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Edited by Wolter Lemstra and William H. Melody

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The Dynamics of Broadband Markets in Europe

The European Commission's Digital Agenda for Europe sets the targets for broadband development by 2020, yet current broadband market outcomes vary widely amongst the EU Member States and the objectives seem challenging for many. In this book, a group of in-country experts follows a framework of qualitative and quantitative analysis to capture patterns, commonalities and differences between 12 different European countries, in terms of infrastructure endowments, institutional arrangements, time of joining the EU, behavior of market actors, personal interventions of regulators, the role of municipalities, and the role perception of governments. By exploring how the past explains present broadband market outcomes, these longitudinal country case studies look to how improvements can be made for the future. As the first in-depth study of broadband developments in Europe, this book will be invaluable to policy-makers, regulators, academic researchers, advisors, and consultants working in the fields of telecommunications, broadband development, technology and innovation.

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Realizing the 2020 Digital
Agenda

Edited by

WOLTER LEMSTRA

WILLIAM H. MELODY



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To Jens C. Arnbak, A leader in telecom reform in Europe; colleague and friend to the editors and several authors in this book.

As a professor at the Delft University of Technology, the Netherlands, from 1986 he initiated research and training programs, and advised government bodies, industry and international agencies. He was the first Chair of OPTA, the independent Post and Telecom authority in the Netherlands, 1997-2005; the first Chair of the new European Telecommunication Regulators Group (ERG), as of 2002; and frequent adviser to the new national telecom regulators being appointed throughout Europe and attempting to find effective ways to implement EU telecom policies.

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Foreword

It has been recognized around the world that broadband telecommunication infrastructures will be necessary to support the information society objectives of nearly all countries. With each passing year broadband developments, and in particular the services and applications enabled by broadband, are linked more closely with economic growth and development. The European Union (EU), OECD, ITU and other international organizations have programmes that document progress, identify common barriers and best practices, and facilitate the development of broadband infrastructures.

A major focus is national government policies and regulations that play key roles in stimulating, directing or restricting broadband development within dynamic markets characterized by rapidly improving technologies and enhanced digital services. The research and analysis in this important book document and compare the responses to the broadband targets and objectives of the EU Digital Agenda 2020 in a widely diversified group of twelve EU countries.

Until recently, the most effective way for countries to foster telecommunication and information/communication technology (ICT) infrastructure development was to liberalize markets and promote competitive opportunities for new players through national regulatory authorities (NRAs). But for broadband infrastructure and digital economy development, it is being recognized that governments may need to play additional roles to stimulate the desired broadband investment, especially in relation to public services and achieving social goals.

Identifying the most effective roles that governments can play in this next stage of ICT-sector reform and digital-economy development is a

much more challenging task than highlighting the successful practices of the leaders. It relies on building an evidence base, with harmonized metrics across different countries, to understand the foundations for policy and regulation and tools that enable greater consumer empowerment. On the one hand, it will enable a more comprehensive analysis of government policy options and, on the other, a more detailed analysis of the specific, often unique conditions in different countries. Wealthy countries have different options than poor ones; countries with universal fixed network penetration have different options than those that are dependent on mobile; countries with strong and effective public institutions have different options than those with a strong tradition of private market solutions. In some countries, sector-specific regulation works well; in others, much less so.

One of the most important messages from the research in this book is that for the next stage of broadband infrastructure and digital-economy development, there is no single policy pathway to success. Each country's unique legacy may be the most important factor in determining the set of policies and practices necessary to meet the EU Digital Agenda objectives. A common model of policy reform, such as the liberalization model that has been widely applied with significant success in the past, is no longer sufficient. The most important determinants of success will be government policies and industry investment programs that build on each country's historical and cultural development and its current economic and governmental structure.

More generally, maximizing the benefits for economic and social development, enabled by broadband and an open Internet, requires the launch of a range of complementary policy

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initiatives. One is to ensure that broadband networks are widespread, of high quality, available at competitive prices and attract sufficient investment. There is a critical need to reform policy and regulation to take advantage of the new opportunities enabled by the convergence of communication networks, technologies and services, to ensure greater choices for consumers and to enable platforms for innovation to flourish. But policies to improve high-speed infrastructures – ‘fat pipes’ – need to operate hand in hand with policies that stimulate the creation of content, services and applications which will create a demand that can justify investing in ‘fat pipes’. The latter, together with the free flow of information, are essential to spur new business models and services across the economy from e-commerce to scientific collaboration to health and the environment.

