

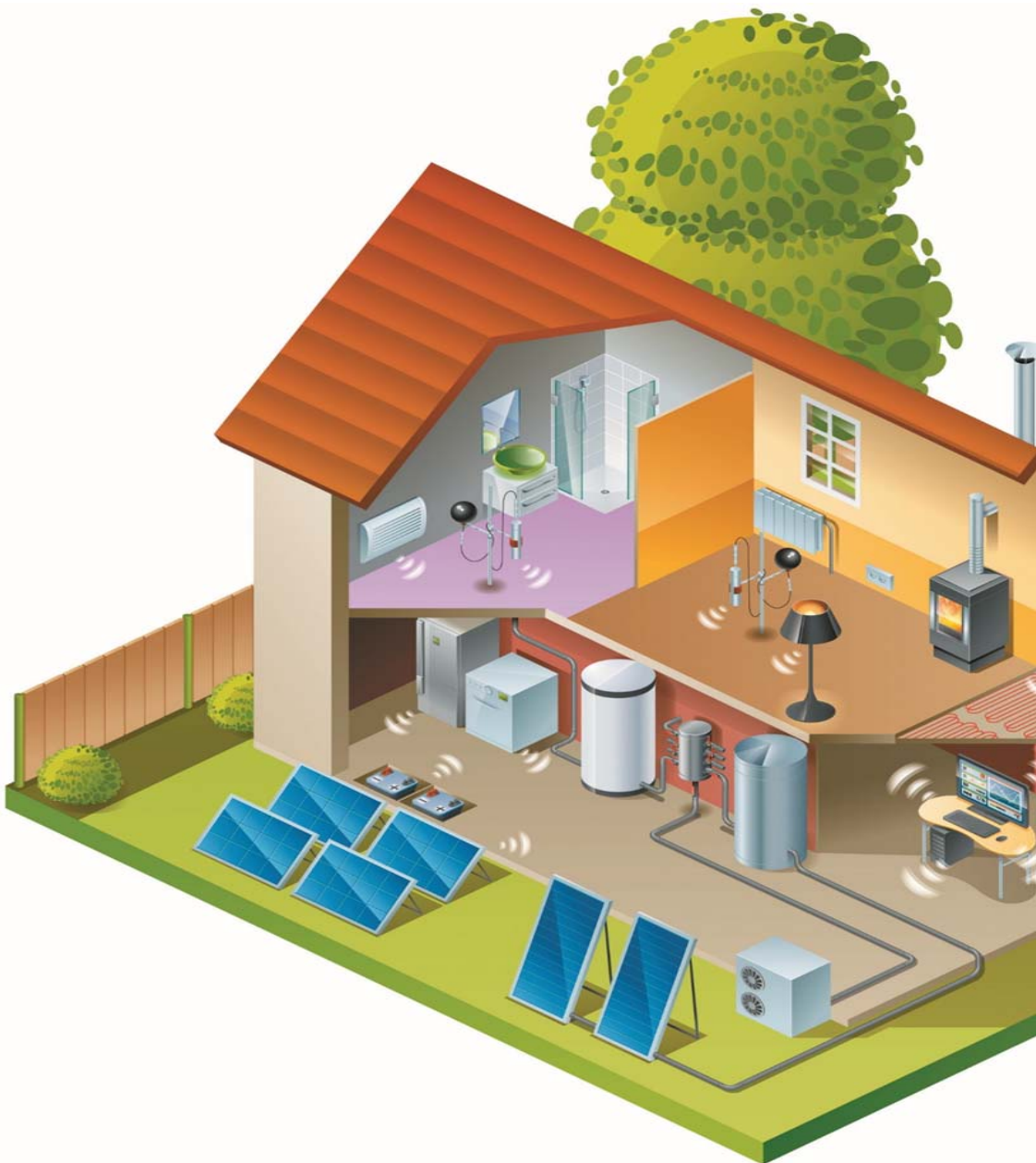
IOT STANDARDIZATION ENABLING SMART HOME INNOVATION & VALUE

ECHONET CONSORTIUM

TOKYO
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Not well known about White Good appliances: HUGE theoretical load triggering potential !

White Goods are replaced on average every 10 years, and now communicating White Goods have started to deploy. From a user viewpoint, Dish Washers, Washing Machines, Dryers usage can be differed and will over time provide an overall load control potential.



