



The Future of Energy Network Regulation

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Background

- UK RPI-X@20 review (Ofgem, 09a):
 - Customer Engagement
 - Sustainability
 - Scale and scope of innovation
- New Zealand Input Methodologies (Commerce Commission, 08):
 - Price-quality regulation for networks
- Focus on electricity and gas networks, but lessons for/from water, rail and telecoms

Plan

- What do we know about network regulation?
- Why is network regulation necessary?
- Themes in Future Regulation:
 - Negotiation
 - Tendering
 - Access Terms
 - Innovation
 - Unbundling and Ownership
- Role of Regulator/Governments

Lessons from network regulation?

- Incentive regulation +ve (Jamasb and Pollitt, 07)
- Unbundling +ve (Pollitt, 08a)
- Privatisation +ve (Jamasb et al., 04)
- Competition and regulation related (Green et al., 06)
- Quality can improve if incentivised (Ter-Martirosyan, 03)

- Easy to get it wrong, sometimes badly
 - (e.g. Netherlands, New Zealand) (Nillesen et al., 07; Bertram, 06).

- Rising investment requirements
- Growing concerns about fossil fuel supply
- Increasing intermittent renewables on system
- Rising fuel poverty
- Climate change policy tightening substantially
- Adaption to reality of climate change

Why regulate Networks?

- The extension of competitive segments
- The need for innovation (regulatory holidays)
- Franchise competition benchmark (Demsetz, 68)
- Networks and ‘elite power’ (Acemoglu and Robinson, 05)

Challenges to Design of Regulation

- Appropriate international variety
- Standards of competition
- Trust in competition / competition policy
- Poverty, rationality and choice
- Attitudes to security of supply

Themes in Future Regulation

- Five can clearly be identified:
- More use of negotiation
- Extension of auctions
- Attention to access terms
- Innovation in/across networks
- Role of unbundling and ownership

Negotiations



More use of Negotiation

- Core questions:
 - Is creation of buy side for network services possible?
 - What facilitates sensible/timely negotiation?
- Experience (e.g. Doucet and Littlechild, 06; Littlechild, 07; Littlechild et al., 08):
 - Successful in Canada, US and Argentina
 - Used in Airports in UK, New Zealand and Australia
 - Under consideration for water, electricity and gas in UK
- Transferability:
 - Clear in electricity and gas transmission
 - Market structure changes likely to be necessary in energy distribution

Auctions



Extension of Auctions

- Core questions:
 - Minimising build cost
 - Inducing new entry and innovation
- Experience (Littlechild and Skerk, 2008, Littlechild and Ponzano, 2008):
 - Extremely successful in Argentina transmission *and* sub-transmission (132kV lines and substations)
 - Widely used for transport systems and public services
- Transferability:
 - Already advanced proposals for Offshore transmission auctions in UK
 - Extension to high value distribution projects, e.g. £700m (34 projects) > £15m out of £6.6bn (Ofgem, 2009b)

