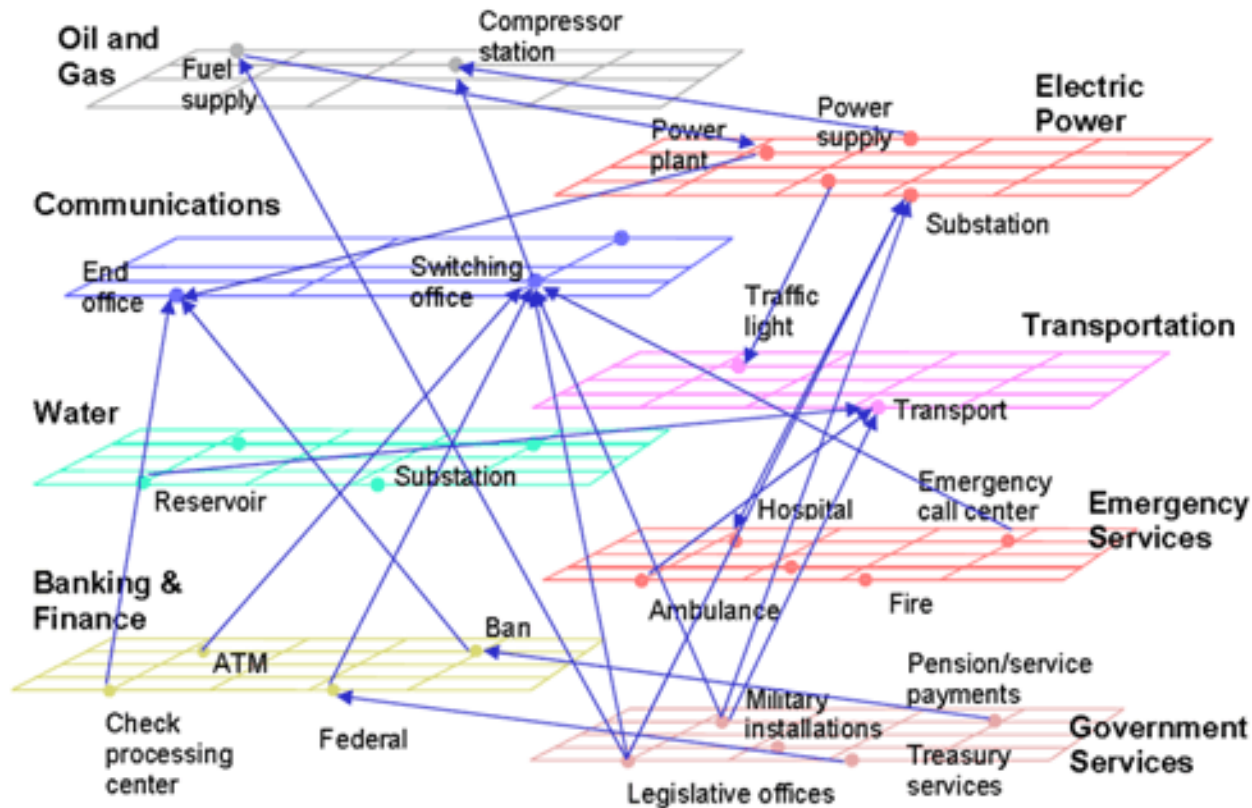


Infrastructure BUsiness models, valuation and  
Innovation for Local Delivery

# *A Systems Thinking Approach to the Development of Alternative Infrastructure Business Models*

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Valuing the Infrastructure of Cities, Regions and Nations  
Leeds, 26<sup>th</sup> and 27<sup>th</sup> April 2017



## Infrastructure Interdependencies

(National Association of Regulatory Commissioners, USA)



Systems thinking: habits, tools and concepts to develop an understanding of the interdependent structures of dynamic systems.

Waters foundation: Systems Thinking in Education.

<http://watersfoundation.org/systems-thinking/habits-of-a-systems-thinker/>

	The Business?	Advantageous combinations of variables?	Guiding principles for execution?
How is value created?			
Who is value created for?			
What is the source of competence?			
How are things positioned strategically?			
How is value captured?			
What are time/size/scope ambitions?			

