Telecommunications Regulation & Deregulation in Industrialized Democracies

Marcellus S. Snow

TELECOMMUNICATIONS REGULATION AND DEREGULATION IN INDUSTRIALIZED DEMOCRACIES

by:

Marcellus S. SNOW University of Hawaii at Manoa



Copyright © 1986, by Longman Inc., 1560 Broadway, New York, N.Y. 10036

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner.

ISBN: 0 444 87926 9

Published under special arrangement with Longman Inc. by:
ELSEVIER SCIENCE PUBLISHERS B.V.
P.O. Box 1991
1000 BZ Amsterdam
The Netherlands



This edition only for sale outside the U.S.A. and Canada.

About the Contributors

Alan Baughcum holds a Ph.D. in economics from the University of North Carolina. He is at present Manager of Telecommunications for R. W. Beck and Associates, Engineers and Consultants, in Washington, D.C. Before joining that firm, he was affiliated with Charles River Associates of Boston as Director of Telecommunications Research. He has also had teaching positions at the University of North Carolina and at North Carolina State, and worked for 3 years as an economist for the U.S. Department of Justice. Dr. Baughcum is co-author of *The Economics of Competition in the Telecommunications Industry*, which deals with economic issues affecting telecommunications in the United States. He has contributed to numerous professional publications, including *Public Utilities Fortnightly* and *Antitrust Law and Economics Review*. Among other professional organizations, he belongs to the American Economic Association, the Southern Economic Association, and the Society of Government Economists.

Youichi Ito is a communications scientist with a B.A. in economics from Keio University. He pursued a doctoral course with a communications science major at the same institution. Study in the United States brought him a B.S. from Boston University's School of Public Communication and an M.A. from the Fletcher School of Law and Diplomacy at Tufts University. Dr. Ito is at present Associate Professor at the Institute for Communications Research for Keio University; he also serves as Vice Director of that institute. Previous positions have been as a Fellow at the East-West Center, Honolulu, and as an adjunct lecturer at Waseda and Tokai universities. He has researched and written widely on communications policy in Japan and Western countries, including the "information society" school in Japan. His publications have appeared in Keio Communication Review, the Mass Communication Review Yearbook, and as articles and book chapters in both English- and Japanese-language publications in Japan. He is a member of the International Communication Association, the Japan Society for Studies in Journalism and Mass Communication, and the Japanese Society of International Politics. He has served as a member of numerous government and professional planning and advisory committees, and is chief editor of *Keio Communication Review*.

Charles Jonscher holds a first class honors degree in engineering from Cambridge University and both an M.A. and a Ph.D. in economics from Harvard University. At present he is lecturer and Associate Director in the Research Program on Communications Policy at Massachusetts Institute of Technology, and a Director of CSP International, an international consulting firm specializing in economic and business studies in the communications sector. He has previously been executive engineer with the British Post Office, a lecturer and tutor in economics at Harvard, and a tutor in engineering at Cambridge. He has published and conducted research on economic and information policy aspects of communication. His articles have appeared in edited collections as well as in publications such as Information Economics and Policy and in workshop proceedings volumes. He has received the Kennedy Fellowship for graduate studies at Harvard and the Senior Scholarship at Trinity College, Cambridge, He is currently a member of the editorial board of Information Economics and Policy.

Gordon E. Kaiser holds a B.A. in economics from the University of Toronto, an M.A. in economics from Queen's University, and an LL.B. from Oueen's University. He is currently a partner with Gowling & Henderson, Barristers & Solicitors, in Toronto, having previously been affiliated with the firm's Ottawa office. He is a Special Lecturer in law at both Oueen's University and the University of Toronto, and was formerly a partner with the law firm of Lang, Michener, Cranston, Farquharson & Wright in Toronto. He has published widely on legal aspects of regulation and antitrust relating to telecommunications. His articles have appeared in the University of Ottawa Law Journal, Canadian Business Law Journal, Queen's Law Journal, and as chapters in compendium volumes and conference proceedings. He is a member of numerous law and economic professional organizations, including the Canadian Bar Association, the American Association of Trial Lawyers, the American Economic Association, and the International Bar Association. He has appeared before numerous regulatory boards in Canada, including the National Energy Board, the Ontario Energy Board, the Canadian Radio-Television and Telecommunications Commission, and the public utilities commissions of several provinces.

