Telecommunications Electronic Reviews (TER)

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Contents

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

REVIEW OF: Marc R. D'Alleyrand, ed. Networks and Imaging Systems in a Windowed Environment. Boston: Artech House, 1996.

by Bradford Eden

Image storage and retrieval has become one of the most discussed and debated topics in the library and archival fields in the last five years. For those who are just beginning to explore the possibilities, there are questions of costs and hardware, software, and equipment comparisons. For those who have begun to

implement the technology, there are questions of quality and storage of images, future access concerns, image degradation over time, and ergonomics.

This book is one of three that the author has compiled to assist those who are interested in implementing this technology within their organizations. The first two books, Image Storage and Retrieval Systems, and Handbook of Image Storage and Retrieval Systems, deal with the how and why of imaging. [1, 2] The purpose of this book is to discuss design and implementation concepts currently available through the multitasking (windowed) and communicating (networked) technologies, especially with Windows95 and Windows NT. The workstation as the physical interface between the organization and its information system is examined, and the constraints that are placed on such an interface through the use of imaged documents is discussed.

The book is divided into three parts: "Introduction to Networks and Imaging Systems," "Planning and Design," and "Implementation." Each part has a number of chapters that are written by the author or an expert in that particular subject. Those chapters not written by the author are preceded by an editor's note, which provides a brief summary of the topic as well as current debates and attitudes relating to that particular area.

The author states in the preface that the book is written for the end users of document retrieval systems, and therefore uses minimal technical terminology. I have always found D'Alleyrand's works to be understandable from a beginner's point of view, even though this is especially a challenge when writing and discussing technology as complex as imaging systems. This book does not disappoint in its accessibility to novices. I found technical jargon at a minimum, technical terms and acronyms explained when first introduced, and plenty of diagrams and illustrations to complement the text.

The author discusses options currently available in all areas of imaging, including hardware, software, and networking considerations. Those who are computer systems administrators, programmers, and designers will find an easy to follow book that has not sacrificed technical knowledge for understandability. I would highly recommend this book to all who are exploring the possibilities of image storage and retrieval using the current windowed environment. It can be a blueprint for those who are beginning to budget, plan, and network processes for implementing this technology.

Notes:

[1] D'Alleyrand, Marc R. (1989). Image Storage and Retrieval Systems: A New Approach to Records Management. New York: Intertext Publications.

[2] D'Alleyrand, Marc R., ed. (1992). Handbook of Image and Storage Retrieval Systems. New York: Van Nostrand Reinhold.

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REVIEW OF: Uday O. Pabrai. UNIX Internetworking. Boston: Artech House, 1996.

by Temple Hoff

Ever wonder why school kids hate science? My early-childhood-to-teenage opinion of all fields of scientific study was "Boring!" I have always been an avid science fiction fan, but drew no connection between the wonder and excitement of SF and the mind- numbing drool that oozed from my high school earth science textbook. I never understood how authors could go so far out of their way in order to present their subject in the driest, most dispassionate way possible. Computer scientists can often be the worst offenders in this area. After all, they are used to providing their machines with pure streams of no-frills coded logic. This is what Uday O. Pabrai has provided in this volume -- pseudocode. The book is essentially a tightly organized, logically ordered, moderate to in-depth level pseudocode of UNIX.

If I could give one piece of advice to Mr. Pabrai, it would be to grab an "Idiot's Guide to... [whatever]" book and pick up some style points. I know, I know! It's meant to be useful and informative, not entertaining. Bah, humbug! If it isn't worth writing with style, it isn't worth writing! I mean, system administrators are people, too; have a heart! You can't just feed the human mind 436 pages of pseudocode, at least not without ranch dressing and some fries on the side.

Now for a blow-by-blow description. Chapter one plunges the faithful reader into the sordid and colorful history of UNIX. All the major flavors of UNIX are introduced, and most are elaborated on with one notable exception--freeware flavors of UNIX, like Linux, are given one meager reference. With the market share currently occupied by this new generation of free UNIX operating systems and the enormous growth they are experiencing, more attention should have been paid to them.

