A high-angle, nighttime photograph of a dense urban skyline, likely Hong Kong. The image is filled with numerous skyscrapers and high-rise buildings, many of which are brightly lit with warm yellow and white lights. The lights from the buildings reflect on the water in the background. The overall scene is a vibrant, illuminated city at night.

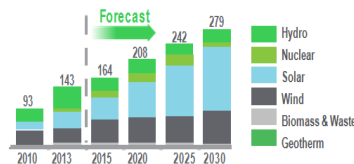
Towards the digital electric utility

Connecting the dots to maximize quality of service and profit

Presented by: Francisco J. Arenas

Trends

1 Decarbonization



Huge growth forecast for variable renewables

Solar PV and Storage
are expected to count for **32%**
of new capacity additions by 2030

2 Digitization

Proliferating automated devices connecting the “grid of things”

Big data integration
Internet of Things will connect **50bn devices** by 2020

3 Decentralization

Expanding energy consumerism
(smart homes, self-generation, EVs, financing services)

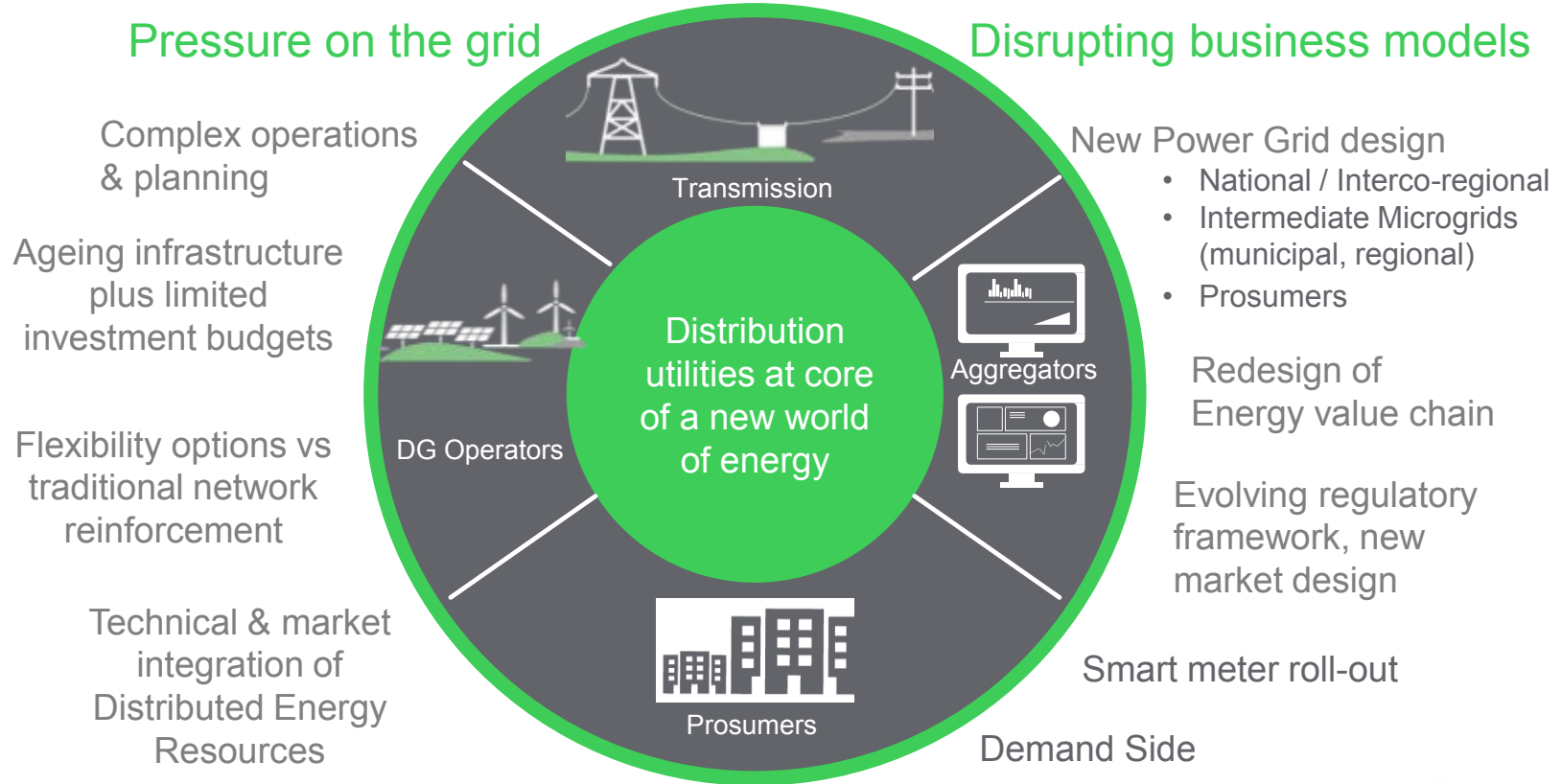
Prosumer challenge
57% of consumers consider becoming power
self-sufficient

