TER Volume 4, Issue 3, April, 1997

ter
telecommunications electronic reviews

Telecommunications Electronic Reviews (TER) is a publication of the Library and Information Technology Association.

Contents:

ter issues (/lita/publications/archive/ter)

REVIEW OF: Rachael E. Schwartz. Wireless Communications in Developing Countries: Cellular and Satellite Systems. Boston: Artech House, 1996.

by Steve Hardin

Suppose you woke up tomorrow morning and discovered the United States' entire telephone system was gone. After the initial shock wore off, and coping strategies were devised for dealing with the loss, the question would arise: how do we replace the phone system? What would a brand new telephone service look like? How would it be similar to the present system? How would it be different? Who would set it up? Who would pay for it? What role, if any, should the government play in regulating it?

Questions like these are being asked and answered every day in developing countries, where telephone service is considerably less ubiquitous than it is in the United States. Given the cost of wiring a nation, it is unsurprising that many developing countries are choosing to rely on land-based cellular or satellite services which were unavailable when the United States began assembling its telephone systems. The story of how these countries are building their communications infrastructures is the topic of Wireless Communications in Developing Countries: Cellular and Satellite Systems by Rachael E. Schwartz.

Schwartz, an attorney who deals with international telecommunications and transactional law, begins her study with an overview of the trends and issues involved. She then methodically takes the reader through a discussion of cellular and satellite systems. She treats the subjects with an eye toward regulation and business practice.

This last point bears additional emphasis. Many of the other titles in the Artech House Mobile Communications Series (or the Artech House Telecommunications Library, to use the Library of Congress authority record version of the title) deal with topics such as networks and geosynchronous communication satellites in a more technical manner. Mixed in with the technical volumes are works geared more toward the business manager and other nontechnical people. Schwartz's book fits this second category. Readers seeking the mathematics and science behind wireless communications technology are advised to look elsewhere.

Schwartz's initial overview considers the goals of the two main groups which pay for wireless communications: government and investors. She talks about their common interests and where those interests differ. She concludes wisely:

[a] government that wishes to attract private investment in a wireless system will want to understand how a private investor ... evaluates opportunities for investment ... Conversely, investors would do well to understand the needs of the countries in which they seek to provide service. (p. 13-14)

Schwartz proceeds to discuss cellular communications in depth, starting with a very good nontechnical overview of the technology involved. After the technology is understood, a developing country needs to determine whether the government or private investors will operate the system. She explains the pros and cons of both approaches and outlines some of the solutions to the issue that various nations have developed. License agreements vary widely from country to country. For example, the United States issues cellular licenses for ten years, but Mexico at one time issued a 50-year license (p. 57). What about rate regulation? There are two basic models, and Schwartz presents information about each. Chapters on the license grant process, universal access, service quality, interconnection, and other aspects of cellular communications round out the presentation on this service.

Next, Schwartz considers satellite communications. As with her discussion on cellular communications, she begins with a nontechnical overview of the technology. She explains geostationary (GSO), low-earth (LEO), middle-earth (MEO) and highly elliptical orbits (HEO). She also examines regulation from global and national perspectives. She provides good descriptions of INTELSAT, COMSAT, and various other satellite organizations.

While most of Schwartz's treatments of the subject matter are excellent, there are several curious omissions. For example, in her discussion of frequency allocations for LEO services, she notes "[t]hey utilize or expect to utilize portions of the VHF (30 MHz-300 MHz), UHF (300 MHz-1 GHz), and L and S bands (1-3 GHz)." (p. 132) But there is considerable opposition to the LEO companies' acquisition of these bands by the services currently using them. Case in point, a portion of the spectrum in question has been assigned for decades to the amateur radio service, whose hundreds of thousands of members have angrily mobilized an intense lobbying effort to prevent the LEOs from taking these frequencies. Yet this conflict receives no mention in Schwartz's book.

This reviewer was quite impressed by the quantity and quality of documentation present in this work. Scarcely a paragraph goes by which lacks an end note. Even the introduction, about a page and a half long, is accompanied by nearly a page of end notes.

