Public Access to the Internet *edited by Brian Kahin and James Keller* (The MIT Press, Cambridge, 1995), pp. viii + 390, US$20.00, ISBN 0-262-61118-X

This book is the first of a planned series of volumes on information infrastructure issues to be supported by the Harvard Information Infrastructure Project and the MIT Press. It is timely in its appraisal of the public access issues and concerns that confront the Internet at this stage of its development. To date, Internet development has been characterised as 'middle up' infrastructure. User communities have typically been affiliated with military, Government, research or academic institutions. The call for a broader based public access to Internet or universal service has been prompted by the notion that Internet is a paradigm for global information infrastructure. The benefits that derive from universal service and access to this infrastructure have focused attention on the need to facilitate access to new classes of user and to take stock of alternative pricing and service models. The papers included in this edited volume focus on public access to the Internet and the emerging range of perspectives that represent the varied stakeholders in future Internet and Information Infrastructure development. The contributors comprise a mixture of both practitioners and scholars. The papers appear in sections entitled - The Public Access Agenda; The Sociology and Culture of the Internet; Establishing Network Communities; Accommodating New Classes of Users; Pricing and Service Models. The volume is authoritative, well structured and thought-provoking.

Acknowledgment of the importance of the public access issues represented in this book depends to some extent on acceptance of the notion that Internet is an information infrastructure together with all that this implies. The term information infrastructure has recently been used to promote the information technology initiatives of the Clinton Administration. In this context it describes the infrastructure of openness and interoperability that is commonly associated with Internet and internetworking. Brian Kahin, in his opening chapter, uses this perception as the basis for developing a view of Internet as the widely accepted paradigm for Global Information Infrastructure. The principles of universal service and access to information are fundamental to this view which in turn focuses attention on the issues of - Who has access to the information infrastructure? - What are the benefits of Internet use? and - If benefits are derived, how can broader public access be achieved?

Kahin has presented his view of Internet as information infrastructure more expansively elsewhere. Lewis Branscomb [1] uses this earlier work to enunciate the first of two policy challenges that must be confronted before the promise of an information-rich society based on digital electronic infrastructure can be realised. This first challenge is for policy that will bring together the service environments represented in perceptions of Internet as knowledge infrastructure, integration infrastructure and telecommunications infrastructure. The key to this challenge is to preserve the openness, flexibility and low cost of Internet while, at the same time encouraging investment that will support infrastructure developments. This points at the second of Branscomb's policy challenges - the need to provide incentives that will stimulate the development of new Internet services funded by the private and public sector. Branscomb councils some caution to encouraging private sector investment that might threaten the vision of universal access to information with electronic entertainment initiatives. The key is to preserve and protect the public values of the information infrastructure.

James Keller completes the introduction. This chapter appears to be the only contribution written specifically for this publication. Most of the papers were first presented at a conference held at Harvard's John F. Kennedy School of Government on May 26-27, 1993 and later amended or updated for inclusion in this book. These origins mean that some

repetition is bound to occur in development of background on a topic across chapters. The background to Internet development and National Information Infrastructure is covered in several chapters for example. The strength of developing an edited volume in this way, however, is the diversity of opinion that can result. The sense that contributors have not endeavoured to modify an approach to the issues of public access to the Internet to be complementary or compatible with other contributors is evident.

In his chapter Keller specifically articulates the purpose of the edited volume which, in a way, recommends it as a first chapter rather than third. It does, however, provide a good introduction to the chapter sets which follow. The themes presented in the opening chapters are elaborated and expounded. In particular, the broad base of Internet stakeholders is constantly reinforced in chapters that deal with Internet access for the poor, American Indian and Alaskan Natives, business users and 'new users'.

The Internet 'new user' is really what public access to the Internet and Internet policy development is all about. Internet is at a stage in its development as an information infrastructure where policy makers can envision a next step towards a ubiquitous and seamless data networking environment that will extend beyond institutional or affiliated user communities and into the office, school and home. The real vision of public access to the Internet is not a matter of moderated pricing or placing public access terminals in libraries. It requires the creation of an infrastructure that makes Internet connectivity and use as simple, commonplace and day-to-day as current telecommunications with fax and telephone. In this vision the 'new user' is the consumer or casual user who will ultimately become the mainstay of the Internet community.