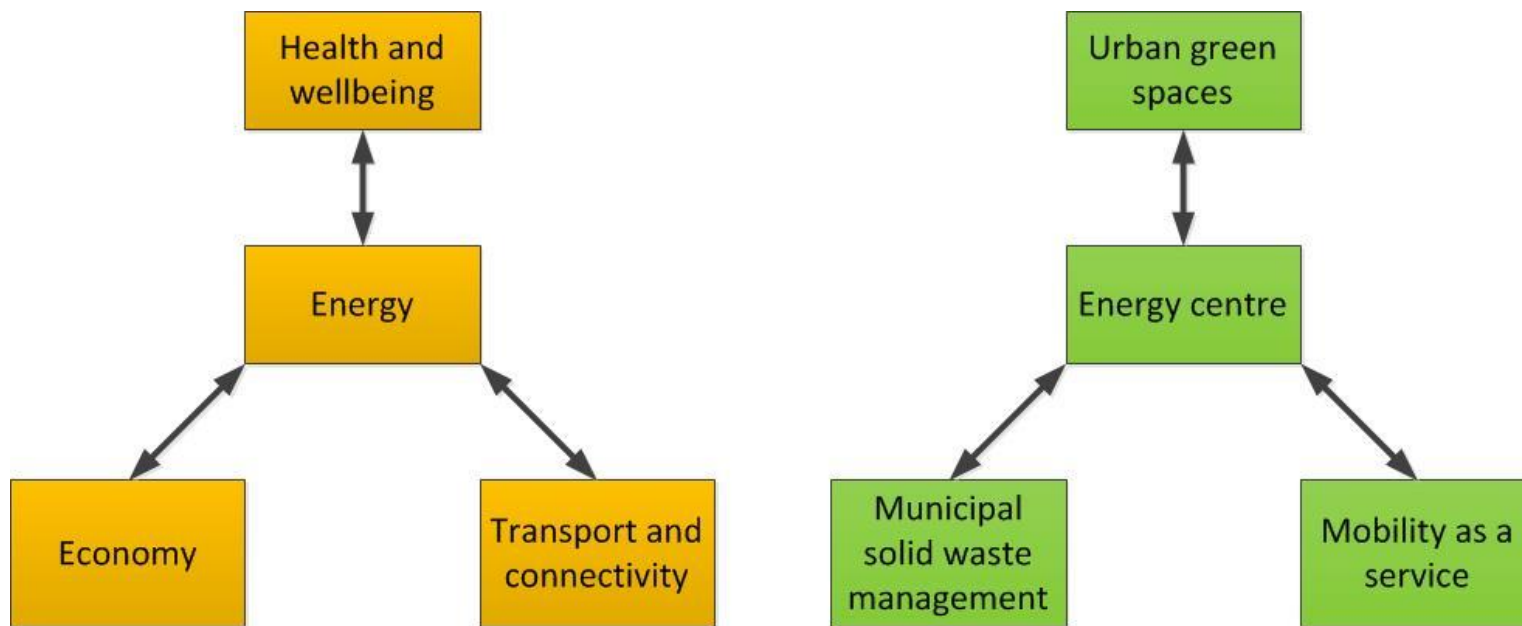
## The Business Model Development Process

(‘The entrepreneur’s business model: toward a unified perspective’, Morris et al, 2005)

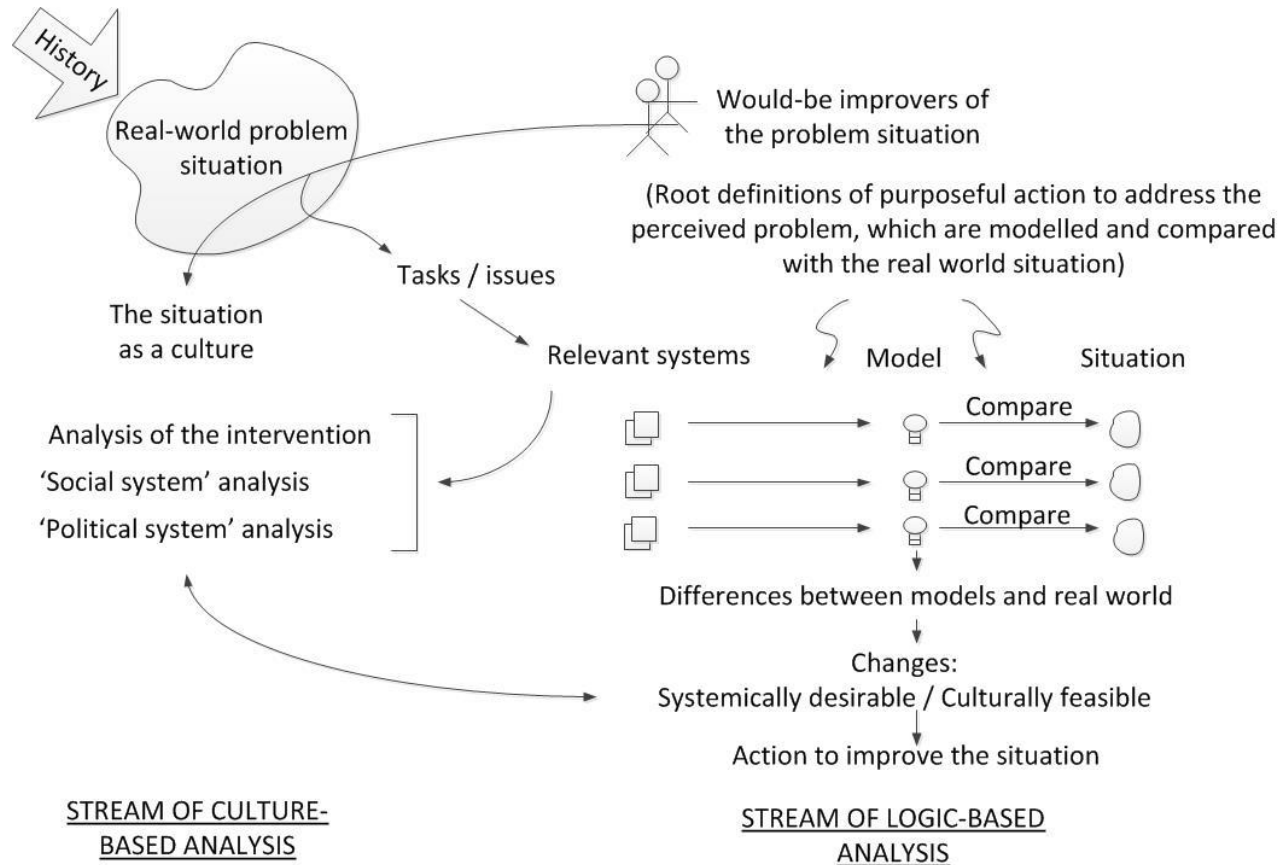
The City of Birmingham has ambitious plans to deliver carbon reductions, create a low carbon infrastructure and to modernise how it deals with waste. These priorities are captured in the Carbon Roadmap produced by the City's Green Commission which articulates the ambition via CO<sub>2</sub> Emissions Target and Carbon Budgets.