Chapter one also introduces most of the central concepts of UNIX, e.g., the location and purpose of important system files. Some client/server concepts are touched on as well. The book scores some points here; the information is spelled out clearly and in detail. The care put into organization makes it a prime candidate for easy reference.

One big problem though: tables are labeled at the top--good. Figures are labeled at the bottom--bad. There you are, reading along in a technological stupor and, all of a sudden, the entire topic changes for no reason. Your brain has been thrown into reverse and you're rehashing a topic covered on the previous page. Then, several lines further along, you learn that you've been reading a figure referenced earlier. A simple box around the figures and tables would solve this. The chapter ends as each chapter does, with potentially useful summary, reference, and bibliography sections. Chapter one does not have its own appendix as the other chapters do.

Chapter two starts as they all do, with clearly stated objectives and the enthusiasm of stale bread. The topic is network architecture. TCP/IP (Transmission Control Protocol/Internet Protocol), the OSI (Open Systems Interface) model and its layers are all covered extensively. There is one rather curious statement on page 35 concerning the cable companies' efforts, in conjunction with the National Information Infrastructure, to upgrade their long distance lines with 500 channel fiber. Mr. Pabrai says, "That's all we need!" Is this a humorous slap at the possibility of an American people, already addicted to the "tube," having 500 channels of re-runs at their beck and call? I was so consumed by the dryness of this book that, on the first read, I missed this lone, whimsical attempt at human communication.

In section 2.2.1, the fourth layer of the Internet architecture (TCP/IP) is called the "Session Layer." On the next page, it is mysteriously renamed the "Application Layer." In the OSI model, these are separate layers. I'm left unsure if both are acceptable for TCP/IP; an explanation should have been provided, or only one should have been used. This section has some table and figure problems as well. In one figure the OSI model is done top to bottom, and in the next bottom to top. This can get confusing. Figures often compare two charts labeled "(a)" and "(b)," but "(a)" and "(b)" are not defined. A key or legend would be nice. The award winner for poor tables in this book has to go to Table 2.3. It compares Ethernet and Fast Ethernet in all the essential categories. There's just one problem--no data! All the units of measurement are there, i.e. Mbps (Megabits per second), etc. but the numbers are missing. According to the Table, Ethernet has a maximum network diameter of "meters," and low and behold, so does Fast Ethernet! Did the author not know, or was this just very poor editing? And in a second edition no less!

Although most of the concepts in this chapter are covered in sufficient depth, including frame relay and ATM (Asynchronous Transfer Mode), I was surprised to see how little information was presented on FDDI (Fiber Distributed Data Interface) when it is so popular in the industry. Section 2.4 has an excellent layout of all the IEEE (Institute of Electrical and Electronics Engineers) 802.1 to 802.10 subcommittees, which set standards for local area network transmissions. Some points are scored here, too. TCP is covered in excruciating detail down to the hexadecimal code involved. This must be near to the author's heart, but I doubt the average administrator needs this level of detail. I was happy to see some of the more obscure concepts covered briefly such as DHCP (Dynamic Host Configuration Protocol). Chapter two also has an excellent summary and appendix. In fact, skip the chapter, and just read the summary.

Start chapter three, "Unix Networking Elements," and you'll find it's time to drop the embalming-fluid-filled carcass of a UNIX Operating System on the slab and start dissecting! This chapter makes the book almost buyable. It breaks down the nearly incomprehensible UNIX file system into almost digestible pieces, organized with precision, of course. A few inserted one-liners or horror stories from the field and this chapter just might have worked. As it is, it's a very good reference.

The major processes, daemons, and related files are explained fairly clearly. Related commands are covered well--drily, but well. The detail of switches for commands such as Netstat, with examples no less, are very useful. Table 3.2 is in dire need of updating. After great detail on Archie, Veronica, and other dead comic book heros, the World Wide Web advice is to "use Mosaic and specify a www URL." PUH-LEASE--no Netscape, search engines, crawlers, spiders, or Java?