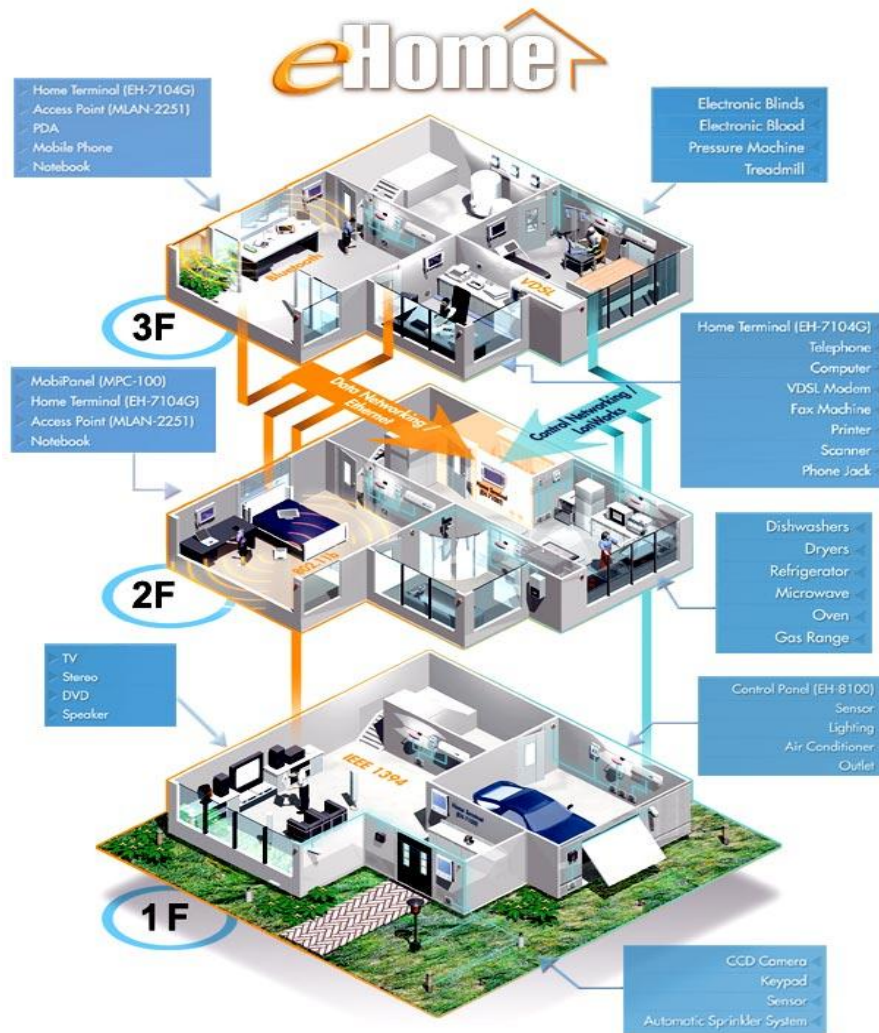
Access Terms



Attention to Access Terms

- Core questions (Jamassb et al., 05):
 - Encouraging efficient new connections
 - Elimination of barriers to experimentation
- Experience (Pollitt, 09):
 - Extremely successful in fixed line telecoms
 - Good experience emerging in water in Scotland
 - New unbundled products encourage innovation
- Transferability:
 - Local wire unbundling proposed for electricity distribution
 - Water service competition being extended

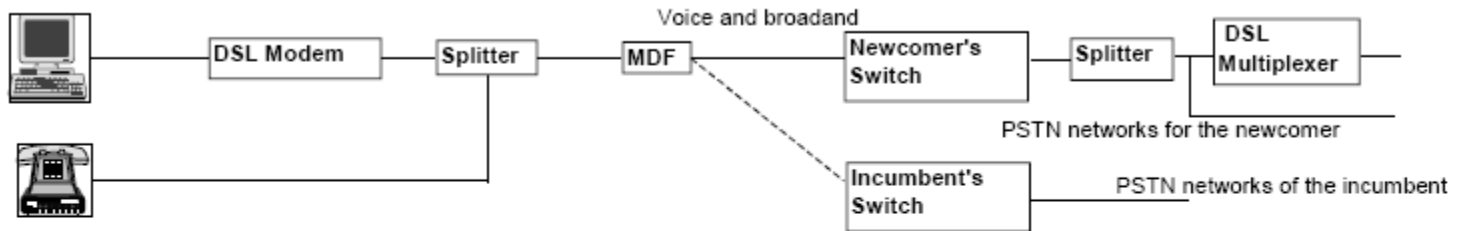
Innovation



Innovation in/across networks

- Core questions:
 - How to encourage innovation in use of networks?
 - How to incentivise incumbents to facilitate new business models?
- Experience (Hausman and Sidak, 07; Cave, 09; Jamasb and Pollitt, 09; Pollitt, 09):
 - Extremely successful in telecoms
 - Currently however innovation in other networks low
- Transferability:
 - More R&D and experimentation is required
 - Need to change business model e.g. from MWs to MBits

Unbundling



Role of Unbundling and Ownership

- Core questions:
 - What do new challenges mean for optimal degree of integration?
 - What is the role of public and cooperative ownership?
 - Are new entrants on the horizon?
- Experience (Pollitt, 2008a, 09):
 - Unbundling in electricity and telecoms successful
 - Ownership unbundling sometimes necessary
 - Public/co-operative ownership reduces need for regulation (e.g. in New Zealand)
- Transferability:
 - Energy distribution networks might require ownership unbundling
 - Municipal ownership of 'last mile' might allow reduction of regulation

Role of Independent Regulator

- This will have to evolve.
- Consider role in:
 - Negotiations
 - Auctions
 - Access Terms
 - Innovation
 - Unbundling

Role of Government

- Specifies High Level Outputs
- Subsidy and levy setter
- Responsible for security issues
- Standards setter and arbitrator

Conclusions

- Network regulation needs to evolve to meet new challenges at *reasonable cost* and with appropriate levels of *customer engagement*.
- Several big themes already present.
- Telecoms leading the way, with convergence in regulation possible.
- Extent of use of competition and reliance on market mechanisms will continue to be the distinguishing feature of national policies.

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