



Real mass applications for Smart Metering / Smart Grid

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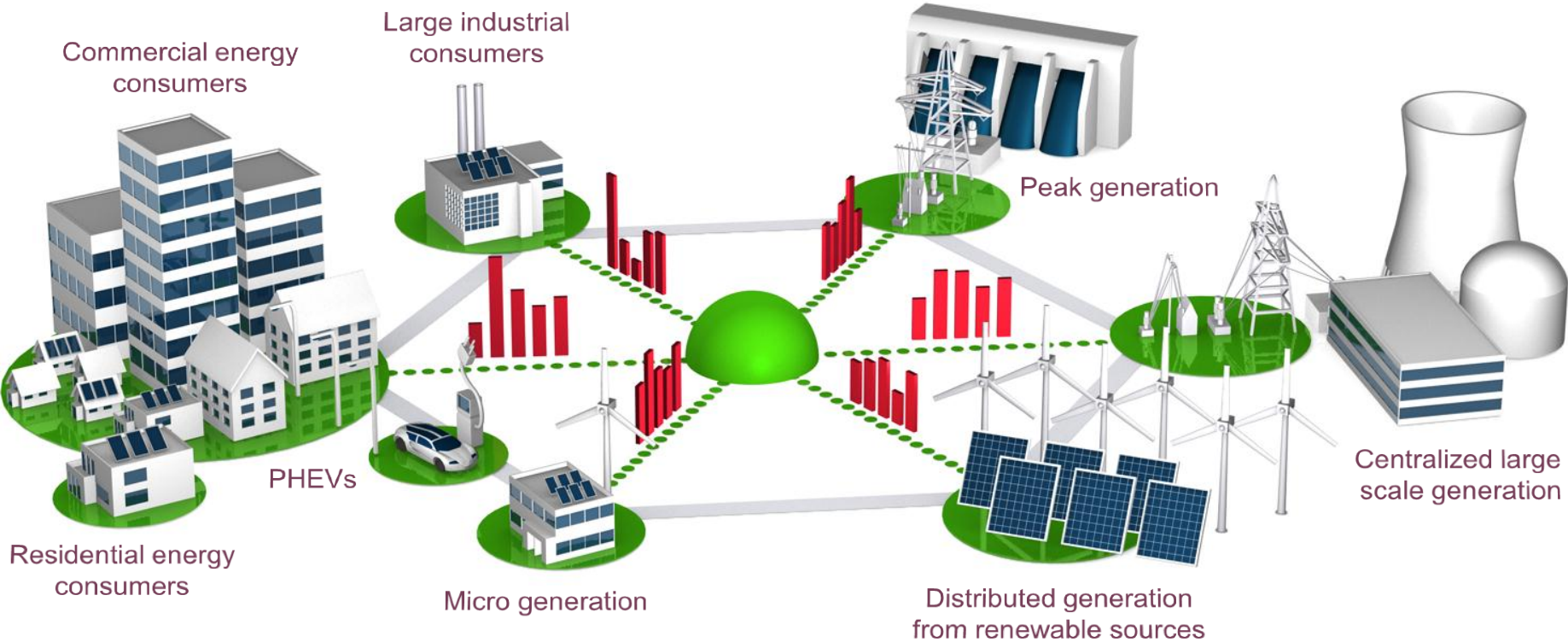


What is the “SmartGrid”?

“A Smart Grid is an electricity network that can intelligently **integrate the actions of all users connected to it** – generators, consumers and those that do both – in order to efficiently deliver sustainable, economic and secure energy supplies.”

