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REVIEW OF: Michael Bayer. (2001). *Computer Telephony Demystified: Putting CTI, Media Services, and IP Telephony to Work*. New York: McGraw-Hill.

By Ray Olszewski

Computer Telephony Demystified is both an excellent book and a disappointment. The excellence comes from the author's skill and knowledge, allowing him to take a complex and unfamiliar body of information and present it clearly and effectively. The disappointment comes from the publisher's decision to pitch the work as a how-to book, which it is not, instead of as a text on the fundamentals of the area, which it is.

Bayer's focus is on the ways that computer technology can be used in conjunction with conventional telephone services to improve efficiency and productivity. As with many of these half-technical, half-popular books, this one opens with a couple of rah-rah chapters, in which Bayer paints computer telephony as offering numerous benefits and no costs or downsides.

Despite top-notch writing, this Pollyannaish outlook wears thin quickly. I was especially skeptical of a illustrative story in which a character named Gunther makes everyone's life better by installing a screening system that traps people wanting to reach technical support in a "voice processing system that greeted each

caller to the help desk and asked basic questions about the problem." Having experienced this particular circle of hell many times, I found myself suspicious of Bayer's unhesitant enthusiasm for automated solutions from then on.

But put up with these introductory chapters -- or, better yet, just skip them completely -- because after them, Bayer buckles down to a serious technical presentation. The bulk of the book is a tour of the fundamental concepts of telephony as they relate to computer enhancement. Individual chapters take exhaustive looks at telephone hardware, the standard services provided by modern business phone systems, and the underlying technologies used for switching and transport. Intermixed with these chapters are two specific to computer technologies, describing in an abstract way the software used to manage the technologies and the content of telephone communications. Read these carefully and you will come away with a good understanding of the range of telephone technologies, both core telephony and recent computer enhancements.

The later chapters describe the variety of ways computer technologies assist in telephony, at both the end-user and management levels. Here again, the reader gets a good sense of the range of what is possible, both in the kinds of services that are available and in how they can be structured into particular solutions to problems.

All of this leaves the reader with a strong understanding of the fundamentals. But the book promises to do more than that, and that is where it fails. Despite the subtitle, you will not come away from this book knowing how to put these technologies "to work." Everything here is too abstract to allow the reader to make that step. There is, deliberately, no vendor-specific information here; while that enhances the presentation of the fundamentals, it hampers efforts to move from the abstract to the practical.

Of more concern, there is little in the way of judgment from the author. He endeavors to describe the possibilities neutrally and, unfortunately, succeeds. I come away knowing a lot about what is possible, but very little about what among the possibilities is valuable and what is rubbish.

So, if you have management responsibilities for a telephone system with any complexity at all, you will benefit from reading this book. You will walk into presentations from vendors knowing both the jargon of the industry and much of the substance that underlies the terminology. You will know, at least in a general way, what the alternatives are to a vendor's approach. But you will learn little about how to make actual decisions, or how to take a cautious stance about embracing these new technologies.

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REVIEW OF: Subhasish Dasgupta. (Ed.). (2001). Managing Internet and Intranet Technologies in Organizations: Challenges & Opportunities. Hershey, PA: Idea Group Publishing.

By Jon Mark Bolthouse

Managing Internet and Intranet Technologies in Organizations: Challenges and Opportunities, edited by Subhasish Dasgupta of George Washington University, is an attempt to apply academic processes, such as survey and case study methodologies, to emerging areas of information technology that normally are looked upon with only an eye for practicality.

The book is divided into three sections of three to five essays each. The first section details intra-organizational uses of Intranet technology. Chapter One, "Organizational Intranets Cultivating Information Technology for the People by the People" (Scheepers and Rose), details the emerging concept of Intranets in general and then applies the various concepts to a pseudonymous telecommunications company and its Intranet implementation. Readers are taken through the steps of data collection, analysis and interpretation; the methods used in interpreting this data; and, finally, a discussion of some of the implications of an Intranet rollout. An Intranet can have a great impact on the workflow, culture, and communication of any organization, and this chapter does a good job of identifying many of the ways organizations can be affected by an Intranet.

In Chapter Two, "Service Quality in the Virtual World: The Case of Extranets," Beverly Hope gives the reader a very brief introduction to Extranets. Several business models, including business-to-business (B2B) information sharing, are examined when an Extranet is implemented. Throughout the article, concepts involving service quality such as security, consistency, attitude, completeness, availability, and timing are applied to the Extranet in order to gauge its effectiveness.

