



Infrastructure Creation of Knowledge and Energy strategy Development

A WICKED approach to retail sector energy management

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<http://www.energy.ox.ac.uk/wicked/>

Overview

- Context and research questions
- Research approach
- Case studies
- Emerging conclusions

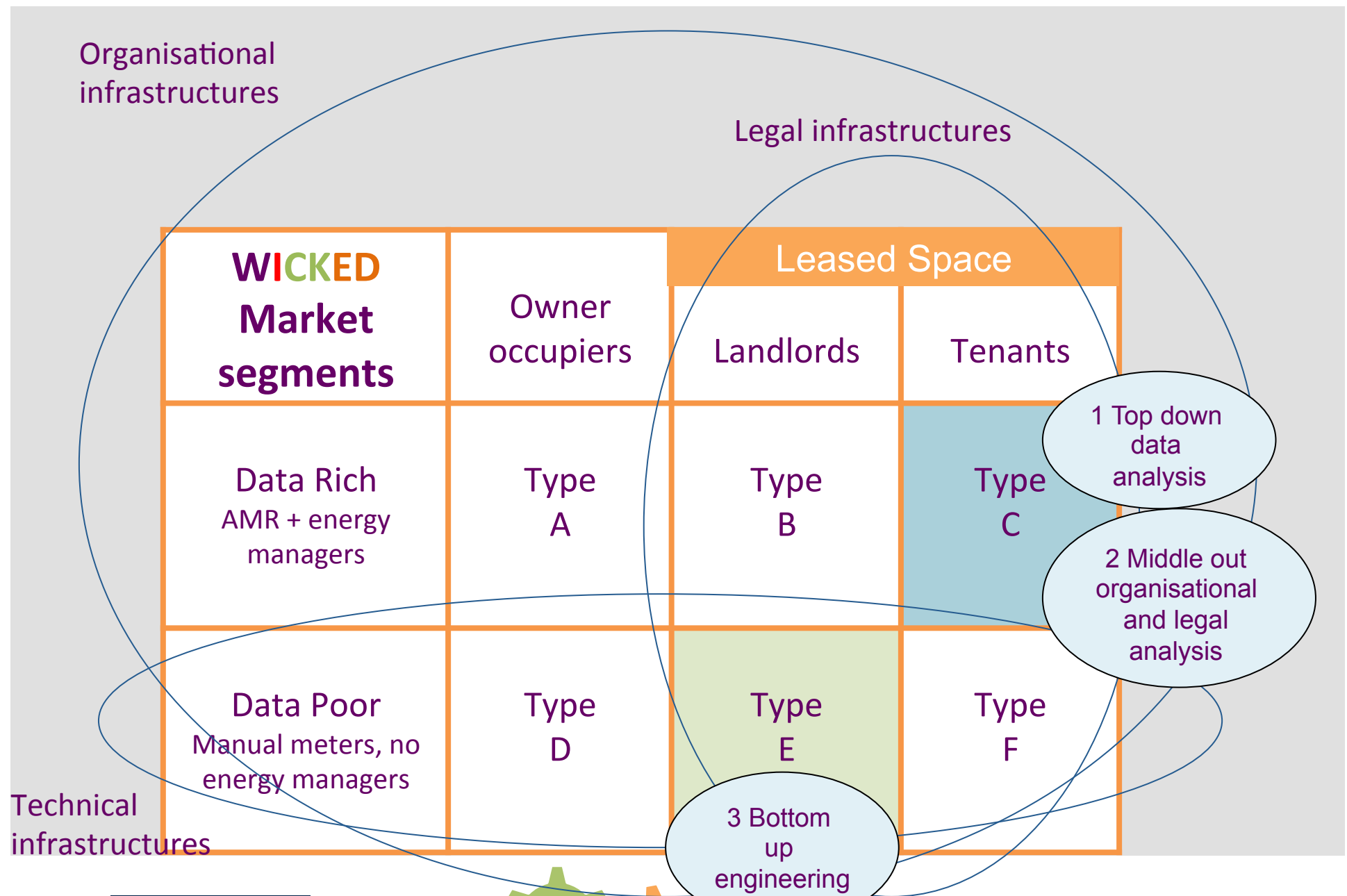
Context and research questions: Why 'WICKED'?

