

information on *legal* aspects of telecommunication regulation in Germany. However, readers interested in the *economic* arguments that have led to the current regulatory framework will also find a useful presentation of the basic principles and arguments. The complexity of the topic has been mastered by a transparent structure and by many editorial details which make the book user-friendly. For an academic reader a more accessible list of references (they are located almost randomly behind chapters) would be helpful, and some redundancies might have been avoided. However, these shortcomings are negligible in view of the huge task that has been successfully completed in the *Handbook*.

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Parchment, Printing, and Hypermedia: Communication in World Order Transformation

Ronald J. Deibert

New York, Columbia University Press, 1997, xi + 329 pp., US\$20.00 (pbk), ISBN 0-231-10713-7 (pbk)

Ronald Deibert is professor of political science at the University of Toronto, where Harold Innes and Marshall McLuhan once taught. In this book Deibert adopts 'medium theory', (developed by the 'Toronto School of Communications' and made famous by McLuhan) and uses an elaborated version in his analysis of the effect of new communications technologies on the distribution of power within society. Deibert attempts to return to the fundamentals of a theory that has, he grants, been 'reduced to a few well-worn clichés'. This modified version, which he describes as 'nonreductive evolutionary medium theory', addresses problems with traditional medium theory associated with causality. To avoid a charge of technological determinism, Deibert adopts an evolutionary analogy in which advances in communications technology are represented as an 'environment' that favours certain ideas and social forces over others, rather than being seen as the single cause of change in a reductionist model. After identifying a significant gap in the research undertaken in the field of international relations in relation to medium theory, Deibert undertakes an historical analysis of the impact of earlier communications revolutions before turning to what he describes as the 'hypermedia' of our age.

In Part 1 'Printing and the Medieval to Modern World Order Transformation', Deibert examines the influence that the introduction of the printing press had upon the transformation of political authority from the medieval to the modern sovereign state system. The Roman Catholic Church's monopoly over written communication on parchment underpinned its authority. This control over the written word was combined with a 'multimedia' experience for the illiterate masses in the form of religious art and imposing church architecture which reinforced the message of power. A change in the communications environment, Deibert argues, disadvantaged the Church and facilitated the rise of other social forces and ideas. A gradual rise in secular literacy from the end of the twelfth century, the replacement of heavy expensive parchment with lighter cheaper paper, and the arrival of the printing press in the mid-fifteenth century provided

an environment for political change. Printing and paper became powerful allies when placed in the hands of an increasingly literate community. What, Deibert wonders, might have arisen from earlier heretical movements had their proponents had available to them the presses put to such effective use in the Protestant Reformation? Having rejected technological determinism, Deibert does not represent the invention of printing as a sudden innovation that changed the course of history, but rather locates it within a convergence of social pressures which demanded more efficient communication. To the detriment of the Catholic Church, this new communications environment favoured the Protestant Reformation and scientific humanism, the rise of centralised state bureaucracies and an urban bourgeoisie, and empowered the emerging nation states. A new conceptualisation of the individual and linear-ordered space also emerged in the new typographic media environment. For Deibert, 'the emergence of a new, distinctly modern, imagined community: the nation' is of particular importance. This imagined community was, Deibert argues, based upon a shared standardised language enabled by printing.

In Part 2 'Hypermedia and the Modern to Postmodern World Order Transformation', Deibert uses the same analytical approach in relation to the contemporary communications revolution. Analysis of the impact of a new communications 'environment' upon evolving world orders in the latter part of the twentieth century is especially appropriate: the convergence of communications technologies, made possible by digitisation, has truly created an 'environment' in which no one innovation exists independently. Television, the computer, the fax machine, the cellular phone, microprocessors, satellites, fibre optic cables (the most obvious from a long list of technological innovations) are now 'linked *together* in a single seamless web of digital-electronic-telecommunications'. Deibert adopts the term 'hypermedia' for this new environment.

What new world orders will be advantaged by this new communications environment? Deibert argues that the new hypermedia environment favours transnationalisation of production and the globalisation of finance. Corporations that operate transnationally benefit from 'multilocal flexibility' which is facilitated by improvements in the communications environment. Transnational social movements have also flourished in the hypermedia environment. Nongovernmental organisations (NGOs), for instance, have become an established feature of world politics. Hypermedia favours a 'global civil society' that crosses boundaries and threatens nationalism. Deibert takes a reassuringly optimistic view of the impact of the new communications technologies. Concern is often expressed about the 'big brother' capacity of electronic surveillance in the hands of national governments. True, governments can use sophisticated electronic surveillance to monitor citizens, but at the same time the new communications technologies make it difficult for governments to suppress the free flow of information, and the actions of governments are, in turn, the subject of electronic scrutiny by the rest of the world using satellites with global coverage. Oppressive governments are under international scrutiny and, Deibert suggests, it is domestic security arrangements that are decentralised and transparent that will function best in the hypermedia environment. Finally, Deibert suggests that 'postmodernist', heterogeneity and fragmentation will flourish in this environment. In his concluding chapter, Deibert suggests that if there is 'one clear "winner" in the hypermedia, it is the collective interest of transnational capital', and while he does not anticipate the demise of the state, he does present a view of a world in which the values underpinning the nation state are in transition. This means that 'the theoretical tools and concepts International Relations theorists have inherited and employed for centuries to study world politics will be in need of revision'.

Deibert leaves his discipline with a considerable challenge. This use of medium

theory in the analysis of world order transformation is interesting, and comes at a time of renewed interest in McLuhan from a contemporary audience informed by postmodernism.¹

Reference

1. See for instance, Tony Tremblay, 'Reading McLuhan in a postmodern age: the constructions of Glenn Wilmott, Terry Gordon, Robert Logan, and Derrick de Kerckhove', *The Antigone Review*, 110, 1997, p. 143.

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The Electronic Superhighway: The Shape of Technology and Law to Come

Ejan Mackaay, Daniel Poulin and Pierre Trudel (Eds)

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This book, number 18 in the Kluwer Computer/Law Series, is a collection of papers presented at a one-day conference held by the *Centre de recherche en droit public* of the Université de Montréal on 13th May 1994. In this field the technology, if not the law, changes so fast that publication of conference proceedings in print seems incongruous. The following anecdote in Tom Bruce's paper illustrates the point well: 'By Christmas [1993] eight new trade paperbacks purporting to be guides to the Internet appeared on the shelves of mass market booksellers. By New Year's Day they were out of date'. Nevertheless, much of what is presented in these papers covers issues of ongoing concern. The editors state that their aim is to capture the flavour of current debate about the impact of the new communications and information technologies upon society 'in midstream', and this they achieve. The papers cover a wide range of issues from a brief history of the Internet to legal liability, free speech and the protection of rights, from interactive TV to scholarly electronic publishing. It is not possible in a short review to consider each of the nine papers in detail. The grouping of the papers into three parts covering the environment, uses and law of the electronic superhighway give an indication of the issues covered.

Part I, 'Electronic Superhighways—Environment' starts with a useful overview of the development of the Internet in the paper 'Introduction to the Internet' by Guy Basque (Assistant Director of Computer Services, Université de Montréal). This background will be especially useful for the many people who now use the Internet daily, and yet have the uncomfortable feeling that it snuck up upon them unawares! Larry Press (Professor of Computer Information Systems, California State University) considers what might be described as a clash of cultures in the second paper 'Two Cultures, The Internet and Interactive TV'. The difference between the two is epitomised by differing approaches to charging users: '[t]he Interactive TV culture is based on the sale of copywritten (sic) information for royalties, while the Internet grew from the academic community which values information sharing'. André Caron's paper 'The Domestication of a New