Don M. Lamberton is Professor and former Chairman at the Department of Economics at the University of Queensland, where he is currently affiliated with the Information Economics Unit. He holds a B.Ec. from the University of Sydney and a D.Phil. in economics from Oxford University.

Previous teaching appointments have been at Case Western Reserve University and at the University of New South Wales. He has had visiting appointments at Stanford University, the University of Pittsburgh, Oxford University, the East-West Center's Communication Institute, and the Technical Change Centre in London, Professor Lamberton has published widely on economic aspects of information and technological change. He is the author of The Information Revolution and co-author of Communication and Economic Development. His articles have appeared in The Information Society, Annual Review of Information Science and Technology, and in numerous collected volumes and conference proceedings. He is Chairman of the Pacific Science Association Scientific Committee for Economics, a member of the International Social Sciences Council. and several Australian government committees. He has consulted for many clients, including the Organisation for Economic Cooperation and Development, Telecom Australia, Stanford Research Institute, and the Public Service Satellite Consortium.

Karl-Heinz Neumann holds a doctorate in economics from the University of Bonn, where he served as Wissenschaftlicher Assistent while earning his degree. He is currently Director of the Deutsche Bundespost's research center for economic aspects of communications, the Wissenschaftliches Institut für Telekommunikationsdienste der Deutschen Bundespost. This newly created institute has published a number of studies regarding telecommunications regulatory trends in West Germany and elsewhere. Two lengthy studies, of deregulation in Great Britain and of the AT&T divestiture in the United States, have also appeared. Dr. Neumann is coauthor of "Welfare Analysis of Telecommunications Tariffs in Germany," a comparison of the present structure and a hypothetical regime of Ramsey (inverse elasticity) prices in West German telecommunications tariffs. He is also author of the recently published general treatment, Gebührenpolitik im Telekommunikationsbereich (Tariff policy in the telecommunications sector). He has participated widely in conferences devoted to economic aspects of telecommunications regulation, has published in professional journals, and belongs to several professional organizations.

Eli M. Noam holds an LL.B. from Harvard University as well as a Ph.D. in economics from that institution. At present he serves as Associate Professor and Director of the Research Program on Telecommunications and Information Policy at the Graduate School of Business of Columbia University. Previously he was Visiting Assistant Professor at the Woodrow Wilson School of Princeton University. In his current capacity he has organized numerous symposia and research efforts that have concentrated on business and economic aspects of telecommunications policy in the United States and particularly in Western Europe. Much of this work has been funded by grants from organizations such as the Friedrich Naumann

Foundation, France Telecom, Home Box Office, Merril Lynch, and the National Science Foundation. He has published numerous articles and has edited *Telecommunications Regulation Today and Tomorrow*, which was selected as a "Book of the Month" by *Communications Booknotes*. He is a member of the American Economic Association and other professional organizations.

Roger G. Noll holds M.A. and Ph.D. degrees in economics from Harvard University. Recently he became Professor of Economics at Stanford University. Previously he was at California Institute of Technology, where he served as Institute Professor of Social Sciences and Chairman of the Division of the Humanities and Social Sciences. He has also been Professor at Stanford's Graduate School of Business and a Senior Fellow and Co-Director at the Brookings Institution. He has researched and published widely in regulatory policy, cable television, political foundations of economic policy, and telecommunications. He is co-author of The Political Economy of Deregulation, co-editor of Regulatory Policy and the Social Sciences, and co-author of Economic Aspects of Television Regulation. He has published widely in the American Economic Review and other scholarly journals. He is on the board of editors of the Journal of Economic Literature and Information Economics and Policy. He has been a member and chairman of numerous advisory panels of the federal government, including those of the National Science Foundation, NASA, and the Office of Technology Assessment. He has been a Fellow of the Guggenheim Foundation and of the Center for Advanced Study in the Behavioral Sciences. He has consulted for numerous governmental and private organizations, including CBS, the RAND Corporation, the Federal Communications Commission, the Environmental Protection Agency, and the Aspen Institute.

