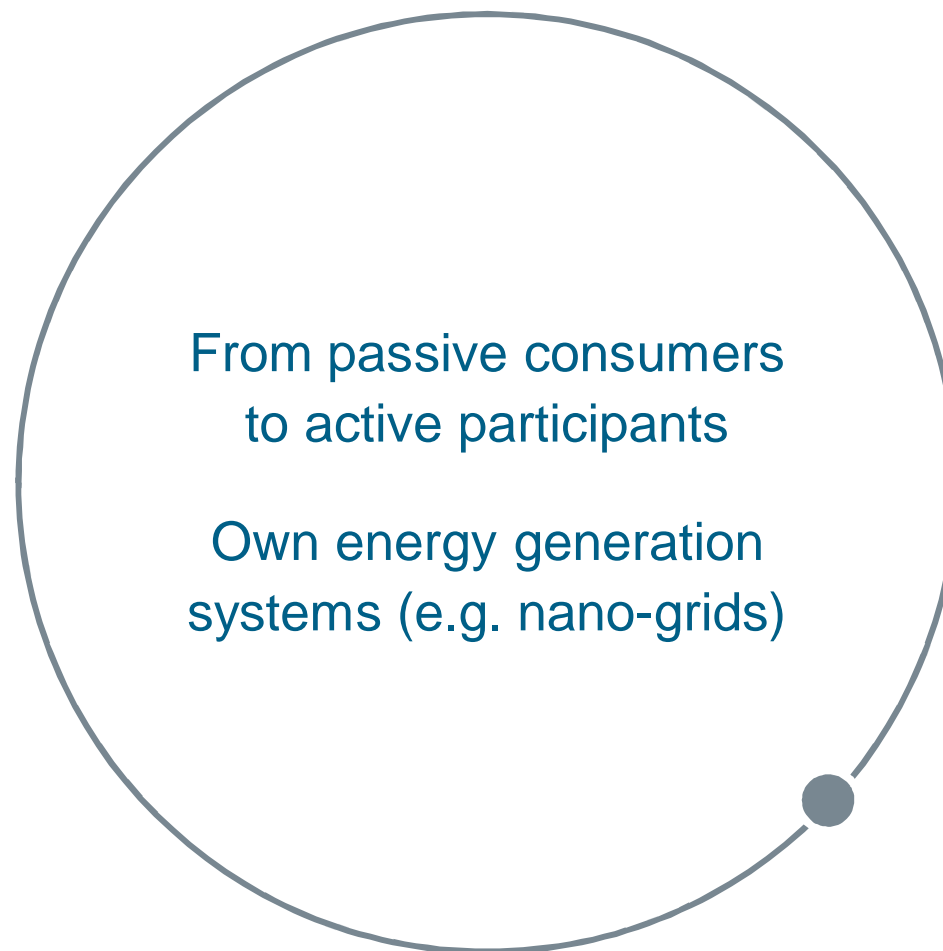
Breakthrough  
technology



Political  
targets

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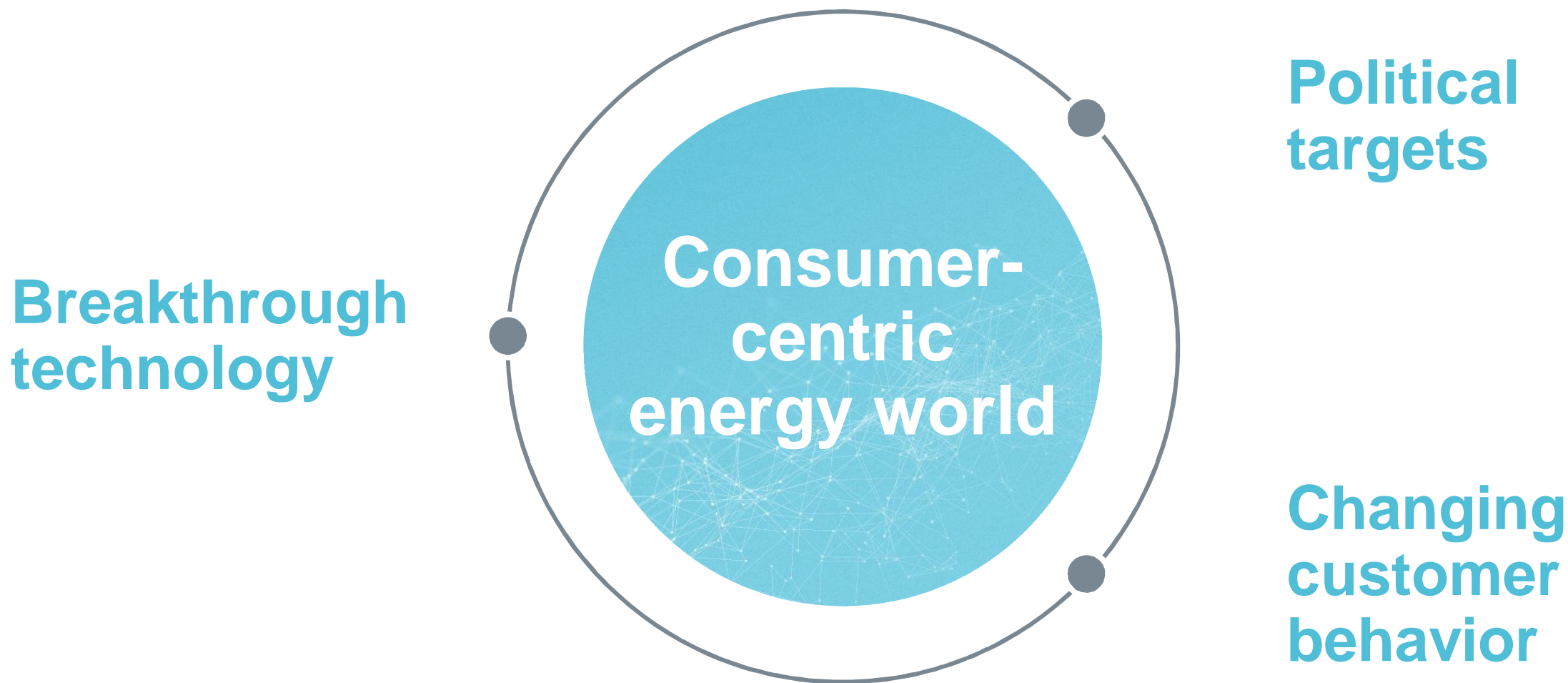
Breakthrough  
technology



Political  
targets

Changing  
customer  
behavior

## Three major factors are driving the revolution of energy systems



# What's changing?



## Past consumers are becoming future prosumers



# 57%

of consumers  
are considering  
becoming  
**self-sufficient**

...  
while they stay  
connected to  
the power grid

Source: Accenture's New Energy  
Consumer research program

## Utilities as distribution platform optimizers and service providers?



... of utility executives expect  
their role to evolve toward a  
Distribution Platform Optimizer

### Examples:

#### Platform provider for grid optimization:

- Network optimization services to support grid operations in real time
- Performance-based models for distribution

#### “Match maker” between local energy prosumers:

- Organization of local energy markets
- Microgrid engineering
- Energy infrastructure maintenance and financing
- Energy service provider, e.g. for efficiency and demand response programs, distributed generation and co-generation
- Ancillary service provider for transmission (aggregation of loads and distributed generation)

