

Book review

Shaping Urban Infrastructures: Intermediaries and the Governance of Socio-technical Networks

Simon Guy, Simon Marvin, Will Medd and Timothy Moss, Earthscan, 2011, ISBN 978 1 84971 068 8, £65, 226 pp.

Shaping Urban Infrastructures, edited by Simon Guy, Simon Marvin, Will Medd and Timothy Moss, is an important and timely contribution to debates about infrastructure policy, management and governance. Infrastructure spending has been used as an economic stimulus measure in the US and is gaining attention in the UK. Without a clear understanding of the detailed dynamics of these socio-technical networks, such policies risk re-inscribing 20th century models of infrastructure that are inappropriate for the complex social, environmental and economic landscapes of the 21st century. *Shaping Urban Infrastructure* provides detailed analyses of specific infrastructure case studies, drawn together by a focus on the role of 'intermediaries', and a conceptual framing of their significance in the governance of infrastructure. Intermediaries are actors who work in-between others in infrastructure networks, often between consumers and producers of infrastructure services, and across scales. The book is structured in three parts: conceptual framework, intermediaries in network transitions and intermediaries in scalar transitions. The individual chapters are deftly edited so that the power of detailed case studies is brought to bear on wider policy and academic discussions about infrastructure.

The conceptual framework for the book is based on actor-network theory, transitions theory, theories of innovation and the concept of boundary organisations. The analysis acknowledges the importance of place in innovation and network dynamics, emphasising the role of cities as both actors and as contexts for infrastructural innovation. The book takes a pragmatic but robust approach to theory. It pays critical respect to the bodies of literature it draws upon yet remains focused on building a framework to enable coherent analysis of empirical data and the practical consequences of changes in infrastructure governance. The conceptual framing of the book and individual chapters allows deeper analysis of individual cases and stronger conclusions to be drawn beyond each specific context. The case studies address an appropriate range of infrastructure systems in transition, including energy, transport and water, and show the diversity of intermediary actors at work in these systems, such as professional consultancies, research organisations, small and medium enterprises, community groups and business networks.

The section on network transitions addresses intermediaries as both a consequence and a cause of change in urban infrastructure governance, particularly with regard to environmental initiatives. The chapter by Beveridge and Guy shows the role of an environmental consultancy as an intermediary between a small, light-industrial business, the EU urban wastewater directive, the local water company and the developer of a new technology for treating industrial wastewater. Their analysis shows the importance of intermediaries in facilitating innovation, but also demonstrates the practical constraints to innovation in small and medium enterprises, including the danger of overstating the promise of new technologies in well-established industries. Randles and Mander analyse the changing role of intermediaries, including the phenomenon of 'disintermediation', as people in the UK increasingly travel by air on

holidays, with associated increases in carbon emissions. Travel agents remain important intermediaries enabling some people to take affordable overseas holidays, yet the ability for people to book travel and flights directly using the internet has led to a significant 'ratcheting up' of travel and associated emissions. Other chapters in this section analyse the role of intermediaries in the formation of a market for renewable energy in Germany and the function of public-private 'centre for competence in water management' in Berlin following partial privatisation of the city's water infrastructure. Intermediaries are implicated in both intended and unintended changes in infrastructure networks, and can be seen to be reacting to and driving changes in governance arrangements.

The final section addresses the role of intermediaries in scalar transitions in infrastructures. It focuses on work that intermediaries do 'in-between' different scales of activity and governance in and around cities and regions. The case studies include managing water quality and resources in the North-East of England, the role of architects as intermediaries between building codes, clients and zero-carbon buildings, smart-metering of energy consumption and the variety of intermediaries at work in the long recovery period following in the Hull floods in 2007. Intermediaries are shown to perform important work in translating higher level strategic objectives into local actions, usually requiring adaptation to meet local conditions. Fischer and Guy show how building regulations encourage and constrain architectural innovation, while leading architects maintain professional autonomy by pushing their clients and buildings beyond current statutory obligations for energy efficiency. In the Hull flooding case study Whittle and Medd show that the performance of formal intermediaries such as loss adjusters can be inconsistent, with negative repercussions for vulnerable people, while informal intermediaries, such as local church groups, may show very high capacity for filling the gaps left between agencies involved in the recovery plans.

The conclusion of the book provides a very strong synthesis of the individual cases. Key findings are summarised in seven themes: intermediaries as a response to privatisation, fragmentation and the pressures for change; making visible the hidden work of intermediaries; transformative intermediaries; limits to intermediaries; the 'darker side' of intermediation; learning about socio-technical transformation and obduracy; and the importance of place. Each of these key findings has significant implications for policy. Simply recognising the important work of intermediaries is a first step, and the detailed analyses of exactly how intermediaries work, where they fail and what their limits are provides an important foundation for policy makers in understanding how infrastructure networks function and change.

This book is a useful resource for those involved in infrastructure policy, management and research. The chapters each stand alone as contributions to particular sectors, and the patterns and conclusions that are drawn across the diverse case studies provide very useful insights into how infrastructures are changing and how intermediaries are operating in this dynamic field. The book is strong in both specific detail and general trends, providing a very timely intervention as governments and cities look towards infrastructure investment as a source of economic, social and environmental rejuvenation.

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