



# De-risking Smart Metering Roll-out

Evaluating ICT solutions  
for Smart Metering and future energy services

BT Adastral Park, Ipswich, 26<sup>th</sup> May 2011

<http://www.cleveronline.org>



# Project partners



*Communications, computing  
and content research*



University of  
**BRISTOL**

June 2008 – May 2011

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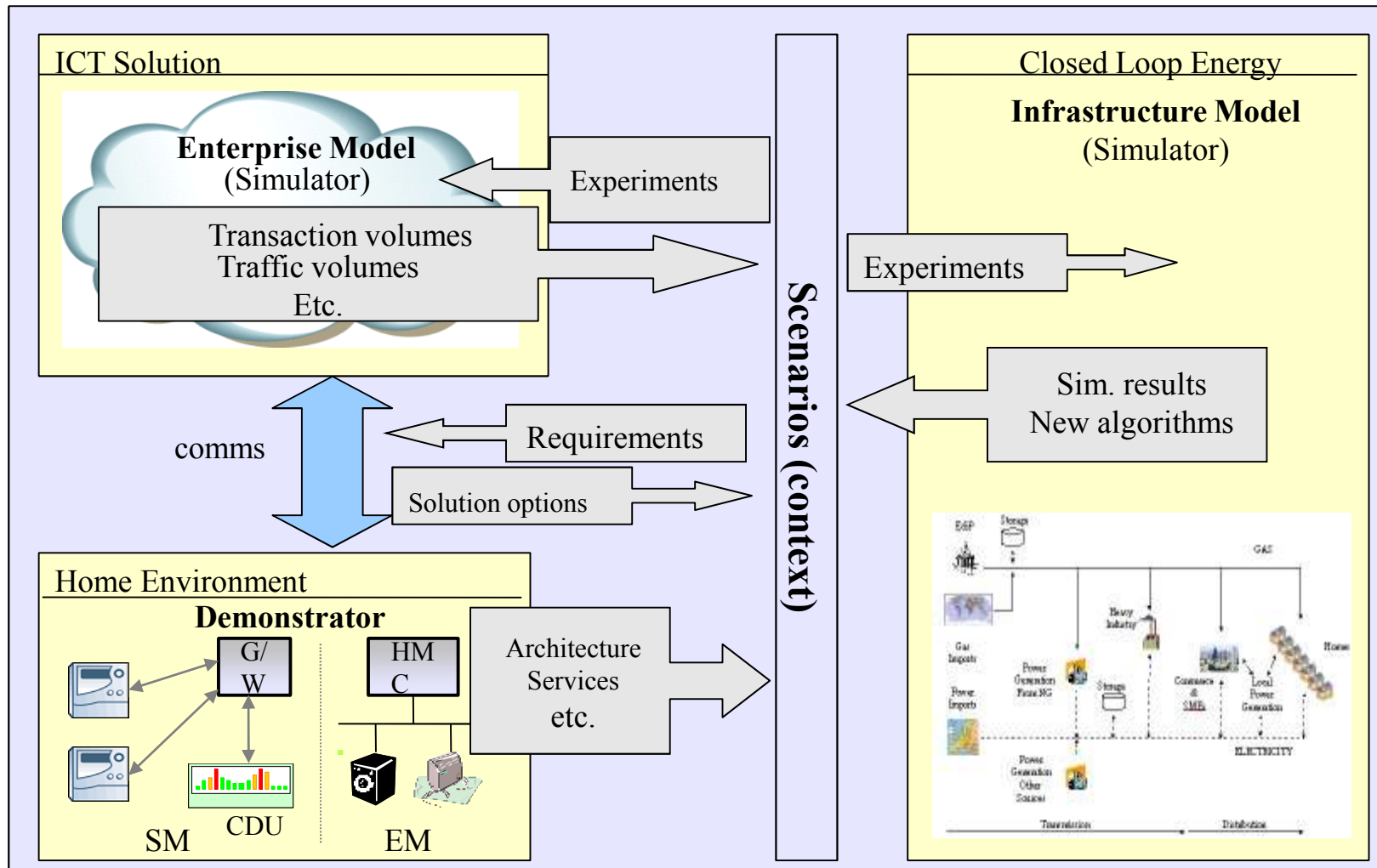
# CLEVER – The Need

- The inevitability of the deployment of Smart Metering led to the need to understand the implications of connecting large back-office systems to millions of CPE and devices
- The need to explore the risks associated with the deployment of such complex networks
- The assessment of different options and architectures leading to decisions over options based upon cost and effectiveness

## Context – future energy

- Demand from all sides for sustainable solutions to address energy usage:
  - Customers, Regulatory / Government, and Business
  - Dwindling resources, highly volatile and increasing prices, climate change and GHG emission controls, aging infrastructure and security of supply
- Efficient energy usage is a major societal issue and an essential need.
  - Despite Smart Metering now being mandated, *the end to end business case is yet to be made*
- Technical arguments and solutions are known.
  - *How to make them work in a large scale is not known.*