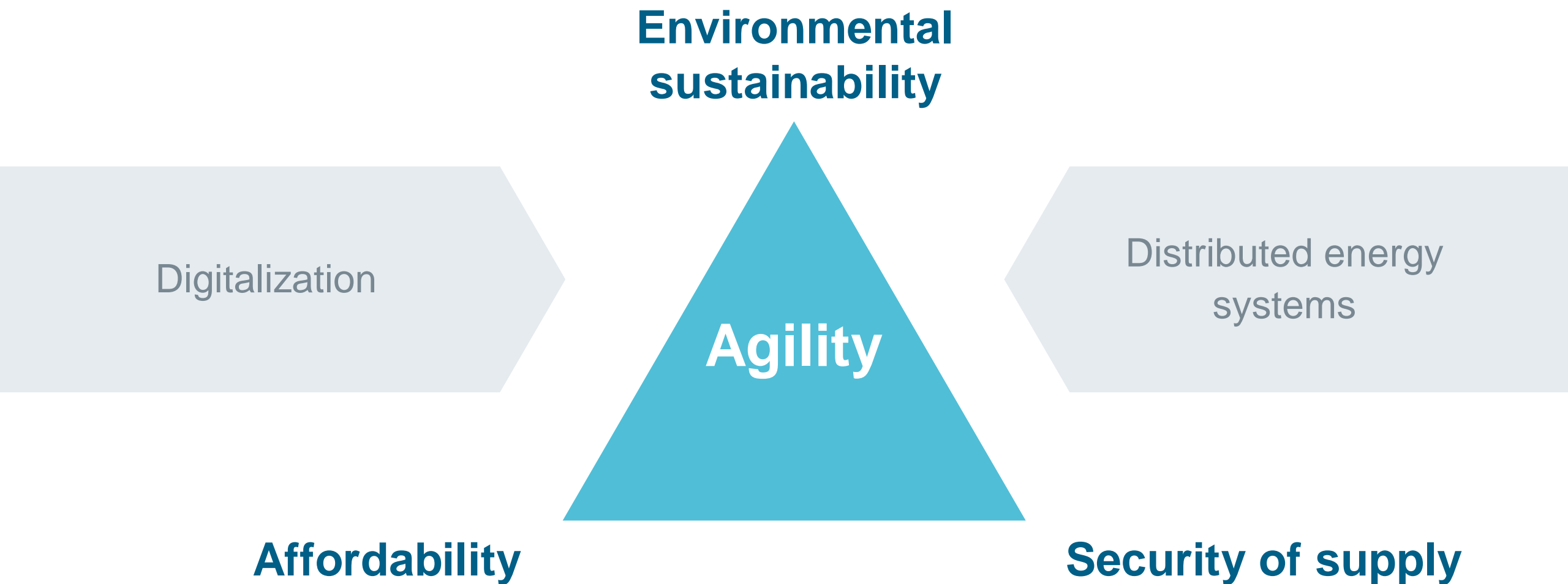
Source: [www.accenture.com/utilities](http://www.accenture.com/utilities)



How to prosper  
in such an  
environment?



## The secret to maintaining values and staying ahead



## What does it take to be “agile”?



### Culture

- Focus on end-customers
- Short decision-making paths
- Employee participation
- Drive for learning and innovation
- Flexibility



### Integration

- Intelligent devices in the grid directly connected with business and energy management applications
- Cross-sector network operation
- Interaction with consumers and “prosumers” via digital channels



### Technology

- Easy to manage
- Increased adaptability
- Open for integration
- High degree of safety and standardization
- Data analytics and decision algorithms