The end notes work both for and against the quality of the book. On the one hand, they add a terrific amount of information. Any reader who wishes to know more about any of the issues Schwartz discusses may see exactly where she gets her facts. Sometimes she even injects a little wry humor into the topic through an end note. For example, a discussion on a satellite system named "Iridium" (p. 179) is augmented by an end note which explains:

The name Iridium was chosen because the system was originally planned to have 77 satellites and iridium is the element with the atomic number 77. Engineers were later able to reduce the size of the constellation to 66. However, the company did not rename the project Dysprosium. (p. 188)

On the other hand, the end note format requires the reader to flip endlessly back and forth between the notes and the text. This arrangement is only slightly annoying in a book with a few references; in a work as thoroughly documented as Schwartz's, it is downright infuriating. Using footnotes instead of end notes would greatly enhance the readability of this book.

The end notes are only part of the documentation. Two appendices make up nearly half the book. They are both government forms: "Specifications of Bases and Conditions for the International Public Bid for the Provision of Mobile Telephony Services in the Argentine Republic" and "Invitation to Apply for a License to Provide a National Cellular Telephony Service" issued by the South African Minister of Transport and of Posts and Telecommunications. Both appendices serve to inform the reader of what is involved in setting up such services; they are useful guides for any entrepreneur considering providing such services for a developing country.

The book could be improved further by the addition of a glossary. Schwartz uses a number of specialized terms, all of which are defined quite nicely in the text. But this reviewer found his memory of the definitions failing all too frequently when he encountered a previously-defined term 20 pages later. He had to consult the term in the index, go back to the place where the term makes its first appearance, and reacquaint himself with the definition there. This method certainly works, but it would have been faster and easier to consult a glossary.

This reviewer considers these criticisms to be minor in comparison with the overall high quality of the book. Schwartz has packed a considerable amount of information into a readily accessible form. This book will serve as a valuable resource for business and government personnel who are making the decisions determining the shape of cellular and satellite communications services.

Steve Hardin (LIBHARD@cml.indstate.edu (mailto:LIBHARD@cml.indstate.edu)) has worked as a holistic librarian at Indiana State University since 1989. He spends his time split between Electronic Information Services and Technical Services. His publications and presentations cover various aspects of electronic resources and holistic librarianship.

REVIEW OF: Wendy H. Michael, William J. Cronin, Jr., and Karl F. Pieper. FDDI: An Introduction to Fiber Distributed Data Interface. Newton, MA: Butterworth-Heinemann, 1993.

by Ann Thornton

Fiber Distributed Data Interface (FDDI), a Local Area Network (LAN) standard, includes features that make it a good solution for organizations that need to remain flexible in networking. Its speed and versatility are attractive to those planning for a high-performance network.

FDDI: An Introduction to Fiber Distributed Data Interface is an excellent reference for those who need to understand the design concepts and potential configurations of FDDI. When planning for a new network, there are many considerations and decisions affecting implementation that must be looked at carefully. This book includes a thorough description of the features, topologies, and components of FDDI standards without referencing a specific set of products. Prepared by members of the Networking and Communications Marketing and Engineering groups of Digital Equipment Corporation, this book is essential reading for telecommunications managers, network managers, or others who are responsible for networked computer systems.

The book is actually perfect for the beginner. Introductory chapters include very basic information about network architecture in general, providing descriptions of interconnect devices and LANs as well as placing FDDI in the context of the Open Systems Interconnection Reference Model. Subsequent chapters give detailed descriptions of each of the FDDI standards and explain how data flows on the FDDI ring. FDDI: An Introduction also contains a complete glossary of networking terminology and includes easy-to-understand illustrations to help explain basic concepts. Because it begins with the fundamentals of networking standards, this book would be quite useful for support persons who will be working with FDDI.

For the manager, sections on planning for FDDI networks are helpful. A chapter on how to create a structured infrastructure and another on topologies permitted by FDDI standards provide essential information for understanding how FDDI works. There are detailed descriptions of each of the components of an FDDI network: concentrators, controllers, bridges, and routers.

An entire chapter is devoted to FDDI network management. The role of station management is defined, and the management functions are explained. LAN integration is also explored by this book. There are precise comparisons between the three most commonly used LAN standards: FDDI, IEEE (Institute of Electrical and

Electronics Engineers) 802.3, and IEEE 802.5. Tables relate the features of each standard in the areas of bandwidth, number of stations and distances, topologies, supported media, and frame size.