Experiment in Belgium (240 homes end 2014):

Extrapolated potential for Belgium

5M homes, 11M inhabitants:

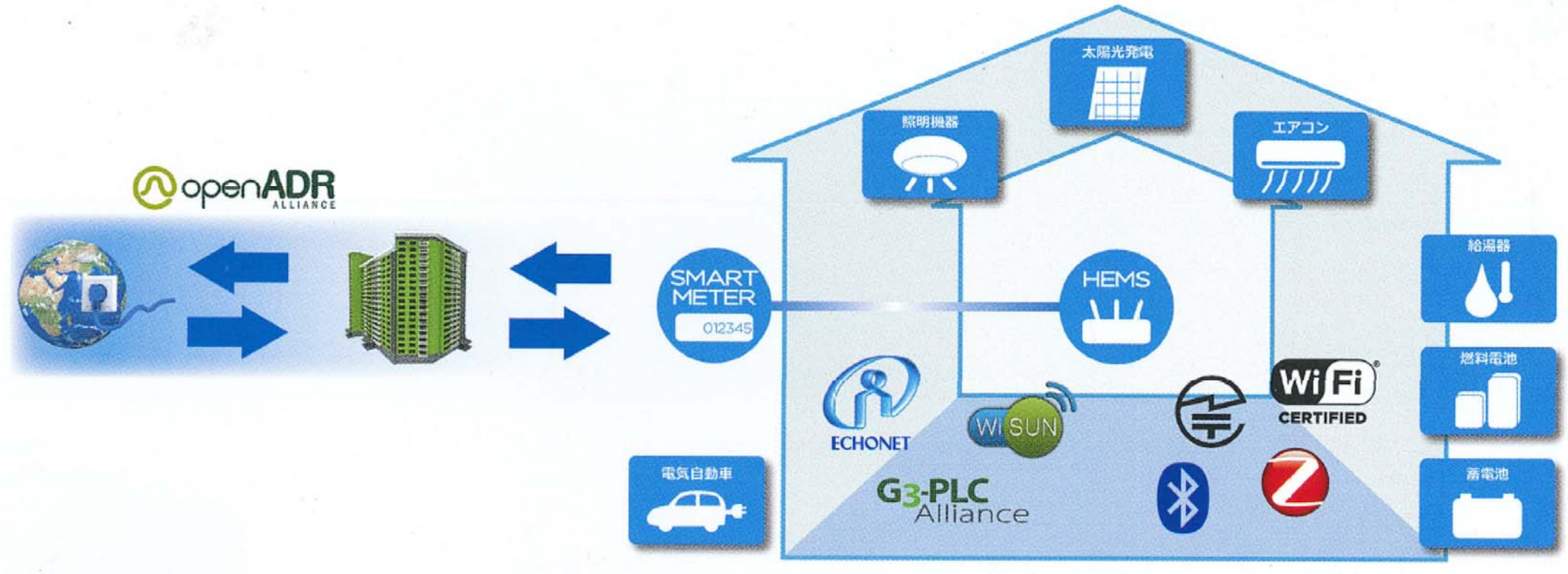
2 GW load triggerable



Japanese Exemplary leadership revealing fundamental drivers

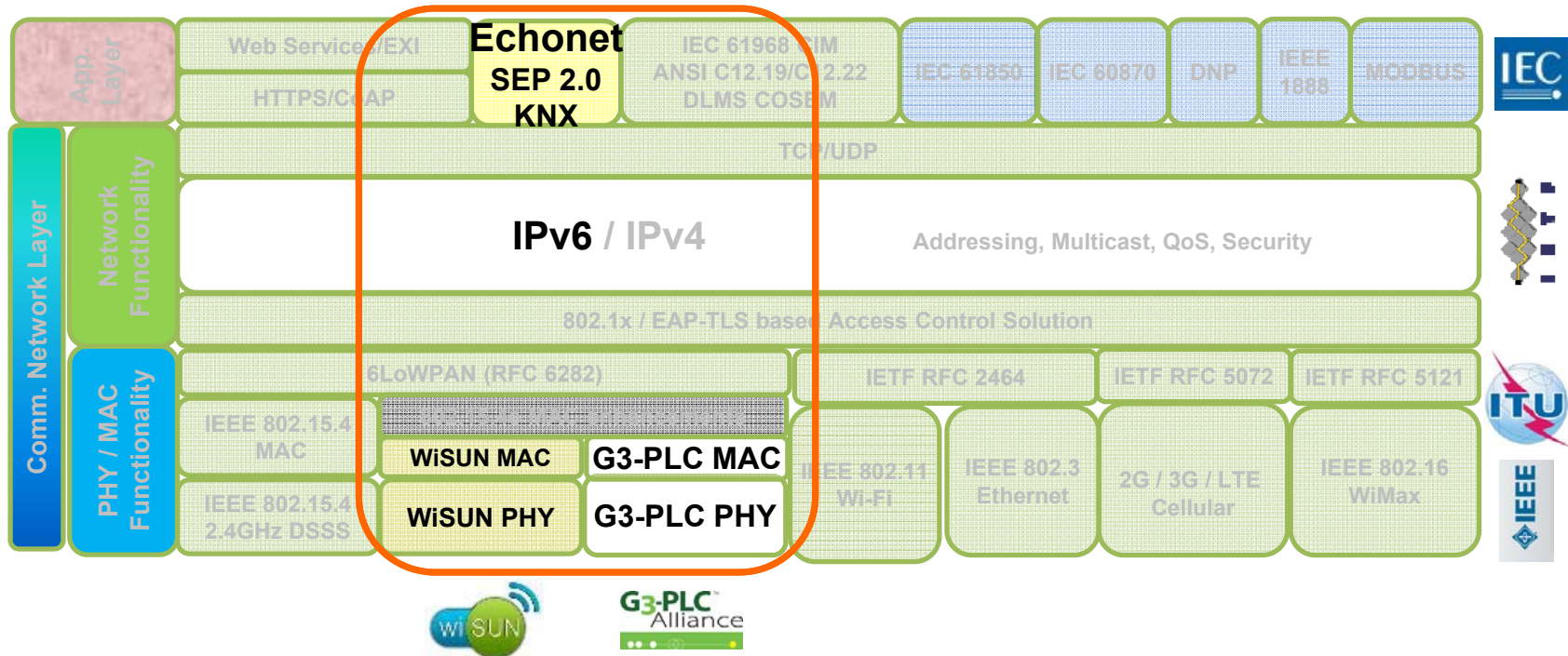
- ▶ **Urgency for critical results has accelerated convergence**
 - Meters seat at the crossroad of many processes and stakeholders
- ▶ **Regulatory certainty & stability is a trigger for investments**
 - METI has mandated a « Meter-HEMS » interface allowing for HEMS vendors to invest even before meters are deployed
- ▶ **The complete chain from end to end to be considered**
 - Meters but also customers Hems and platforms have been designed at once
- ▶ **International standards for competition to performance**
 - METI is mandating
 - *G3-PLC & WiSun -IPV6-Echonet Lite*
 - *Open ADR for Utilities-Large Aggregators communications*

Japanese exemplary leadership..... very strong standards foundation !





Very strong foundation of two communication technologies



- Standardization at all levels to ensure interoperability and reduce technology risk for utilities
- Enables common application layer over various wired and wireless communication technologies





ECHONET Concept (IEC 62394)

A home network system using home appliances and equipments installed in ordinary homes, small office buildings, and stores

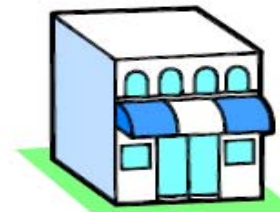
1. Support for various transmission media without rewiring
2. Object-oriented modeling of appliances for Multi-vendor interoperability
3. Plug-and-play functionality