# Digitalization as a key enabler





## Increasingly data-driven grid infrastructure needs to be managed

**Integrated intelligence –**

From enterprise IT level over control level down to field level

**Open and standardized protocols**

**Adaptable products**

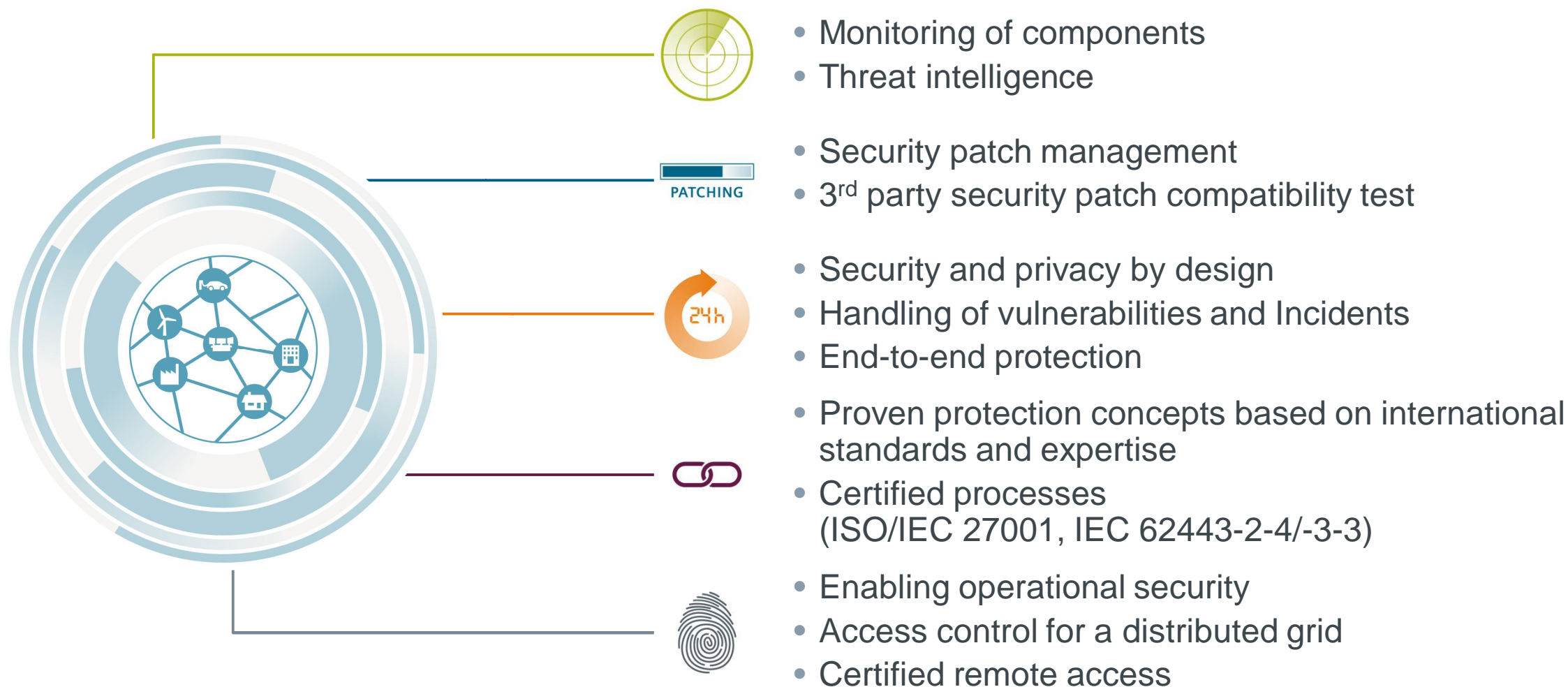
**Scalable systems**

**Fully or partially autonomously field devices**

**IT/OT integration**

**Advanced analytics**

# A holistic cyber security approach – More than the sum of its features



Facilitate an agile,  
consumer-centric  
energy world

An abstract graphic in the bottom right corner consisting of a dense network of thin, light blue lines connecting small dots, resembling a molecular structure or a complex web.

## Examples from host and partner countries EUW

European  
Utility Week



1 EUW 2017    Projects



# Viesgo project, Spain – Retail use of smart meter data for improved customer interaction

SIEMENS

- EnergyIP platform to intelligently manage data derived from consumption
- Integration of commercial and industrial consumers
- Scalable for future business applications, such as smart home, energy efficiency



- Analysis of data from 700,000 customers
- New capabilities for customized offers based on consumption patterns

## Ventotene, Italy – Off-grid electrification of an entire island

SIEMENS

- 500 kW / 600 kWh SIESTORAGE accompanied by a Microgrid Controller for a stand-alone grid
- Optimized diesel engine operation
- Management of electricity from renewable sources during periods of low load



- Reduced diesel emission for 4 hours / day in winter season
- Network stabilization



# EcoGrid EU project, Denmark – Adapting consumption to power availability

SIEMENS

- Linking energy management technology with building automation
- Decentralized energy management system
- Highly advanced building automation systems





# Rotterdam harbor district, Netherlands – Ensure security of supply with a self-healing grid

SIEMENS

- Development of a self-healing grid to significantly minimize outage times
- Regional controller to automatically handle fault location, isolation, and service restoration
- Automation technology to control intelligent secondary substations



- Reliable power supply
- Resupply of customers in less than a minute
- Significant cost savings



# Empowering the utility of the future – New approach of collaboration between manufacturers and utilities

SIEMENS

- Connect competencies to face disruptive opportunities
- Create future-oriented projects through innovation workshops
- Development of new ideas in a creative, but structured approach
- Identification of key drivers and hurdles



## Innovation workshop with Italian utility:

- 83 value propositions developed together during a single day
- 4 business ideas enabled by digitalization within the low voltage level

# Agility in energy.

Let's shape the customer-centric utility together.

Visit us at booth 3D97