- Potential for savings + lack of research
- 'Working with Infrastructure, Creation of Knowledge and Energy strategy Development'
- Complexity = 'wicked' problem (Rittel and Webber 1973)

Issues and opportunities for more effective energy strategies and energy management practices in the retail sector

Research approach

- Partnership with industry
- Segmented socio-technical model
- Investigation of legal, technical and organisational infrastructures
- Multi-level, interdisciplinary approach
 - Top down data analysis
 - Middle out organisational and legal analysis
 - Bottom up new data generation through innovative metering



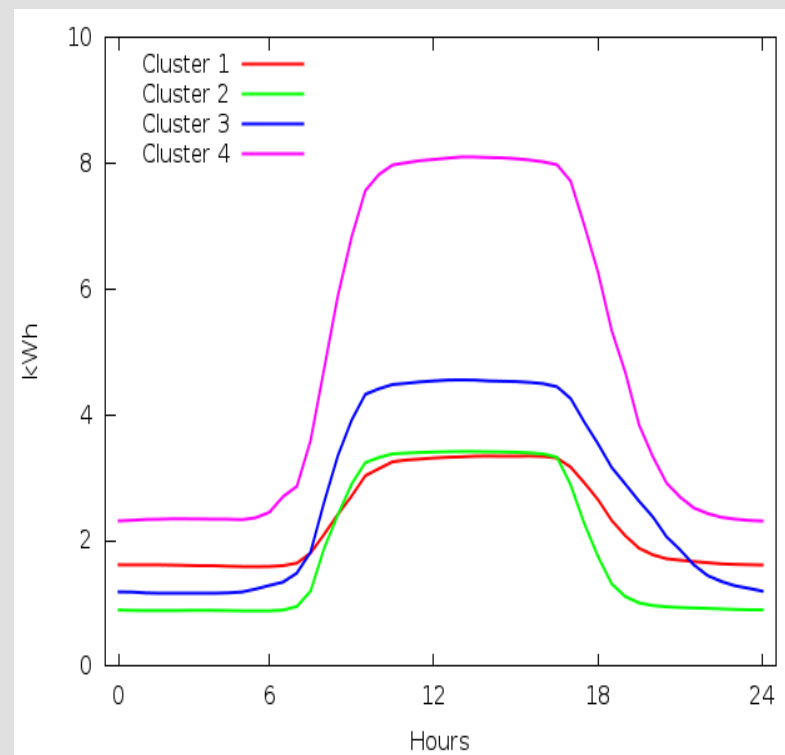
Case studies

- Top-down data analytics: a European electronics retailer
- Middle-out organisational and legal analysis: Marks and Spencer (mainly food and clothing)
- Bottom-up engineering: budget shopping centre

1. Top-down data analytics: European Electronics Retailer

- 30 min electricity readings from 642 shops over 18 mths
 - Limited meta-data
 - Clustering analysis
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- Need for more meta-data (physical and use characteristics)
 - Meter problems
 - Third party energy management providers
 - Need for follow up

Data only gets you so far



2. Middle-out organisational and legal analysis: Marks and Spencer

- The role of green leases/ green clauses in promoting cooperation on energy management
- Early days
- Other influences
- Framework for cooperation – trigger for dialogue
- Can support e.g. data sharing

Plan A

Because there
is no Plan B



There are opportunities for green clauses – as part of a wider energy management strategy – to play a role in more effective energy management practices

3. Bottom up: Budget Shopping Centre

- 91 retail units
- No energy manager
- Mainly manual meters, mix of monthly and quarterly billing

A 'data poor' organisation, with opportunities for bottom up metering solutions



Emerging conclusions

- One size does not fit all!
- Different solutions for data rich and data poor
- Data is not enough
- Green leases offer opportunities to support cooperation on energy management
- Organisational practices underpin everything - *socio-technical* innovation will drive more change across the sector than *technical* innovation on its own

Discussion

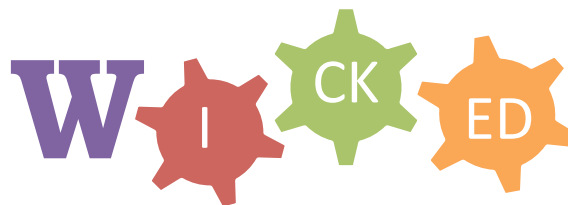
Thank you!

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Reference: Rittel, H.W.J. and Webber, M.M.(2008). “Dilemmas in a General Theory of Planning”. *Policy Sciences* 4 (1973), pp155-169



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