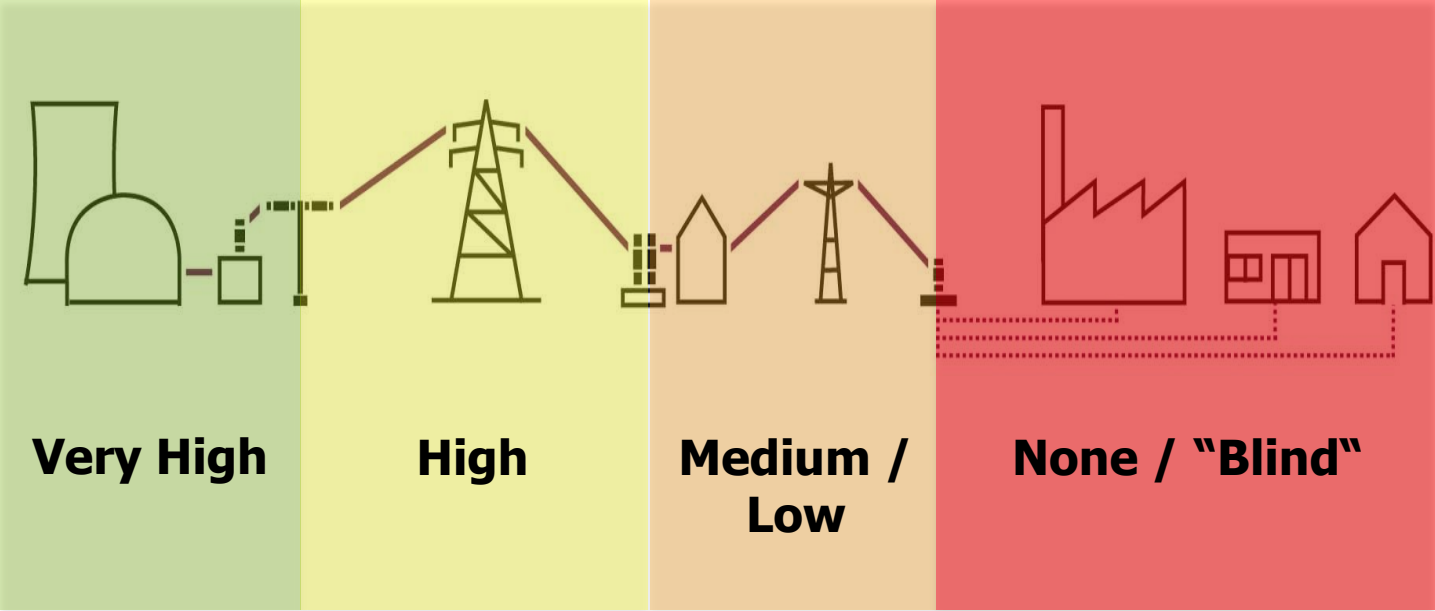
- European Technology Platform SmartGrids