Marcellus S. Snow is Associate Professor of Economics at the University of Hawaii at Manoa. He has an M.S. from Massachusetts Institute of Technology; an M.A. (in international relations) from the School of Advanced International Studies of Johns Hopkins University; and a Ph.D. (in economics) from the University of California at Berkeley. He is author of International Commercial Satellite Communications; co-editor of Economic and Policy Problems in Satellite Communications; and has published in numerous scholarly journals, including the Bell Journal of Economics, Journal of Communication, Journal of Information Science, and Economic Modelling. His areas of interest include regulatory theory and policy, satellite communications, and econometric testing methodology. For 2 years he was a financial and political analyst for the Communications Satellite Corporation in Washington, D.C., and Geneva, Switzerland. Since joining the faculty at Hawaii, he has been awarded a Fulbright research professorship at the Universität Bonn and spent a summer as a Visiting Scholar at Stanford University. He has consulted for numerous firms and

government agencies, including NASA, INTELSAT, the U.S. Department of Commerce, and ITT. He has been awarded research grants by the Institute for Public Utilities and the National Science Foundation. He is a member of the American Economic Association, the Econometric Society, the Pacific Telecommunications Council, the Society for Satellite Professionals, and other professional organizations.

Jean-Paul Voge holds a baccalaureate degree in mathematics and philosophy and has engineering degrees from the Ecole Polytechnique and the Ecole Nationale Supérieure des Télécommunications. At present he is Deputy Director and Special Adviser in the Direction des Affaires Industrielles et Internationales of the French Ministry of Posts and Telecommunications. He serves as Chairman of the research institute IDATE in Montpellier and as Professor at various universities. Previously he represented the French government in INTELSAT. He has written widely on a variety of topics, including information and economic aspects of organizational complexity, information and business cycles, space telecommunications, and the role of communications in society. He has published in journals such as Information Economics and Policy, Les Cahiers Français, Technological Forecasting and Social Change, and Revue Française des Télécommunications. He has served on numerous national and international professional bodies, including as President of the International Union of Radio Science: as Chairman of the French Section of the Institute of Electrical and Electronic Engineers (IEEE); and as a member of the board of the Ecole Polytechnique. Among his many honorary positions are those as a Commander of the Legion of Honor; a Fellow of the Institution of Electrical Engineers (IEE); and an Officer of the Order of Leopold (Belgium). He is listed in Who's Who for France, Europe, and the world.

Carl Christian von Weizsäcker has attended the Universities of Zürich, Göttingen, Hamburg, and Freiburg, and received his doctorate from the University of Basel. He has been on the economics faculties of the Universities of Heidelberg, Bielefeld, and Bonn. At the latter institution he was head of the Economics Department of the Institute for Social and Economic Sciences, Since 1982, he has been Professor of Economics at the University of Bern. His research interests are in the areas of capital theory and theory of competition as applied to the telecommunications sector. He is the author of Steady State Capital Theory, Zur ökonomischen Theorie des technischen Fortschritts, and Barriers to Entry; and co-author of Die Rolle des Wettbewerbs im Fernmeldebereich. In addition, he has published in numerous scholarly journals, including the Bell Journal of Economics, Information Economics and Policy, Journal of Economic Theory, Kyklos, Zeitschrift für die gesamte Staatswissenschaft, and Zeitschrift für Nationalökonomie. He is a Fellow of the Econometric Society as well as a member of the American Academy of Arts and Sciences.

Acknowledgments

I wish to thank a number of individuals and institutions who helped bring this book to fruition and who stimulated my efforts in carrying out the research, grant proposal, funding, and workshop on which it is based.

The idea for comparative research on telecommunications regulation formed the basis of my sabbatical leave during 1980–1981 at the Universität Bonn, where I was a Fulbright research professor. I am indebted to my academic host during that year, Professor Carl Christian von Weizsäcker, who at the time was head of the Wirtschaftspolitische Abteilung of the Institut für Gesellschafts- und Wirtschaftswissenschaften at Bonn and is now at the Universität Bern. Because of rewarding discussions at Bonn and elsewhere in Germany with him and with other colleagues—Jörg Finsinger, Hans Mathias Keplinger, Günter Knieps, Jürgen Müller, Karl-Heinz Neumann and Ingo Vogelsang—I became so interested in telecommunications policy in West Germany that my original plans for crosscountry research were postponed.

