



# ***The Future of Network Regulation***

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*CRNI Annual Conference, Brussels  
20<sup>th</sup> November, 2009*

# Background

- UK RPI-X@20 review (Ofgem, 09):
  - 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).

# Issues facing (Energy) Networks

Pollitt, 08b

- 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?

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- 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

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

# Themes in Future Regulation

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- 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

# More use of Negotiations: Issues

- Ensuring appropriate representation
  - Representing future consumers and entrants
  - Who has right to speak for consumers?
- Role of regulator
  - Provider of information
  - What happens when parties fail to agree?
- Learning over time
  - Good lessons from NEB in Canada

# Auctions



# Extension of Auctions

- Core questions:
  - Minimising build cost
  - Inducing new entry and innovation
- Experience (Littlechild and Skerk, 2008):
  - Extremely successful in Argentina transmission
  - Widely used for transport systems and public services
- Transferability:
  - Already advanced proposals for Offshore transmission auctions in UK
  - Facilitation: large new network investments required

# Extension of Auctions: Issues

- Costs of tendering process:
  - This would seem to limit Demsetz model
  - However blocks of works can be tendered
- Incentives for risk management important:
  - Risks of project failure may be higher
  - Special purpose vehicles harder to regulate
- Numbers of bidders a concern:
  - Relies on quality of competition policy

# Access Terms



# Attention to Access Terms

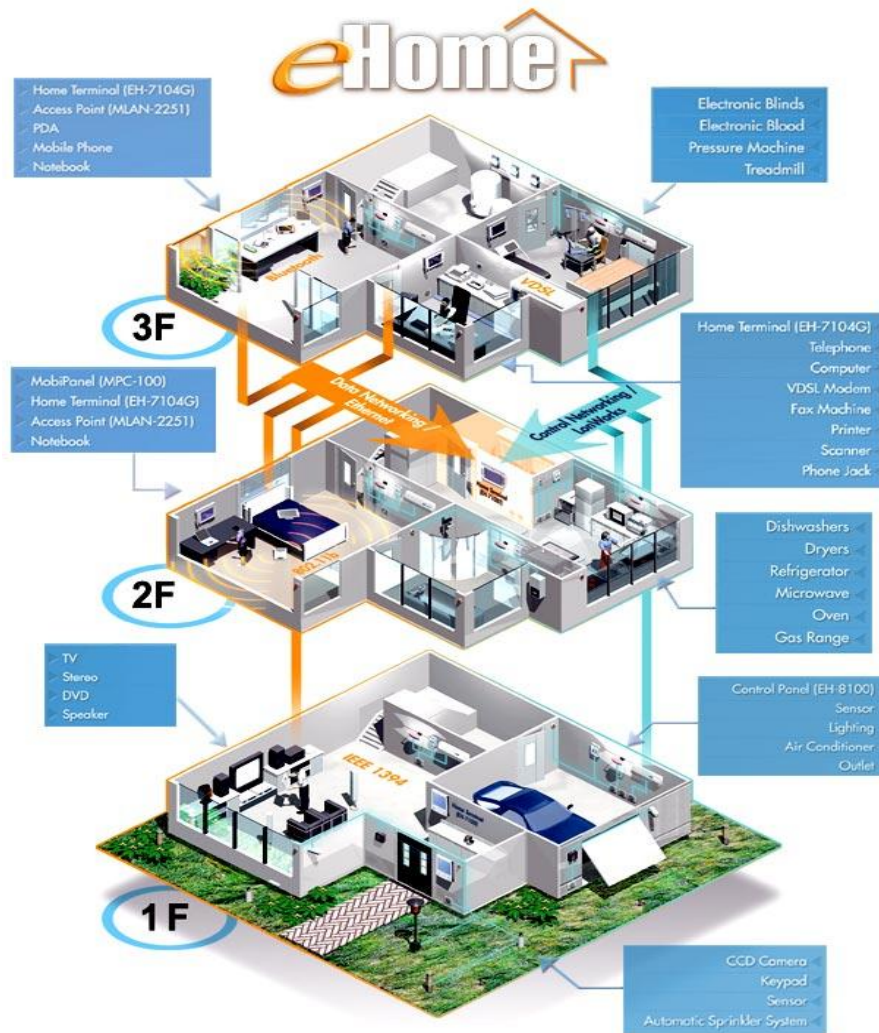
- Core questions (Jamassb et al., 05):
  - Encouraging efficient new connections
  - Elimination of barriers to experimentation
- Experience (Pollitt, 09):
  - Extremely successful in fixed line telecoms
  - Good experience emerging in water in Scotland
  - New unbundled products encourage innovation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



# Attention to Access Terms: Issues

- Simplicity vs efficiency:
  - Nodal pricing theoretically efficient but complicated
  - May increase risks for small entrants
  - Need to handle impact of lumpy investment
  - Elasticities/price effects too small?
- Price differentiation may be politically difficult
  - e.g. Transmission Access Review in the UK

# Innovation



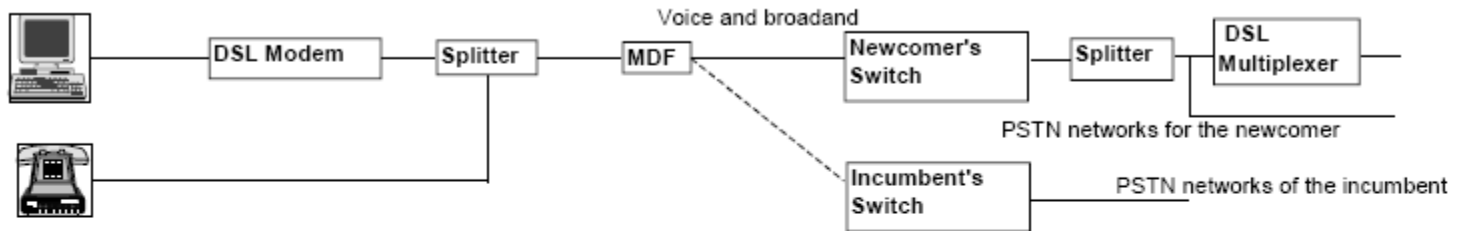
# Innovation in/across networks

- 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 MWhs to MBits

# Innovation in/across networks: Issues

- How to increase innovation?
  - e.g. Low Carbon Networks Fund
  - How much, who can do it?
- How to incentivise networks to co-operate?
  - Failure of RPZ scheme in UK
- Who owns customer information?
  - Regulation of smart meter information

# 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?
- 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 Unbundling and Ownership: Issues

- More unbundling could work?
  - ISO/ITO
  - DSO/IDO
  - Smart meter data ownership
  - Last mile separation e.g. via OpenWire
- More bundling might work?
  - Competitive Joint Venture model (Keisling, 09)
  - Municipals/ Cooperatives rights to buy wires
- To what extent should ownership market decide?

# Role of Independent Regulator

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



# Role of Independent Regulator

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- Agent of competition authority
  - Reliance on competition implies closer relationship
- More responsive to market requirements
  - 5 year price control review too inflexible
- Core independent analysis provider
  - More of real-time monitoring role

# Role of Government

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

# International Issues

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- Cross border investments raise seems issues e.g. international interconnectors
- Collaboration important e.g. on benchmarking companies
- Role of EU in forcing change e.g. via Directives and Competition Policy

# 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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