The smart grid paradigm shift



Intelligence requires information

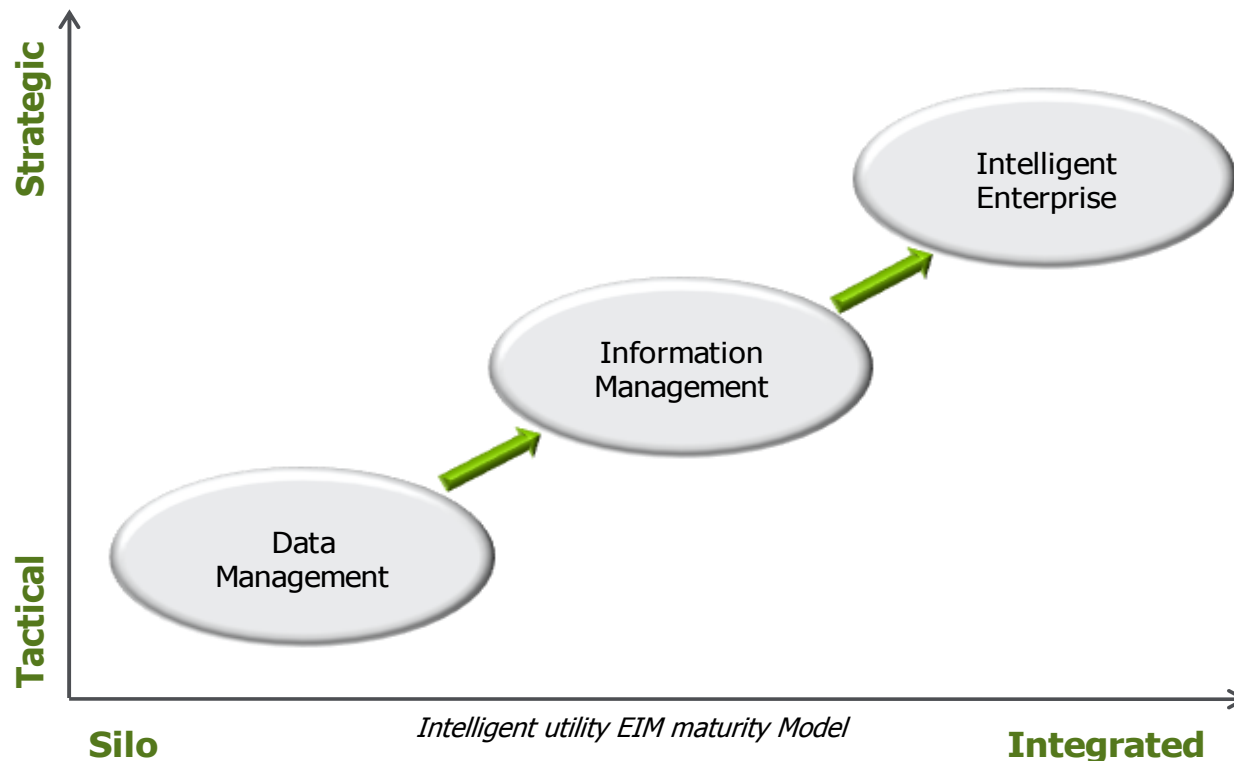
Automation /
Real Time
Feedback



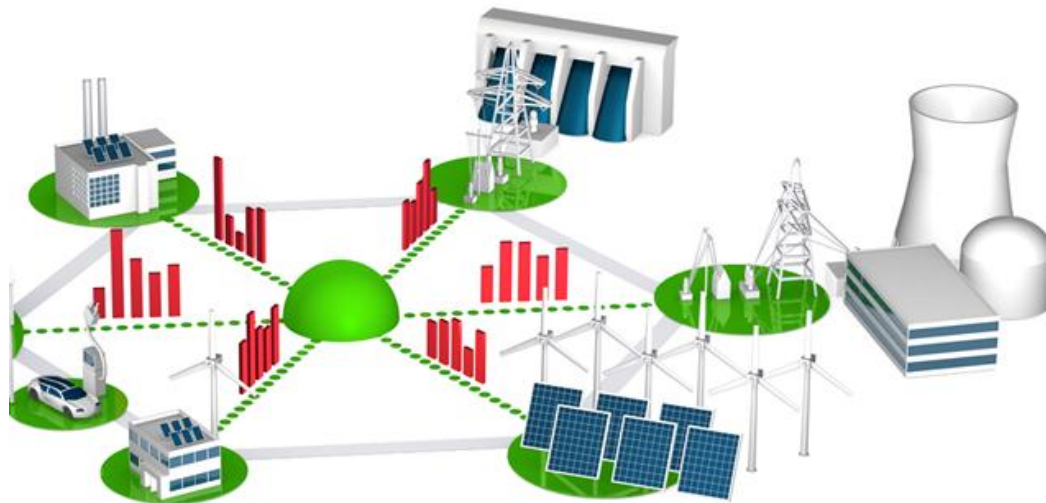
... Smart Metering a foundation for Smart Grid

Smart Metering is a key link to cover the "Blind" area

- + Communication Infrastructure to avoid the additional costs to cover the "last Mile"
- + New products and services needed to meet increasing consumer awareness and service expectations
- + Seamless integration of Smart metering with business systems secures clear and manageable applications