After returning to the University of Hawaii and continuing my research and writing on West Germany for about a year, I again felt ready to examine telecommunications regulation in a number of other countries. With the patient help of Roger Noll of Stanford University (whose valuable suggestions on editing this volume I also very much appreciate), I explored the possibility of a research workshop funded by the U.S. National Science Foundation that would bring economists and others together from several industrialized countries to present papers on regulatory topics in telecommunications, broadcasting, and information and draw up an agenda for future research.

The exacting process of composing a grant proposal to the NSF was aided by a stay at Stanford University during the summer of 1983. As a Visiting Scholar at the Hoover Institution, I had access to individuals there and throughout the Stanford campus who were of great help in focusing and refining my ideas. I wish especially to thank Dennis Bark and Tom Moore of the Hoover Institution and James Rosse of the Department of Economics for their valuable comments and perspectives.

Logistics for the workshop—held at the NSF's behest in Washington, D.C.—were facilitated by the kind offer of meeting rooms at the recently established Washington Center of the Annenberg School of Communications. I am grateful to the Center's director, Maurice Mitchell, and deputy director, Barry Cole, for their collegial hospitality at this handsome new facility. During the workshop itself, held April 30–May 2, 1984, Diana Murrell provided expert and efficient help as the workshop assistant and rapporteur and has the thanks of all the participants.

My deepest appreciation is reserved for the conference participants and contributors to this book. It is they who took an idea on paper and brought it to life; the contents of this volume testify to their success in doing so. Thank you, collectively and individually, for your written contributions and your stimulating discussions at the workshop.

My home institution, the University of Hawaii at Manoa, generously provided me with a 2-year, half-time appointment as an Associate Researcher with the Social Science Research Institute from 1982 to 1984 that gave me the time to perfect my grant proposal, organize and conduct the workshop, and prepare this book. I would like to thank Donald Topping, the SSRI director; also Sady Sakai of SSRI was extremely helpful in aiding me with the fiscal and administrative details of the grant. Freda Hellinger and Karen Ah Mai provided able assistance in manuscript preparation. My colleague Moheb Ghali, director of the Office of Research Administration, stood by me on the university's behalf with the grant proposal.

Many other colleagues, at the University of Hawaii and elsewhere, have provided advice, insights, suggestions, and critiques over the years and have honed and greatly improved my thinking and writing, both regarding this project and my research generally. For this encouragement I am indebted to Norman Abramson, Richard Barber, Henry Breitrose, George Codding, Wilson Dizard, Herb Dordick, Oswald Ganley, Heather Hudson, Jane Hurd, Meheroo Jussawalla, Kas Kalba, Sumner La Croix, Kenneth Leeson, Harvey Levin, Joseph Pelton, the late Ithiel Pool, Delbert Smith, Christopher Sterling, Nozomu Takasaki, Majid Tehranian, Jeremy Tunstall, and many others.

For their decision to publish this volume in the Annenberg/Longman Communication Books series, as well as their thoughtful suggestions for its improvement and technical assistance in the editing process, I wish to thank George Gerbner and Marsha Siefert of the Annenberg School of Communications at the University of Pennsylvania, who co-edit the series; and Gordon T. R. Anderson and Ronni Strell, editors at Longman Inc.

Finally, I wish to thank the Division of Information Science and Technology and the Division of Policy Research and Analysis of the National Science Foundation for funding Grant No. IST-8320473, on which the research workshop was based. Charles Brownstein of the NSF began providing generous advice and suggestions well before the grant proposal

was submitted and followed through with useful guidance after the grant had been approved. I appreciate his help at all stages.

Although some chapters of this book are critical of certain aspects of the public sector, I hope that the volume as a whole, funded as it was by the taxpayers of the United States, argues convincingly for the continuing importance of governmentally supported research, particularly that of an international collaborative nature.

My wife Jo has been supportive throughout. This book is dedicated to her and to our children.