**MORE
ELECTRIC**

Global energy
consumption will
increase by 40% in
next 25 years ...
and electricity
consumption will
increase by 80%

Smart Grid is becoming the new standard for grid operators

...Creating unprecedented change and business uncertainty



By 2025 traditional centralized model will be complemented by a world of distributed energy

Solution: The digital utility, connecting the dots

Revenue

Increase Energy Sales

- Reduce number and duration of outages
- Reduce commercial losses

New Services Sales

Cost

Energy

- Reduce technical losses
- Reduce energy bought

Personnel

- Optimize efficiency

Amortization

- Optimize assets usage
- Reduce new assets investments

Other

- Reduce penalties due to outages
- Reduce workers' compensation cases

Financial

- Reduce financial costs due to assets investments

Reduce operations & maintenance costs

Improve ROI on capital

Improve EBIT on power

Lower capital required

Increase customer satisfaction

Life Is On

Schneider
Electric



**Connected devices, real-time control, open software, analytics & services
sharing data across all departments in the utility**

We focus on reliability and safety

Increase network reliability up to 99%* and increase safety for field crews by implementing network automation solutions



- 99% improvement in SAIDI (90 min to 1 min)
- Investment: 3186 KEUR
- Benefits: 2773 KEUR / year
- Payback: 14 months

* Based on previous customer data. Future performance depends on customer's particular circumstances.

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Life Is On

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The ArcFM solution help the utility to efficiently maintain and share the Smart Grid network model allowing for the digital transformation



- 60% savings in time to sketch a design
- Making information an asset with a central position and high attention
- Integrating business processes across the Utility



We reduce energy losses

Reduce your energy losses cost by 4%/year with our ADMS



- **Avoided energy losses of 4% per year**
(144 GWh and 75000 tCO₂)
- **Costs reduction of 5,7 MEUR / year**



We maximize network assets usage

Our ADMS delivers operational flexibility and greater efficiency from existing assets



- 310 MW demand reduction of a 8400 MW controllable peak. New investments in generation avoided
- Avoided energy production costs of ~\$17 million



We enable efficient day-to-day operations

Our ADMS optimizes network performance as well as crews performance, allowing to **do more with less**

