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Book review: handbook on the economics of the internet

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Handbook on the Economics of the Internet, Johannes M Bauer and Michael Latzer (eds), Edward Elgar Publishing, 2016, 590 pages, ISBN 978 0 85793 984 5/ ISBN 978 0 85793 984 2.

Reviewed by Professor Robin Mansell, Department of Media and Communications, London School of Economics and Political Science

This handbook has the laudable aim of providing an original map of research in the Internet Economics field. It succeeds in this thanks to the editors' inclusion of theoretical perspectives ranging from the mainstream to institutional and evolutionary economic theory, complex adaptive systems theory, and critical political economy. In Part I-Prolog the editors provide a helpful introductory guide to the scope of the handbook, explaining that an inclusive approach is crucial because scale economies, interdependencies and information or data abundance are central features of Internet developments and these characteristics exceed the limiting assumptions of neoclassical economic theory.

In Part II-Theoretical Foundations, Knieps and Bauer examine the industrial organization of the Internet suggesting that even though the market is extremely dynamic, this does not mean that competition policy is unnecessary or that ex ante sector-specific regulation should be abandoned. This chapter provides an excellent introduction to the Internet's unique attributes. In the next chapter, Schultz and Whitt (ch. 3) set out reasons for favouring complex adaptive systems theory with its emphasis on emergence as a way to frame analysis of the Internet as a complex layered system. Schneider and Bauer (ch. 4) explain why network science is helpful in examining the Internet's system features and a dynamic that favours winner-take-all outcomes. Benkler (ch, 5) considers the conditions, including uncertainty and relative complexity, that make decentralized organizational models self-sustaining and sometimes superior to traditional models of production in the absence of exclusive ownership and formal contracts. Corrado and Bart van Ark (ch. 6) examine the imprecision of sources of growth accounting methods for estimating the impact of investment in information and communication technologies on economic growth and productivity. Handke, Stepan and Towse (ch. 7) discuss why the field of cultural economics has much to say about taste formation and motives for creative production. Mazepa and Mosco (ch. 8) explain key concepts and emphasize the value of examining the way power relations constitute Internet production, distribution and consumption in the political economy of communication tradition.

The nine chapters in Part III-Institutional Arrangements and Internet Architecture cover competition and antitrust policy in the presence of multi-sided platforms in Europe and the United States (ch. 9), the role of Internet standards, including an interesting history of TCP/IP (ch. 10), the economics of copyright (ch. 11), the economic analysis of privacy and incentives for data protection and surveillance (ch. 12), under or over investment in cybersecurity (ch. 13), and the role of digital platforms in contributing to organisational innovation and the generation of new technical knowledge (ch. 15). van Schewick's contribution examining the effect of changes in the Internet's layered architecture on innovation is of special interest as a result of its very clear explanation of the co-existence of two design principles under the single end-to-end Internet rubric. Clark, Lehr and Bauer's chapter (16) is also a must read for its explanation of Internet interconnection

arrangements, their key role in the structure, costs and use of services, and the issues for regulatory authorities.

In Part IV- Economics and Management of Applications and Services there are chapters on business strategy in the face of platformisation (ch. 17) and on online news organisations (ch. 21). Several chapters address the economics of online advertising, search market models and Google's ad auctions and their respective limitations, the economics of algorithmic selection, and the economics of big data (chs 25, 18,19, 20). The economics of online video entertainment, converged video services, and virtual and real money in the online gaming world are addressed in chapters 22, 23 and 24.

The two chapters in Part V-Past and Future Trajectories (Garcia ch. 26 and Noam ch. 27) make the important point that the Internet is associated with constantly emerging organizational forms. Choices – past, present and future – regarding the regulation of the public Internet have consequences. Noam envisages the emergence of a global oligopolistic market structure, led by entertainment content integrators or cloud providers and by cloud-based video media. He foresees divergent Internet standards and the emergence of a federated Internet.

Some of the contributors draw upon economic analysis to set out policy implications which is refreshing. For instance, it is argued that technological design principles are the key to the development of the Internet since market dynamics in complex emergent system are unpredictable and, therefore, so too are the results of market interventions by regulators. Elsewhere, it is suggested that a renegotiation among stakeholders, including governments, is needed to accommodate conflicting interests and this presumably means market intervention of some kind. It is argued that, notwithstanding network neutrality provisions, the Internet's architecture is becoming more opaque and controllable over time by sectional interests with the result that the current architectural design is not necessarily neutral in its impact. It is also argued that research on economics of copyright has not established the extent to which copyright law and its enforcement works as an economic incentive to authors and publishers in the creative industries; that European policy makers should resist an overly strict approach to vertical restraints on competition; that regulation to oversee Internet interconnection agreements is not warranted, at least, not at this time; and that there is no strong indication that the online video distribution of professionally produced programming will become a highly concentrated industry. Readers clearly will dispute certain conclusive statements in some chapters.

The research challenges in the Internet Economics field are deemed to be formidable in the face of a changing complex platform industry landscape. Many of the contributors call for stronger analytical frameworks and more robust empirical research. A strong theme is the need to benefit from synergies between complexity theory, network science, game theory, economic sociology and mainstream economics to develop greater insight into actor preferences and general principles as a guide to the stability of the Internet. In areas from online advertising to interconnection, standards, copyright, macroeconomic impacts and productivity,

cybersecurity and the relative contribution of peer production models to the economy, it is clear that more, and more reliable, data are needed to make sense of the dynamics of the Internet economy.

This handbook provides the reader with multiple insights into the strengths and weaknesses of the current state of economic theorizing and empirical research. The distinctive mix of approaches means that the volume should be accessible to readers who do not have training in the economics discipline and of interest to those who do. Many contributors make an effort to define concepts which will be very helpful for non-economist readers. Readers will gain insight into the limitations of the questions that are asked within different economic traditions, but importantly, also into what can be revealed by these theories and empirical methods. Media and communication scholars, not just those with an interest in media economics, will come away from engagement with this handbook with a good understanding of the assumptions underpinning the contributions economists are making to contemporary debate about the consequences of the continuous evolution of digitally mediated markets. On the question of whether or not competition policy and/or sector-specific regulation of aspects of the Internet-supported economy is needed to protect consumer and citizen interests is answered mainly by contributors with the verdict that 'much work remains to be done'.