Chapter Three, "Web-based Instruction in Organizations: Impact, Advantages and Disadvantages," highlights Web-based instruction (WBI) and its use of Internet technology in educational institutions. A history and analysis of distance education is presented in order to underscore the rapid changes Internet technologies have brought to the field. The essay then goes on to list the benefits to both the organization (in this case, a university), as well as benefits to the distance education student. University benefits include increased market access and lower long-term costs, while benefits to the students include increased participation in a non-face-to-face situation, increased access to resources, access to a "global classroom" composed of students from around the world, and possibly a less expensive educational experience, since commuting and lodging costs are not incurred. Finally, the authors present a survey given to instructors that looked at the perceived value of WBI on faculty. They found that "although the perceived need for additional training is higher than the reduction of administrative tasks, faculty do not believe that they are faced with the challenge of providing more stimulus materials to increase attendance" (p. 43).

In "Effect of Hypertext and Animation on Learning," authors Guru and Nah look at two aspects of any Web-based experience -- hypertext and animation -- and propose a model to study the effects these technologies bring to on-line learning. The model utilizes five concepts of both hypertext and animation: focused attention, interactivity, perceived congruence, playfulness, and media richness; then tracks their progress through flow methodology and finally to the expected outcome of effectiveness of learning. A contribution to the development of better and more effective on-line training modules (p. 60) is also expected.

The next section of *Managing Internet and Intranet Technologies in Organizations* is of the least use to most libraries and their information technology needs, since it deals with the subject of electronic commerce. Chapters five through eight detail such issues as information types and e-business models (McIntosh and Siau), infrastructures used to manage electronic services (Grönlund), macroeconomic implications of virtual shopping (Yetkiner and Horváth), mobile electronic commerce (Panko), and combining enterprise resource planning systems with e-business concepts (Wang and Nah). These five topics, though quite relevant within the broad spectrum of Internet-related subjects, have little impact on the day-to-day activities of most library systems departments.

The last section briefly discusses four topics that may be of more interest to library staff.

Chapter 10, "Security: The Snake in the E-Commerce Garden," by Raymond Panko, gives readers a good introduction to various security threats facing users and administrators; several key methods used in combating these threats; a look at integrated security systems (ISS) and how organizations have implemented these in order to attempt to secure their networks; and a brief mention of several security issues such as liability, social engineering, and methods used in a single point of takeover attack. Readers interested in familiarizing themselves with words and concepts such as Kerberos, Denial-of-Service (DOS) attacks, and script kiddies may benefit from this chapter.

In "Managing Web Site Performance and Reliability," Ross Lumley discusses strategies and techniques used to increase the performance of a Web site and increase uptime. Concepts such as scalability, Internet traffic managers, and load balancing are discussed in terms of e-commerce, though these concepts have relevance for any library systems office responsible for its organization's Web services. Various types of load balancers and implementation schemes conclude the essay.

The final chapter, "From Web Log to Data Warehouse: An Evolving Example" (Artz), is a brief introduction to first the concept of data warehousing, and then a few of the methods used in data mining. Though every Web server in use today has the capability of logging -- with great detail -- the Web traffic and visits made by every user, the ways in which administrators and Web page authors can benefit from this information are not always clear. Artz describes several methods used in data warehousing such as dwell time (time spent by a Web site visitor viewing each of the various pages found on the site) and length of that total visit, and then applies data mining techniques in order to gather some practical information, such as a visual representation of Web site traffic.

Though *Managing Internet and Intranet Technologies in Organizations* may be a good introduction to many of the various issues surrounding the Internet and Intranets, electronic commerce, security, and data warehousing, most library staff and their IT support personnel will find more practical information elsewhere.

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REVIEW OF: Lisa Ann Petrides. (Ed.). Case Studies on Information Technology in Higher Education: Implications for Policy and Practice. (2000). Hershey, PA: Idea Group Publishing.

By Aimée deChambeau

Petrides' book presents a series of case studies that explore ways in which information technology is integrated into various aspects of higher education. Each case study addresses an issue common in higher education and offers effective solutions. Cases include analyses of implementations at specific institutions, research-related studies, and point-of-view cases that examine information technology-related changes in higher education.

Each chapter presents a specific case study within four thematic sections. Individual case studies can be used on a stand-alone basis, or each section read to form an impression of the impact of information technology on that particular facet of higher education. The thematic sections are: planning and management processes; impact on people and culture; teaching and learning; and reflections on a changing environment.

The chapters all begin with a set of open-ended questions intended to guide the reader into the chapter. The chapters also end with a set of discussion questions that can be used to inspire a dialogue among people who have read that chapter. The case and discussion questions are well thought out and allow readers to gain more insight from the chapter itself. The questions make the book particularly useful for teaching applications, as well as focus group and committee discussions.

Planning and Management Processes

The case studies in the first section focus primarily on the design and implementation of administrative systems and the accompanying decision processes. Policy implications in the development or selection of campus-wide integrated systems are presented and discussed. Specific types of systems addressed include administrative and course management systems, Web-based course tools, and the integration of distance learning into the mainstream of academic culture.