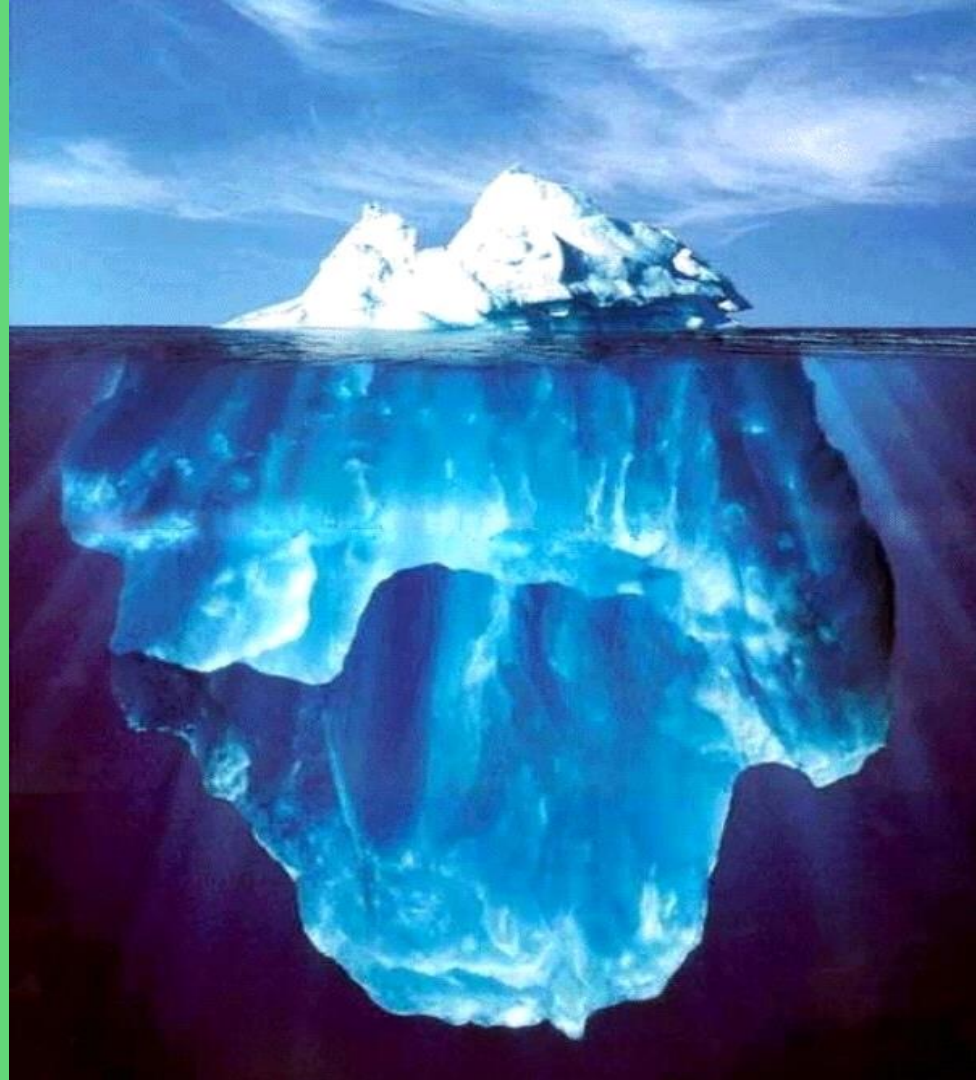


We help unleash the benefits of the investments on smart metering

Our Titanium solution optimizes meter to cash process while allowing new customer services

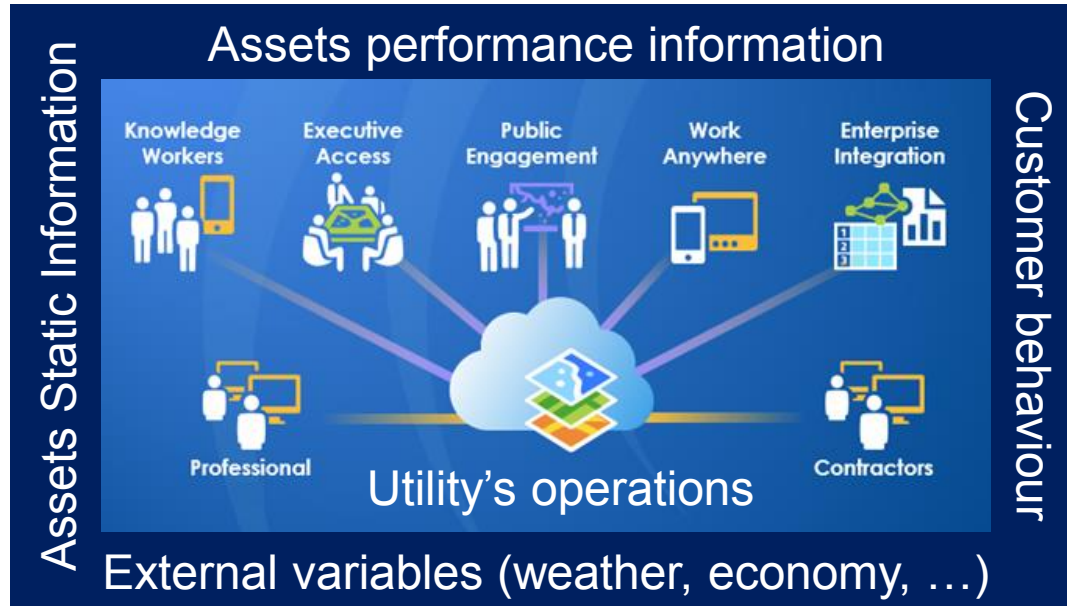


- **Cost Saving of High performance (1M meters):**
 - Saving 1 read a year for 1%: 500 k€
 - Saving 3 reads a year for 1%: 1.500 k€
- **Cost Saving of Remote connection/disconnection (8% of population change residence every year)**
 $48.000 \times 150 \text{ EUR} = 7.200 \text{ k€}$



The Digital Utility: when all dots are connected

Complex data and results shared in real time across the utility's systems are converted into actionable intelligence and lead to proactive actions that exponentially increase their value when available at all levels in the organization



EcoStruxure™

Innovation At Every Level

Life Is On

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