... Providing tools for network management



Reporting

- +Delivery Quality reporting
- +Network planning
- +Network balance settlement

Active supervision and management

- +LV network supervision
- +Outage management

- +Load control and Demand management
- +LV Transformer supervision
- +Network balance management
- +Production planning and estimation
- +Consumer micro production (el. vehicle)

... Enabling new customer services



- +Customer services
 - + Billing and Reclamation
 - + Change management
 - + Energy advisor services to increase awareness (web)
- +Service quality supervision
- +Metering quality supervision

- +Fraud detection and supervision
- +End appliance control (lights..)
- +Load control and management
- +Connection to home automation
- +Micro production

Challenges on a way to Successful Mass Rollout

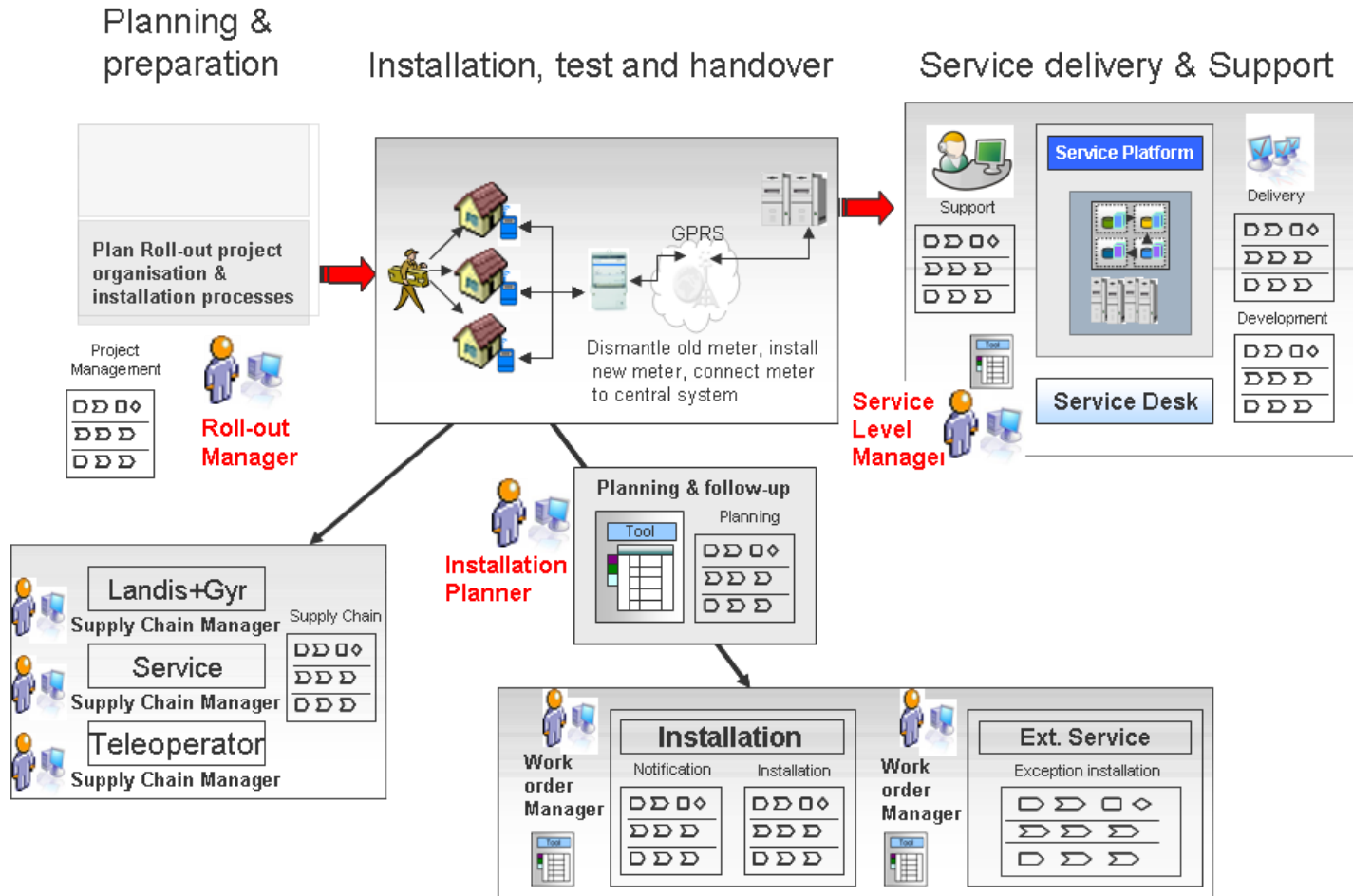


What does mass rollout project mean to parties

- + A totally new ballgame
 - From delivering products to delivering a solution (turn key)
 - From one time shot to an ongoing business (operations)

- + Trigger for improvements – good is not enough
 - Increase quality
 - Improve systems
 - Improve processes
 - Build new competence
 - Build a strong partner network

... effective and proven deployment processes



Reference Site: E.ON Elnät

- + Project is divided to two parts: Turn Key Delivery and Operation
 - Two main areas Götaland (299'108) & Norrland (81'797)
 - Total project ~381.000 household and 7.000 C&I meters and whole AMM system
- + Turn-key deployment service, (Landis+Gyr as a Prime supplier)
 - Metering device installations, Partner
 - GPRS-communication, Partner
 - System Integration and clean-up, Landis+Gyr
 - Training, Landis+Gyr+ Partner
 - System integration, Partner
- + Operation (via Partner),
 - Meter reading operation 6 years
 - Meter data delivery, 6 years
- + Legislation: Real time monthly billing by mid 2009



Key learnings 1/2

+ Importance of partner selection and co-operation

- One prime contractor with partners as an **one team, together with Customer.**
- Use financially strong contractor / partners
 - due to stable cash flow
 - be able to solve unexpected situations/problems
- Use experienced and motivated of personnel