Chapter four brings the reader into the exciting world of distributed computing, covering such topics as NFS (Network File System), NIS (Network Information Service), NIS+, and DNS (Domain Name System). This chapter is packed with step-by-step how-to's for the installation of specific server and client packages. Frankly, a discussion on the theory of each and the overall concepts would have been preferable. What are the chances that the reader just happens to be installing that particular version of that specific software and has lost the readme files? Also, given that DNS seems to run the world now, more coverage of it would have been nice. All in all, the summary is the best part of this chapter.

Chapter five throws the reader into the white knuckle, edge-of-your-seat, sweat on your chin, world of hackers, crackers, phreaks and Internet bandits. Get a refill on that double espresso latte anyway, though, because this one's a real snore!

Yes, Mr. Pabrai can even make network security sound dull. Most of the traditional security concepts and high-brow terminology are covered well. The street lingo of savvy hackers and Chaos Computer Club types is ignored altogether, though, and it's always good to know what the enemy is talking about. That's the big

downfall of this chapter: the enemy is never introduced. The horrors of war are never presented to the virgin eyes of the reader, leaving us with no good reason not to have a lax, casual attitude about security.

On the good side, security is covered first, in a way not dependent on a specific operating system, and then we are brought into the world according to UNIX. This move was wise! Very good, standard password advice and detail on TCP/IP security are included. Unfortunately, there are no examples of what not to do, or how hackers get around these security measures.

Sendmail and SMTP (Simple Mail Transfer Protocol) are covered lightly, but mail bombs are not even mentioned. On most systems I've seen, mail has been the weak point of the security. More time should have been spent here. Some specific products such as ASET (Automated Security Enhancement Tool) and COPS are covered in depth. However, if you aren't using these programs, I don't see any purpose in covering them to this extent. There is a very enlightening section on the "TCP Wrapper." The chapter closes with a weak summary and a so-so anonymous FTP (File Transfer Protocol) appendix.

So, here we are in chapter six, "Client/Server Application." The basics, the concepts, the big picture--it's all covered here. Many of the deeper topics could be explained more clearly, but it's all there. Again, basic writing practice is not followed here. The author jumps from explaining what actually happens when a Telnet connection is made, to listing generic mechanisms used to make client/server applications. This sort of leap deserves at least a new paragraph, if not a new section number.

FIFO (First In First Out) and Pipes are discussed very well, but here again the figures are distorted. Berkeley sockets, TCP and UDP (User Datagram Protocol) ports are given great coverage, and the chapter ends on a strong note with sample code for some small server and client applications. The applications don't do much, but they could be the basis for good classroom exercises.

Chapter seven really covers the meat of this book--its main purpose. The topic is "Internetworking." NetWare, Macintosh, X Windows, and Windows NT are all covered. I expected so much of the chapter, but what a let down! Way too much time is spent on detailed NetWare 3.12 how-to's. Why not just cover the TCP/IP aspects of NetWare? This is not a NetWare book! Worst of all, NetWare 4 is not even mentioned nor is NetWare/IP. More time is wasted with installation how-to's for LanWorkplace for DOS. This stuff comes with very good, version specific documentation, thank you very much!

After all that, a pitifully small amount of attention is paid to NFS and gateways. The coverage of AppleTalk is very brief and scant, but who really wants to get that deep into AppleTalk anyway? X Windows is covered very well, but not very thoroughly. Section 7.3.9 discusses X Windows on PC's using PC Xware, with again no mention of Linux. I'm beginning to think Mr. Pabrai just doesn't like Linux.

Windows NT is covered in maybe a little too much depth with more unnecessary how-to's. Then again, with NT, I suppose one can use all the how-to's one can get. In the end, no comparisons are drawn between the platforms, there is no market share discussion, and NetWare 4 is not included! I can't believe the book spends 14 pages discussing NetWare 3.12 and doesn't even mention NetWare 4!