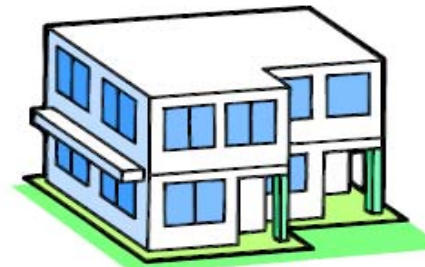
Ordinary home



Multi-dwelling buildings



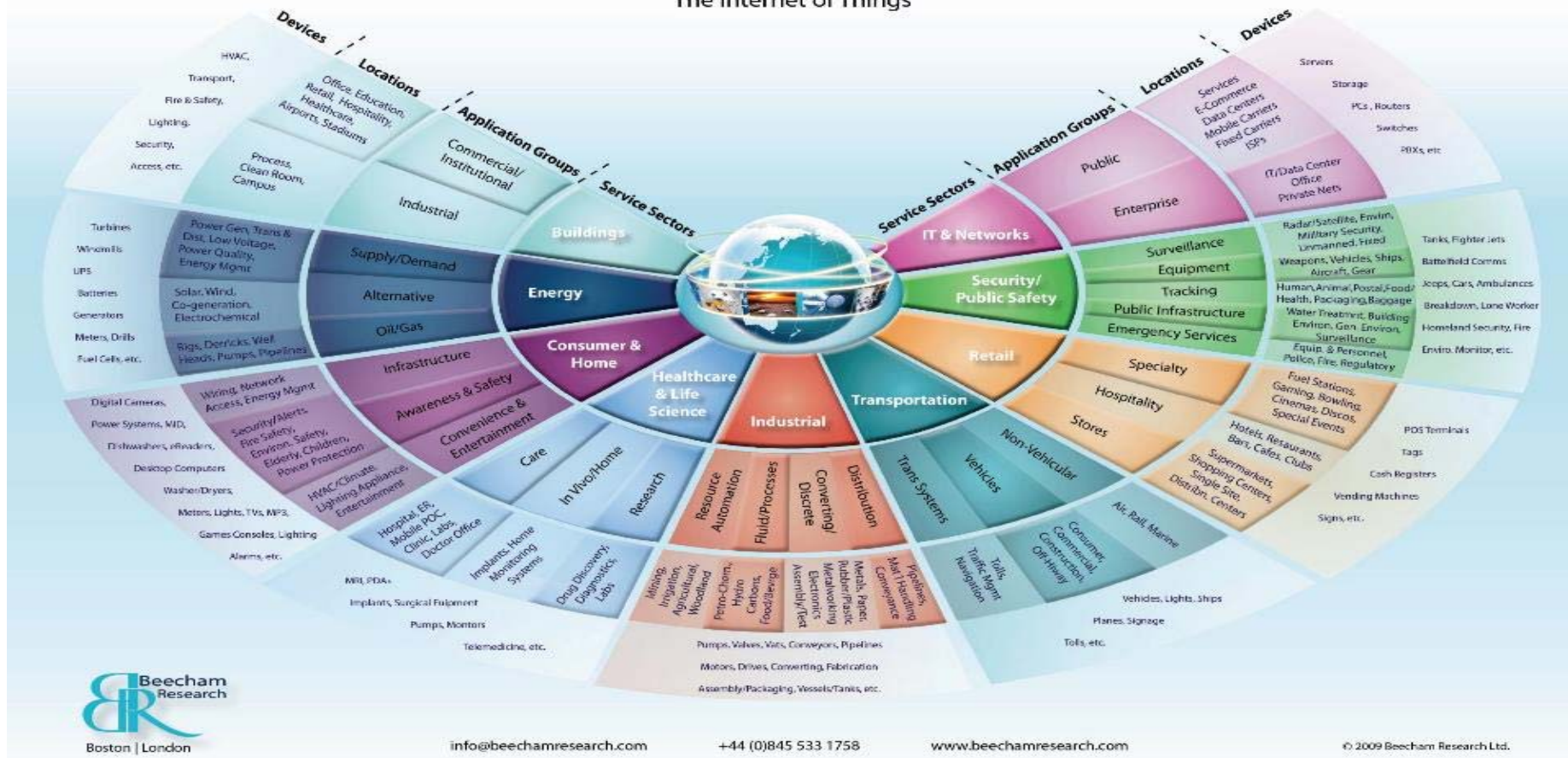
Shops



Small-/Medium sized office building

Standardisation to harness complexity !