A final chapter on implementing an FDDI network includes important information relating to considerations, decisions, and challenges that face those who are planning for FDDI. This section also includes some information on the future of FDDI developments.

In summary, FDDI: An Introduction to Fiber Distributed Data Interface is an excellent resource for anyone who intends to implement, manage, or support an FDDI network.

Ann Thornton is electronic training coordinator of the Science, Industry, and Business Library of the New York Public Library. She can be reached as ATHORNTON@NYPL.ORG (mailto:ATHORNTON@NYPL.ORG).

table of contents   ter issues (/lita/publications/archive/ter)

REVIEW OF: Stephen Spainhour and Valerie Quercia. WebMaster in a Nutshell: A Desktop Quick Reference. Sebastopol, CA: O'Reilly & Associates, 1996.

by Andrew Wohrley

WebMaster in a Nutshell continues the popular series of "... in a Nutshell" books that O'Reilly produces. Aimed at the Webmaster who does everything from publishing to configuring the server, WebMaster in a Nutshell provides brief definitions of all the commands a Webmaster uses, might use, or will use in the future. While WebMaster in a Nutshell is a slim book, it is packed with information, primarily consisting of definitions, and is best for people who already know HTML (Hypertext Markup Language), CGI (Common Gateway Interface), JavaScript, and server configuration, but need a handy book to refresh their memory.

The book begins by describing its audience as Content Providers, Designers, and Administrators. The book is then divided into five major sections: "HTML," "CGI," "HTTP" (Hypertext Transfer Protocol), "JavaScript," and "Server Configuration."

The section on HTML begins with structure and syntax, and proceeds in succeeding chapters to describe HTML codes, how to lay out frames, and tables. Color names and values are described in great detail; the way to adjust the colors on the screen to the right shade is shown. The chapter on character entries lists the codes for generating non-keyboard characters. For example, the Yen symbol is generated in HTML by entering &#165 or &yen. There is a chapter on browser comparisons between Internet Explorer and Netscape Navigator. While useful at this point, this chapter seems doomed to quick obsolescence thanks to the browser wars.

The chapter on CGI assumes that the WebMaster has previous experience in CGI and PERL (Practical Extraction and Report Language) and is difficult to understand without that experience. The format of the HTML chapters, however, is continued; it consists mainly of defining terms and commands, and not necessarily demonstrating them in action. The FORM tag is explained, along with how to incorporate it into

HTML files. CGI environment variables are defined. Cookies--what they are and what they do-- are defined next. Cookies allow Webmasters to automatically personalize Web pages for users who browse a particular Web page. Server Side Includes permit data to be placed in HTML documents, when the server permits. Windows CGI is then explained for network administrators. PERL commands are defined next. Most usefully, the chapter ends with a list of sites on the Web where CGI resources are archived for use by Webmasters.

The chapter on HTTP is brief, but discusses the inner workings of HTTP request and retrieval protocols. The server response codes are defined, along with HTTP headers, and the media types and subtypes used by plug-ins.

The section on JavaScript is well done, providing information on JavaScript commands and a sample of JavaScript for writing a table of factorials page. The authors begin by defining what JavaScript is and does, and then proceed to define the commands.

The book concludes with a section on server configuration, with the commands and structure of Apache, NCSA (National Center for Supercomputing Applications), CERN (Conseil Europeen pour la Recherche Nucleaire), Netscape, and Website described. Systems administrators will find this section most useful.

Throughout the book, the authors make reference to other O'Reilly and Associates titles for further information. The authors do an admirable job of condensing in direct prose all the information needed for people involved in all aspects of Web publishing. The book, however, assumes a great deal of knowledge on the part of the reader, and without that knowledge, this book is cryptic in parts. WebMaster in a Nutshell is not the book for someone just starting out creating a Web page.

Andrew Wohrley, a contributor to the Cybrarian's Manual, is a librarian at Auburn University. He may be reached as WOHRLAJ@LIB.AUBURN.EDU (mailto:WOHRLAJ@LIB.AUBURN.EDU).

table of contents   ter issues (/lita/publications/archive/ter)

About TER