+ Clear and well defined project scope

- Minimise customer specific development during the Mass rollout project
 - If not avoidable then secure time for planning & integration tests
- Have clearly defined responsibilities and liabilities between parties

+ Real-time monitoring of the deployment project

- Customer and meter data must be of good quality (clean-up to be done before the start)
- Active installation supervision sets requirements for PDA solution to provide online data for installation monitor
- Monitor installation quality continuously (field tests)
- Logistics must be 100% secured and monitored (also area warehouses in field)

Key learnings 2/2

+ Seamless integration between the systems

- Reliable and secured data transfer between the utility's business systems, Smart metering software and the installation tools
- Clearly defined IT application & roles
- Tools for Field work management and supervision, must be designed for Smart meter deployment

+ Clean-up is essential part of the deployment project and basis for operational quality

- Tools and methods to solve and manage discovered problems like:
 - to find the meter location
 - mobile network coverage (to have alternative operator or technology)
 - meters not available
 - bad installation (electrically unsafe environments)
 - main switches are off (impossible to check communication)
 - customers refusing to the meter change
- Clear tests and acceptance criterias defined by area
 - Get The benefit of Smart metering at an early stage
 - Gain the process learings into organisation as soon as possible

Real mass applications for Smart Metering / Smart Grid

Smart Metering is a foundation for Smart Grid

- + Covering the “blind” Area
- + Providing tools for network management
- + Enabling new service opportunities for customers

Experience is key for success

- + Understanding the impact to utility processes
- + Seamless integration between systems
- + Key resources with right competences and skills
- + Commitment and involvement of parties
- + Proven processes and tools for Smart metering rollout and operations

Anyway Challenges and Discoveries will be expected



Keeping the door open for the future



Thank you

Landis
|Gyr+
|manage energy better