M2M World of Connected Services
The Internet of Things



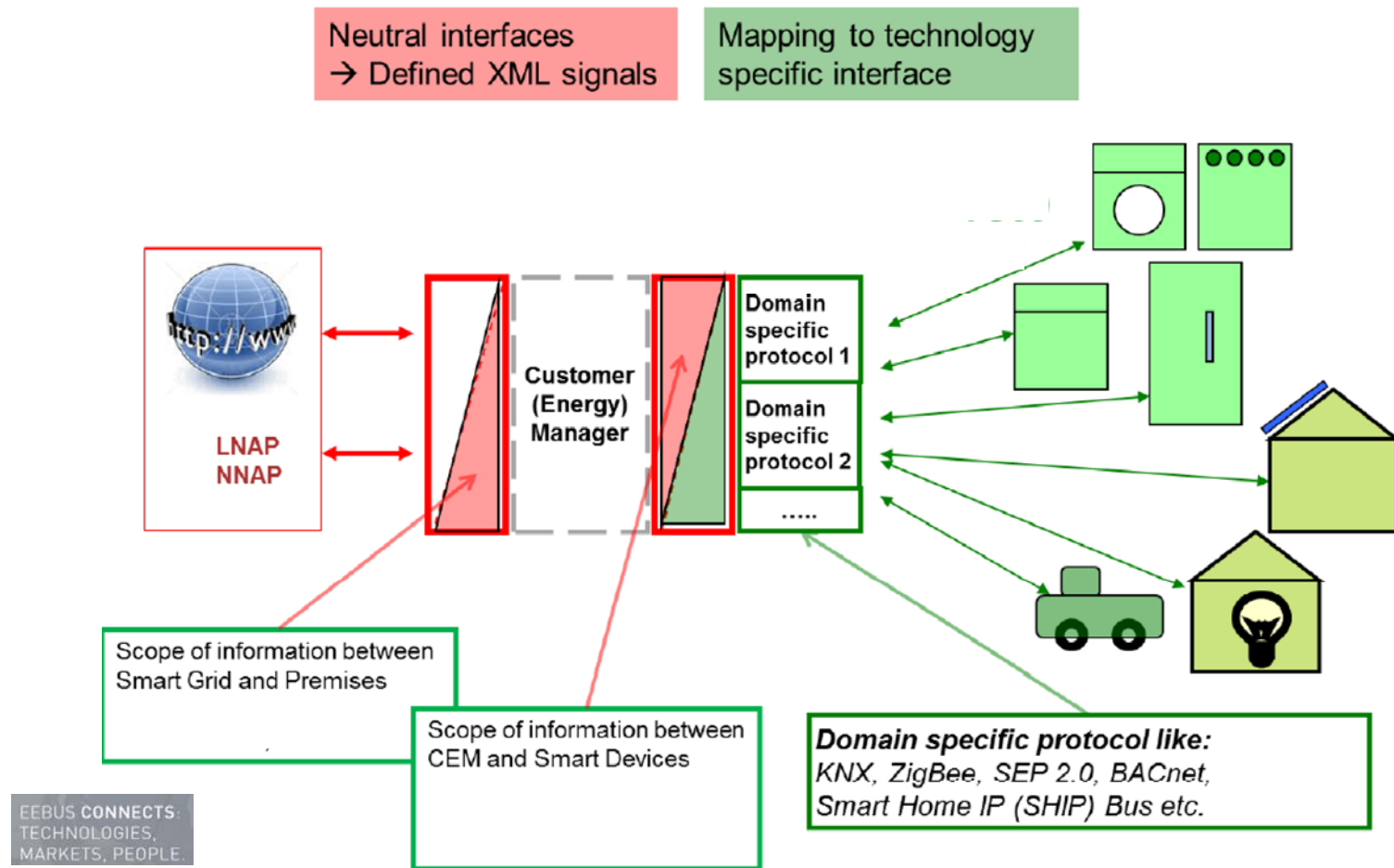
IoT standardisation enabling Smart Home value - Schomberg Tokyo Dec 2018



Bridging different standards ecosystems: dead end danger !



Example of a multi protocol universal adapterat the semantic level !



WARNING: The Value is in the Smart Rates !