Also essential are policies to build trust among citizens and businesses in the resilience and security of the infrastructure and the economic and social services that rely on it, as well as to strengthen user confidence that privacy and consumer rights are protected online. Finally, to be

successful, the above policies need to be supplemented by efforts to equip users with the necessary ICT skills and literacy to take full advantage of ICTs, broadband and the Internet.

This book provides a refreshing focus on the dynamic dimensions of broadband markets and the roles that a new set of market entrants and government actors already are playing in twelve countries across the EU in implementing its Digital Agenda 2020. Although the differences between the old and new EU countries may be the most obvious, even those among the countries currently leading the broadband league tables are striking. The many useful insights generated here will enrich the understanding of everyone with an interest in the next stage of broadband and digital economy development.

Jørgen Abild Andersen,
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Digital Economy Policy;
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Telecom Agency,
Denmark (1991–2011).*

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Preface

The genesis of this book can be traced back to January 2009 when the working paper ‘Do we need Policy 3.0 for Telecom 3.0?’ by Professor Eli Noam of Columbia University was the subject of a lively debate at a seminar organized by the Ministry of Economic Affairs of the Netherlands. Dr Paul de Bijl, Head of the Department of Competition & Regulation at CPB – the Dutch public think-tank for economic policy research – had taken the initiative to organize the seminar and I had the honour of being invited as discussant. The question being addressed was: ‘What are the policy implications of the transition to a new generation of telecommunications networks?’

Considering that from 2005 onward the Netherlands had featured in the Top-3 of the OECD broadband league tables, the market appeared to be performing very well. However, despite early trials, fibre to the home (FtH) deployments were lagging and municipalities had started to take the initiative, for instance in Amsterdam. Following other FtH initiatives by housing corporations, the copper cable-based duopoly was challenged by Reggefiber, a civil engineering company deploying open access fibre networks. In response, OPTA – the national regulatory authority (NRA) updated the wholesale access regulation, taking account of what was needed to create a viable business case for fibre deployments. In 2008 there followed a strategic move by KPN, the PSTN-incumbent, taking a 41 per cent share in Reggefiber. As a result, KPN was in a better position to counter the competitive pressure from CATV providers UPC and Ziggo who were providing ‘fibre power’ on their HFC-networks, with data rates up to 120 Mbit/s. Hence, the conclusion of my presentation was that, in the case of the Netherlands, the broadband market was sufficiently dynamic that Telecom 3.0 would not need Policy 3.0 but only

an extension of Policy 2.0. On Professor Noam’s second question: ‘Have we come full circle?..Is Telecom 3.0 merely a high-speed version of the original system Telecom 1.0, extended across the borders of countries and media, and supplemented by oligopoly, at best?’ I responded with a ‘maybe’.

Triggered by the interests of the seminar participants and stimulated by their valuable feedback, a paper was proposed and accepted for the Telecommunication Policy Research Conference (TPRC) held in September 2009 at George Mason University, Arlington, Virginia, USA. Following positive feedback at TPRC, the question was raised: ‘How unique is the case of the Netherlands and what lessons can be learned?’ Subsequent discussions with colleagues and friends, including Dr Richard Cawley, official at the European Commission (formerly with the Directorate-General – Information Society and currently with the Directorate-General – Research and Innovation), led to the belief that obtaining deeper insights into the dynamics of broadband markets across Europe would be a very meaningful research project and its outcome considered as highly valuable for the process of achieving the Digital Agenda targets. This led to the research-annex-book project on the dynamics of broadband markets in Europe. From the initial case study on the Netherlands, it became clear that obtaining these deep insights would require local experts to contribute to the project.

This book is the tangible outcome of a long period of collaboration involving experts at universities and research institutes in twelve countries across Europe and at the European Commission. I am deeply grateful for their time and efforts to make this research project a success. This also applies to the contributions by co-editor Professor William H. Melody at Aalborg University and the editorial support by Vic Hayes at the Delft

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University of Technology (TU Delft). Moreover, I would like to acknowledge the support provided by the Delft University of Technology's Department of Technology, Policy and Management and Aalborg University's Center for Communications, Media and Information technologies.

Our collective aim has been to provide an accurate account of broadband market dynamics in

Europe; where we have fallen short of this objective, the responsibility remains with the authors. The usual disclaimers also apply.

Wolter Lemstra,
Delft/Copenhagen, August 2014.