# Project Overview



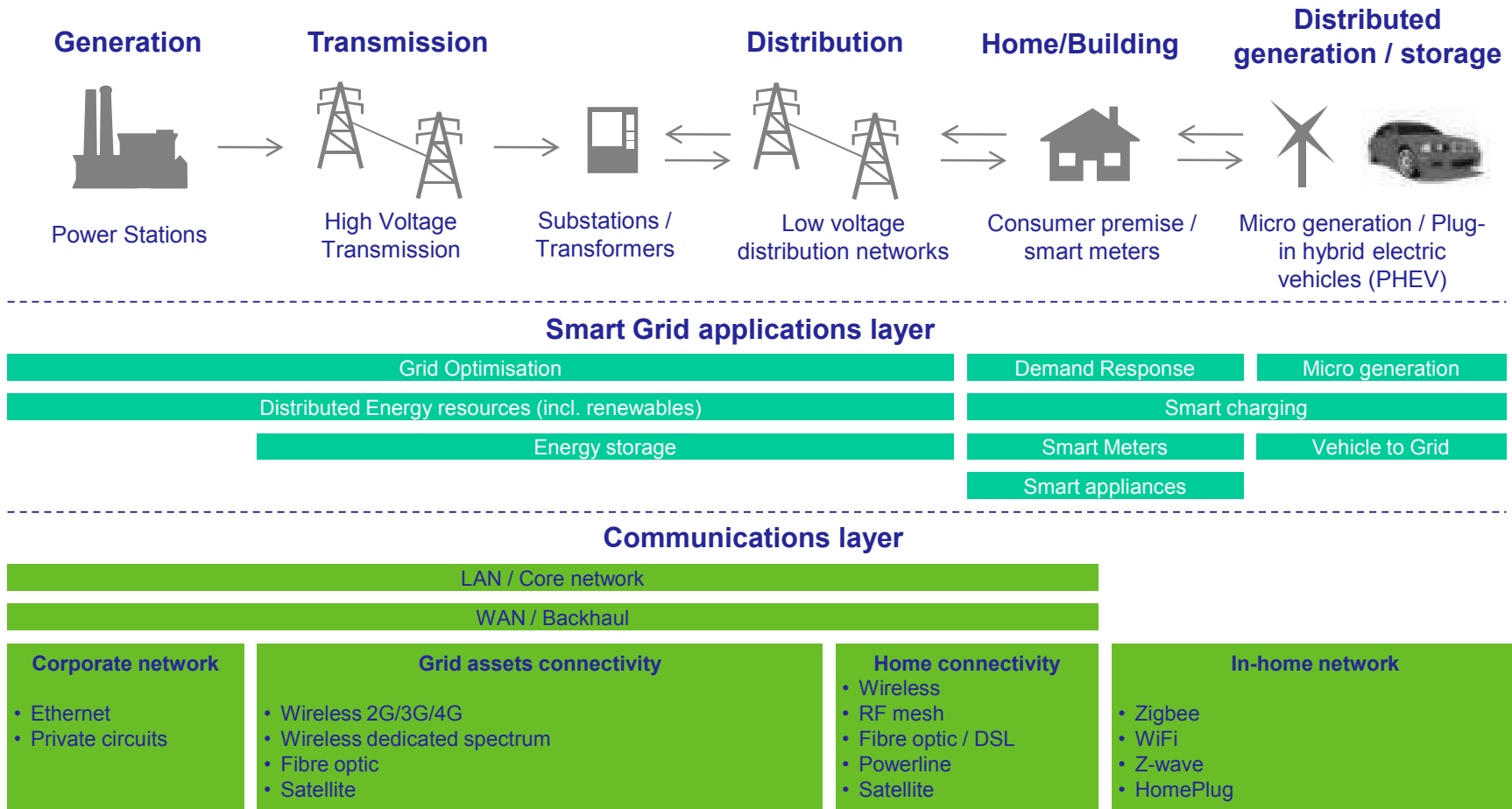
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# CLEVER - Output

- Formulation of a team of knowledge experts which could extract the necessary intellectual capital to inform both design, selection and optimisation of solutions
- Balance the input of knowledge (Use cases) with Network technology and operation, with anticipated utilisation for data management
- Starting point for CLEVER is Smart Meter leading to Smart Networks, Smart Grid, and ultimately Smart Energy

# Looking ahead ... SM / SG ...

## ...more connectivity, communications, complexity & data



BT Group



# Looking ahead - 5 Global Scenarios

- Nuclear Future
  - Electricity plentiful – at night!
  - Tariff-driven consumer behaviour with automated DEMS, *hard peak-suppression*.
- Volatile Oil Barrel
  - Cap peaks AND consumption! *Energy saving systems*.
- Cheaper Renewables
  - Grid instability problems – *better control* via SM granularity? (smart grids)
  - Optimise usage (*tariff-driven consumer behaviour*)
  - Energy management and storage – what is the impact?
- Mind the Gap
  - Looking at the forecasted *UK energy shortage* by 2015
- Major Network Disruption
  - *Service reinstatement times* vs. granularity of service control ....

## CLEVER – Objectives Achieved

1. Develop models of interactions between electricity (energy) producer and consumer in a flexible supply chain, enabled by Smart Metering.
2. Deliver a simulation platform to provide quantitative assessment of different architectures, incorporating different technology combinations, for distributed energy management algorithms.
3. Investigate, through modelling, the information infrastructure required to support EM business processes and applications, both inside and outside the home.

# CLEVER The way forward .....

- How can CLEVER be taken forward as an industry-wide reference project?

# Today's Presentations

- CLEVER Simulator Platform
  - Evaluating and De-risking Smart Metering Infrastructure rollout
- CLEVER Smart Metering Visual Demonstrator
  - Explaining Smart Metering
- CLEVER - Smart Metering and Energy Management in action
  - Physical Demonstration in BT Home 2
- Q&A Session – Feedback and how do we take CLEVER forward?