**EPSRC**  
Engineering and Physical Sciences  
Research Council



## Systems Thinking: Birmingham's Principal Perspectives Applied to the Tyseley Energy Centre (EPSRC-funded Urban Living Birmingham project)



## Defining the Business

(From: 'Soft Systems Methodology in Action: A 30-year Retrospective', Checkland, P., 1999. Wiley)

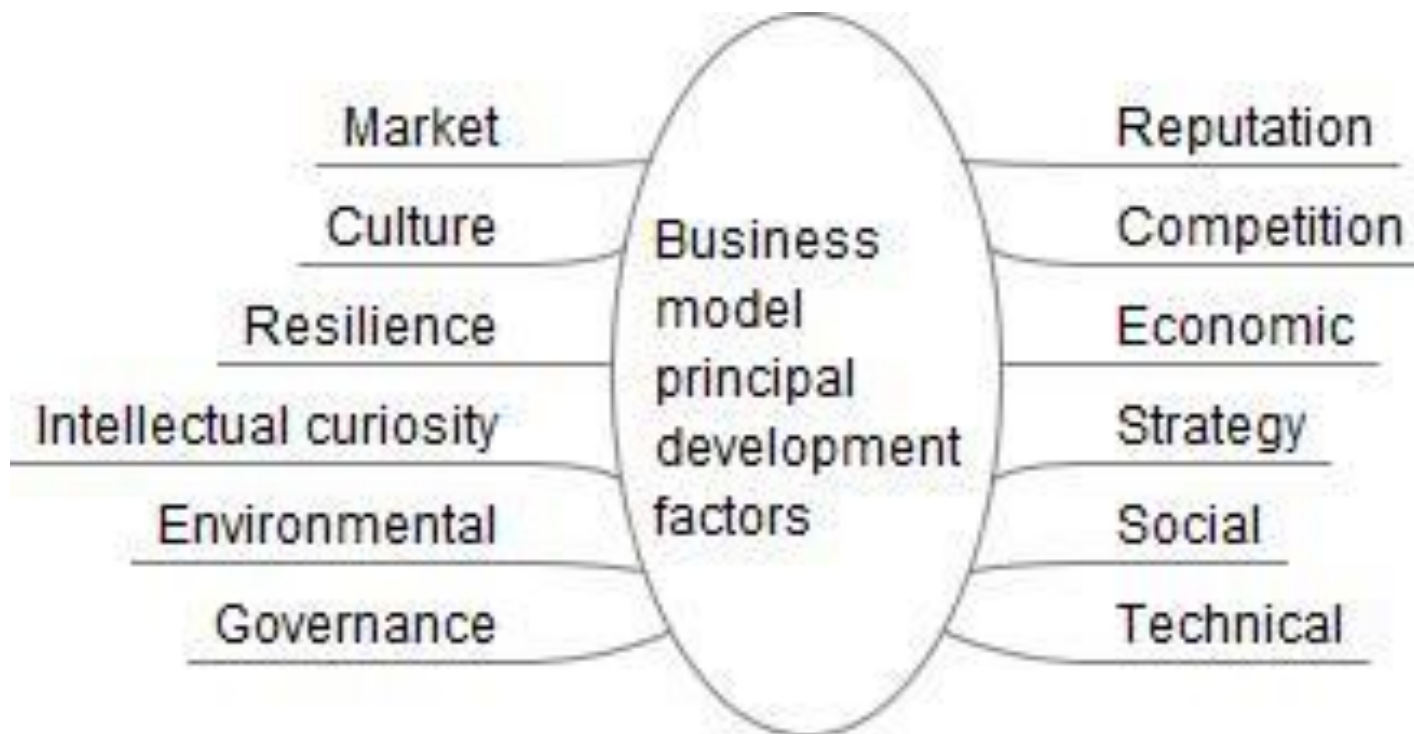


Complicated



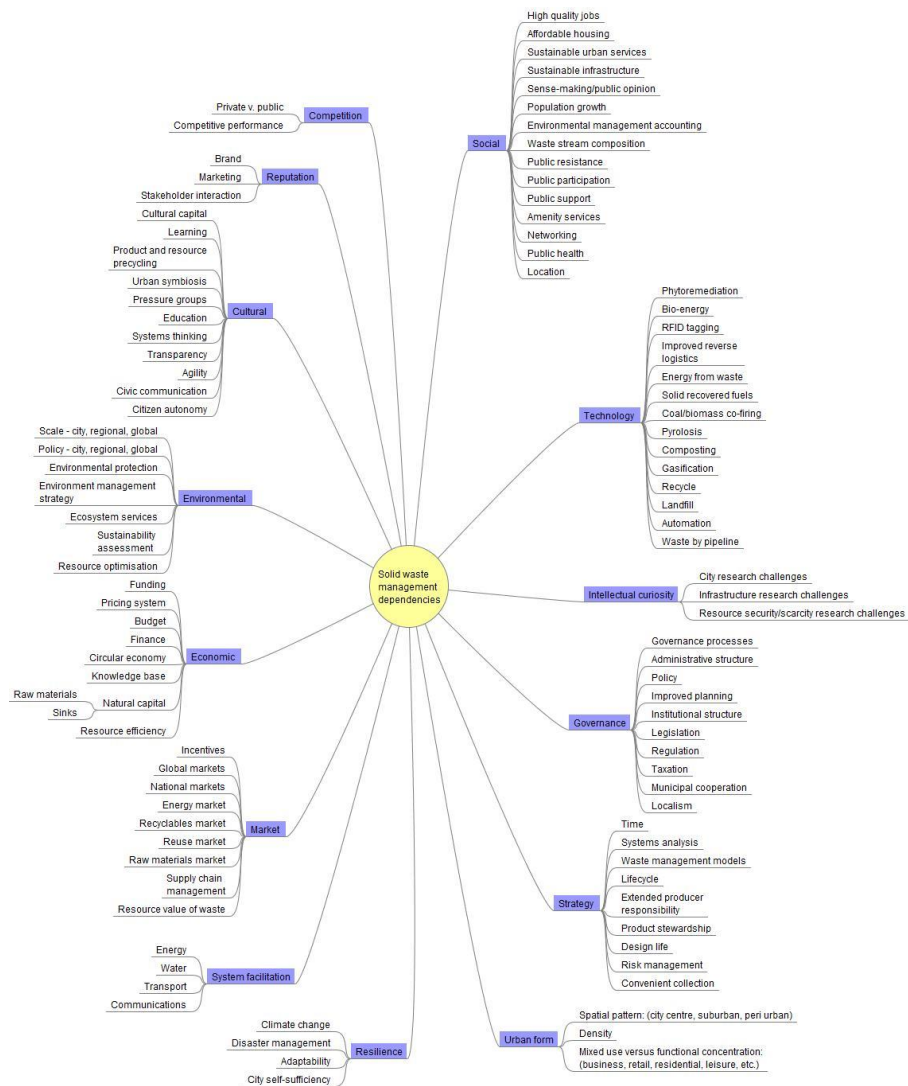
Complex

Socio-technical Infrastructure Systems



## Identifying Infrastructure Dependencies and Value Capture Opportunities

# Alternative Infrastructure Business Models



## Summary

- Alternative business models that maximise value capture
- Dependencies as potential sources of value
- Adopting habits of the systems thinker
- Generic business model building process
- Case study – Tyseley Energy Park
- Defining the business using soft systems methodology
- Modelling existing ‘complicated’ system
- Much more to be done on the ‘complex’ system aspects

Thank You