Daniel Dern distinguishes two 'new user' communities - public end users and commercial business users. Public end users access and use the Internet as individuals. This use is not based on any affiliation with an institution. In this sense, public end users are not a community in the way user communities have been traditionally described. They are unpurposed users or random users. Commercial business users are defined as individuals and companies using the Internet for jobs, work or business. Public end users and commercial business users demand different things from Internet as an information infrastructure. Commercial users expect Internet to provide a similar level of service as other communication utilities used in business - reliability, clear costing, accountability, security and so on. Public end users require easy to use interfaces, reasonable user services and user aids. Dern considers both public end users and business commercial users as essential user communities for Internet. They provide money for growth. New user communities also provide validation that the Internet technologies, resources and services have a wider application than the academic, research and government communities for whom they were originally designed. A more comprehensive level of information service is bound to result in broader public access to the Internet.

Terrance McGarty and Carole Haywood suggest that the development of Internet into a new user community will depend on changes to the current architecture in three areas: multimedia communications, access expansion and host migration. Scott Shenker supports this view. He claims that public access to the Internet will lead to the development of integrated services. In this way public access will force major changes to basic network architectures replacing TCP/IP protocols with integrated services packet networks (ISPNs). Inevitably, major changes of this sort will impact on pricing and service policy. The final chapters of this volume present a range of pricing and service models that can be adapted to the developing character of public access to the Internet.

This volume, therefore, provides a comprehensive coverage of issues and policy concerns associated with broadening public access to Internet. The only suggestion I would

offer to the editors is an editorial summary or introduction to each set of papers, contextualising the discussion and viewpoints that follow. This more active editorialising of the content would improve the usability of the volume from an academic teaching perspective. Overall, however, the book presents a range of stakeholder perspectives and its contributors are authoritative. It compliments existing scholarly treatments of the complex view that Internet is the precursor to a global information infrastructure that will ultimately transform the way information is created, stored, transferred, retrieved and used in the modern world. For these reasons, I recommended the book to scholars and policy makers in communication and information technology related disciplines.

REFERENCE

1. B. Kahin,, 'Information technology and information infrastructure' in L .M. Branscomb (ed.) *Empowering Technology: Implementing a U.S.strategy*, The MIT Press, Cambridge, MA, 1993.

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Telecommunications in the Pacific Basin: An Evolutionary Approach *edited by Eli Noam, Seisuke Komatsuzaki, Douglas A. Conn,* (Oxford University Press, New York, 1994), pp. xvii + 514, A$110, ISBN 0-19-508421-7

Reviewing this edition of collected essays is a bit like trying to assess a cookery book. In this case we are looking at recipes for telecommunications development from a country perspective in the Pacific region. What unifies this book, like some of the great cookery books such as those of Elizabeth David, is the strong personality given to this undertaking by the framework established by the editors, especially Eli Noam.

This volume sets its sights high. "The subject of this book is the telecommunications systems of the Pacific region - their past, present, and future. Their evolution provides an abundance of rich material, yet it had not been previously comprehensively presented and analyzed". This prefatory comment is both ambitious and, perhaps, misleading. This book is strong on the past and contemporary situation: its contributions are less interested in the hazardous business of trying to discern and describe possible emerging futures.

The focus is on the Pacific region - a sphere of influence defined solely by a sense of propinquity associated with ocean waters. There are fourteen country case studies, as well as the regional grouping of the Pacific Island Nations. The United States, Canada, Japan, Singapore, Australia and New Zealand represent the mature, OECD economies in the region. The other country case studies represent the emerging East Asian economies.

I suspect that the lasting contribution of this book will be found in the attempt to essay a theoretical framework for telecommunications development, particularly the introductory chapter by Eli Noam. Noam identifies three evolutionary stages in telecommunications development, as follows (page 17):

1. The cost sharing network. Expansion is based on the logic of spreading costs across many participants, and increasing the value of telephone interconnectivity.

2. The redistributory network. The network grows through politically manipulated transfers among users.