“Tempo” (1993): all winners-no losers 400.000 customers 90% satisfaction



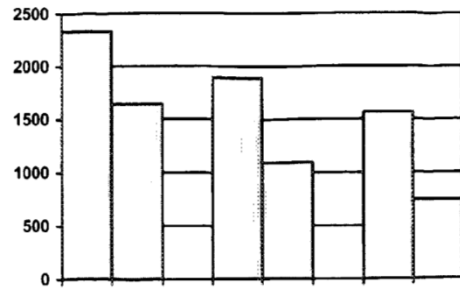
Price advisory service

Start up service and coaching

Thoughtful commercial follow up

Even better with Energy Management System

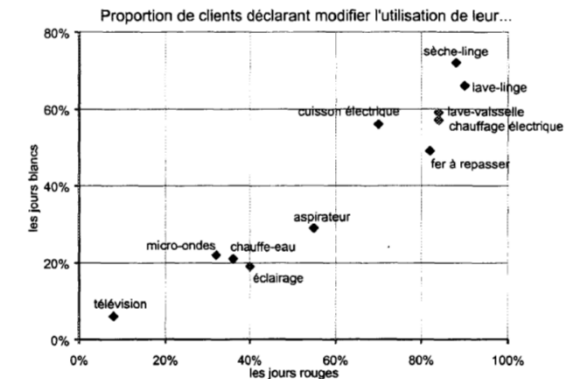
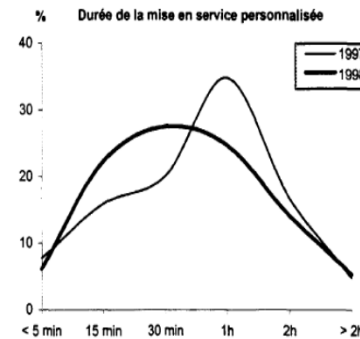
Average power (W) according to prices



300
days

43
days

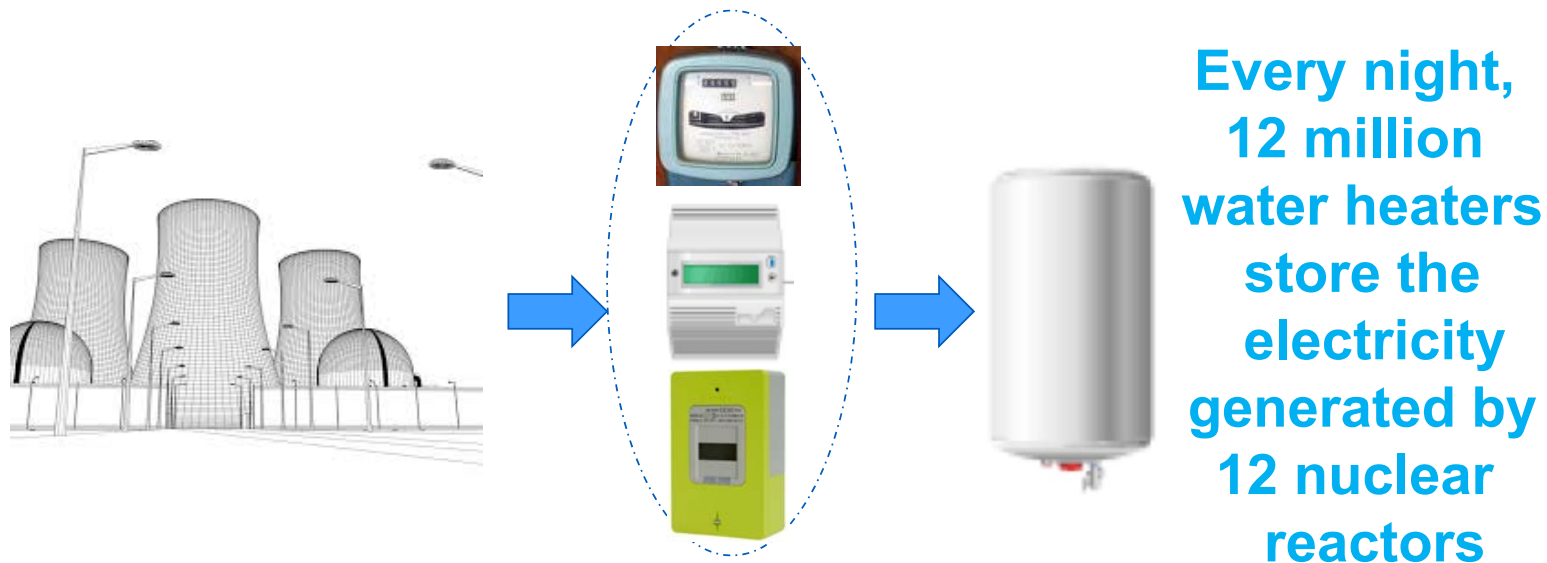
22
days



% normal use	washing machine	clothesdryer	dishwasher
white off-peak hours	61%	37%	61%
white peak hours	19%	14%	16%
red off-peak hours	4%	3%	7%
red peak hours	4%	3%	3%

System Thinking sublimates technology novelties!

***The oldest and most effective Smart Grid in the World
40 years of Load Control in France : 10% peak reduction***



**“If you can't solve a problem, enlarge it”
(D.Eisenhower)**

Standards = Smart Energy “chromosomes”



Thank you

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