Chapter eight takes the reader that next logical step further, the management of a Unix network. There is some good stuff in this chapter, but it's dated. Communications devices are covered in great detail, hubs, routers, even CSU/DSU's (Channel Service Units/Data Service Units), but switches are left out entirely. Routing protocols are thoroughly worked over. SNMP (Simple Network Management Protocol) and MIB-II (Management Information Base) are elaborated on to no good end, with lots of nifty charts that I can't imagine a use for. Although, I suppose if you did need them, nothing else would do. SNMPv2 is nicely

covered almost as a footnote. All I ever really wanted to know about ICMP (Internet Control Message Protocol) is there, but it could have been explained a bit more clearly. A nice, short section on troubleshooting Telnet, FTP, and NFS ends the chapter well.

The book ends with some useful appendices, including a handy-dandy acronyms section and a short bit on IPng (Internet Protocol next generation). My overall assessment of this book is that a lot of knowledge, and not much heart, went into it; therefore, I can't recommend it. Mr. Pabrai certainly has the credentials to present information on the scale of this book. However, his overall poor writing style and pseudocode approach makes this a prime example of a '70's textbook fit for computer nerds and pocket protector calculator geeks of the almost forgotten past. It doesn't measure up to the fashion conscious, "X-Files," environmentally friendly, "What's your e-address?" "Catch me on-line" generation of high- speed wireheads filling today's computer and information science classrooms and, might I add, administering some of the more creative "Internetworked" sites out there. Am I expecting too much of a textbook? This thing lists for $65! For that kind of dinero, it had better entertain me or come with tickets to something that will!

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REVIEW OF: Tom Kinney. Entertainment Technology and Tomorrow's Information Services. Medford, NJ: Information Today, 1995.

by Leroy Smith

Although the author states his hopes that the "general reader" will find this book of interest, it is directed "mainly toward those professionally involved with the development and delivery of information services." The main focus of the book is to explore how the entertainment "orientation" of developing technology is likely to change and shape information services of tomorrow." As a result, the author hopes that by reading this book the reader will "become more effective as a planner, provider, developer, regulator, or user" of the coming information services.

To this end, the author explores the way specific information services of the past have adapted and changed, due to the influence of entertainment. He then proceeds to examine current entertainment technology trends, followed by a description of the key players in entertainment technology. He then explores the way these trends are shaping the emerging National Information Infrastructure (NII), and describes scenarios that illustrate how new information services may reflect entertainment technologies. He concludes by making five specific predictions about the future connections between entertainment technologies and information services. Special features of the book include illustrations (line drawings), tables, a glossary, an index, and a chapter-by-chapter summary of key points.

It is always tricky to write a book like this in a field that changes so rapidly, and the author acknowledges the potential problem. Yet, simply acknowledging such a difficulty does not mean it is overcome. Given that most of the book is based on information available in mid-1994 (which in some cases was at the time nearly two years old), miscues are inevitable.

When Kinney uses a trial in Denver in 1992 where technicians manually loaded video cassettes into 200 VCR's in response to viewer requests as an example of video-on-demand, it seems almost quaint. The fact that he devotes several pages to discussing and describing a technology such as 3D0, which is scarcely heard of today, and yet devotes only a single sentence in passing to the World Wide Web ("Many entertainment-related information servers based on the gopher and World Wide Web protocols may be found on the Internet," p. 41) may cause the reader to question some of his conclusions.

Because it is difficult to make accurate predictions, the author states he will not discuss "specific entertainment technologies...in great detail." Yet an examination of the index shows that more than half of the entries refer to specific people, technologies, or corporations (from Amiga to CDTV to Columbia Pictures to Robert Culp), reflecting the liberal use of specific products or companies, which in many cases are dated, as examples.

This book makes some interesting and legitimate observations on the way information services have been and will be influenced by entertainment technologies. It is not by any means a bad book; it does not contain inaccurate information, and it deals with an important topic. It does, however, have its limitations: it seems, in places, to belabor fairly obvious points; its major conclusions are rather self-evident; and given the inevitably dated information it contains, it probably would have been more fitting as a journal article than a monograph.

Had he published this piece as a journal article (or perhaps better yet, as an article on the Internet), the author could have eliminated many of the superfluous and out-dated examples, making those that he retained more up-to-date and thus more convincing; yet he could still have made the same points.

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

About TER