Marcellus S. Snow

Contents

About th	e Contributors		ix
Acknowl	edgments		xiv
PART 1	INTRODUCTION AND ANALYTICAL TOOLS FROM ECONOMICS AND POLITICAL SCIENCE	M	1
One			
Introduc	nications Policy in Seven Developed Countries: tion, Background, and Conclusions		
	 Snow How Telecommunications Is Regulated: A Preliminary Discussiountry Comparisons and Conclusions 	on	3 4 9
Two			
	ry into Telecommunications? ian von Weizsäcker		20
	used versus Cost-based Pricing of Services		20
	ivalence Principle of Public Utility Pricing: Value-based Pricing		21
Cost-bas	sed Pricing		27
	nging Balance in Telecommunications: From Value-based		
	st-based Prices		31
	on and Competition ies of Scale		32
	ns of Price Structure		35
	stitutional Implications for the Telecommunications Sector		36
	natic Beginning	4	39
			Ÿ
Three	tical and Institutional Context		
		20	
	nunications Policy		-42
Roger G. N	erizing the Supply Structure		44
	erizing the Supply Structure		48
	ing Observations about Communications		60
		,	V

PART 2	A SURVEY OF TELECOMMUNICATIONS POLICY IN SEVEN COUNTRIES	67
Four		
Deregula	ition, Divestiture, and Competition	
in U.S. T	elecommunications: Lessons for Other Countries	
Alan Baugh	cum	69
	eral Communications Commission and Deregulation	70
	estiture of AT&T	82
	Congress	86
	munications Markets in the United States tions on Telecommunications in the United States: Lessons for	87
	Countries	90
	y and Conclusions	95
	x: Broadcasting and Cable Deregulation in the United States	96
проти	and dealers and de	
Five		
	y of French Regulatory Policy	400
Jean-Paul V		106
	munications ization	106
_	nt Regulatory Policy and Trends	111
	sual Media	121
	aw of July 29, 1982	121
	ublic Radio and Television Service	123
Video	communications and Cable Television Networks	124
Compute	ers and Information Processing	126
Deregula	ation and Decentralization: Contradictory or Complementary Policies	? 126
Six		
Economi	ic Policy toward Telecommunications, Information,	
and the	Media in West Germany	
Karl-Heinz	. 10	131
	Policy toward Information Technology	132
	munications	135
The Orga	anization and Regulation of the Media	146
Seven		
Telecom	munications Liberalization in the United Kingdom	
Charles Jon		153
Options	in Telecommunications Network Structure	153
	ation of Value-based Services and Terminal Equipment	158
	nsing of Mercury	161
	tion of British Telecom	162
Conclusi		164
Develop	ments in Cable Television and Satellite Broadcasting Policy	166

CONTENTS

Eight Developments in Canadian Telecommunications Regulation Gordon E. Kaiser Industry Structure Technology Competition in Equipment Markets Competition in Service Markets Structural Change The Future	173 174 175 177 181 191
Nine	
Telecommunications and Industrial Policies in Japan:	
Recent Developments	
Youichi Ito	201
Telecommunications Policy	202
Industrial Policy The Nature of Competition between Telecommunications and Industrial	213
Policies	217
Theoretical Considerations	221
Summary	223
Ten Australian Regulatory Policy Don M. Lamberton Australia as an Information Society Information Policy: Contrasting Views The Australian Telecommunications Industry International Services Broadcasting Services Australia's Dependence on Imported Technology The Domestic Satellite Debate A Theoretical Perspective	231 231 233 240 244 245 245 246 248
PART 3 RETROSPECT, CONCLUSIONS, AND FUTURE RESEARCH AGENDA	253
Eleven Telecommunications Policy on Both Sides of the Atlantic: Divergence and Outlook Eli M. Noam European Policy Options in the Telecommunications and Information Sector: The Postal-Industrial Complex European Views on U.S. Deregulation and the AT&T Divestiture Political Dynamics and the Status Quo U.S. Telecommunications Involvement in Europe: Equipment and Services	255 256 259 262 265

U.S. Services Deregulation: European Reactions and Opportunities	269
Miscellaneous U.SEuropean Conflict Areas	270
Equipment Sales Opportunities for Europe Presented by U.S. Deregulation	272
Conclusion	273
Twelve	
Regulating Telecommunications, Information, and the Media:	
An Agenda for Future Comparative Research	
Marcellus S. Snow	275
A Taxonomy of Regulatory Approaches: Background for a Research	
Agenda	276
An Agenda for Future Research: Particulars	278
The Research Agenda: Summary and Example	290
Index	205

PART -

Introduction and Analytical Tools from Economics and Political Science