Section I reveals a need for the planning and management processes at the institutional level to change and grow as the use of information technology within an educational setting advances.

Impact on People and Cultures

The case studies in the second section cover a wide range of topics, from Americans with Disabilities Act-complaint design of Internet-based instruction, to the effect of information technology on the communications involved in strategic change processes and administrative culture.

Each of these chapters addresses a situation in which people and institutional culture meet with information technology at one level or another. As stated in the introduction to the book, these chapters when read together "demonstrate the spectrum of similarities and differences [that] the impact of information technology [can have] on an institution's people and culture" (p. 2).

Teaching and Learning

One of the stated purposes in Case Studies on Information Technology is to bring the primary mission of higher education, i.e., teaching and learning, back into focus with respect to information technology. While this section does illustrate various uses, implementations, and outcomes of integrating information technology into teaching and learning, it is somewhat leaner than one might expect if teaching and learning

were a primary focus. This section illustrates ways in which information technology has an impact on collaborative processes, content development by students, and critical thinking in both physical and virtual classrooms.

Reflections on a Changing Environment

The final section of this book is comprised of chapters that explore reasons why educational institutions may be resistant to change, and the ways in which they must prepare in order to train a more diverse set of students to enter the new knowledge-based economy. Finally, the Reflections section is intended to open a discussion on ways in which higher education might redefine itself so as to take the lead in working with information technology in the administration, teaching, and learning of higher education, rather than simply reacting.

This book provides insight into the unique problems that institutions experience when adapting to new uses of information technology. It also outlines solutions that any of us might adapt in our own organizations. The greatest strength of Petrides' book, however, is how she has conveniently provided mechanisms for drawing upon the individual cases or sections as conversation starters. While the cases would be important and useful to students in an information technology or educational administration course, they are perfect for stimulating discussion in faculty and staff focus groups or committees called together to deal with any of these issues.

While Petrides' book is unique in discussing the four major areas affected by information technology in education in a single volume, similar books of interest include:

- *The Future Compatible Campus: Planning, Designing, and Implementing Information Technology in the Academy* (Oblinger & Rush, eds., Bolton, MA: Anker Publishing, 1998) focuses on using information technology to enhance an institution's effectiveness in reaching its goals.
- *Information Technology in Higher Education: Assessing Its Impact and Planning for the Future* (Katz & Rudy, eds., New Directions for Institutional Research, San Francisco: Jossey-Bass, 1999) deals primarily with campus-wide information systems and management, with a single chapter on the impact of IT on teaching and learning.
- *Technology and Higher Education* (Enghagen, ed., Washington, D.C.: National Education Administration, 1997) looks mainly at technology in teaching and learning, but includes an interesting section on the legal rights and responsibilities of faculty as they make use of IT in their work.
- *Integrating Technology on Campus: Human Sensibilities and Technical Possibilities* (Anandam, ed., San Francisco: Jossey-Bass, 1998) contains chapters which address both planning for the organizational change required by technology, as well as human/cultural aspects of integrating IT into a higher education institution.

Case Studies on Information Technology is recommended for college and university library collections supporting an organization undergoing change caused by information technology, or supporting coursework in education, administration, or information technology. It is also recommended for personal collections of higher education administrators and policy makers.

Note that *Case Studies on Information Technology* is available in print as well as on-line through netLibrary(TM).

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Review of: Lee Purcell. CD-R/DVD Disc Recording Demystified. (2000). New York: McGraw Hill.

By Jameson Watkins

Now that Compact Disc-Recordable drives (CD-Rs) are rapidly becoming a standard piece of equipment in the home or office PC, replacing or co-existing with Compact Disc-Read Only Memory (CD-ROM) drives, the need to understand best practices in using these devices has become important. As the title suggests, this book introduces the novice to both the practice and theory of "burning."

The text was designed to allow the reader to jump around; the chapters don't build on knowledge acquired in previous chapters. Sections include a history of the compact disc; an overview of CD-R and Digital Versatile Disc (DVD) technologies; CD and DVD standards; recording and duplicating equipment; recordable media; authoring techniques; interactive media; and printing and packaging of CD media. The first section of the book is a fascinating look at the history of the compact disc and places it in context with other storage media like magnetic tape and hard disks.

Chapter two provides an overview of the technology that I found to be the most interesting part of the book. It details the methods of how lasers are used to literally burn small pits into an organic dye layer of the disc, which in turn indents a thin layer of metal, most often gold. The metallic layer of the disc, coated in a protective lacquer, is what the CD-ROM laser reads, the valleys that translate into 1s and 0s. This is accomplished by measuring the amount of time it takes for the laser to reflect back from the depths of a pit versus the normal level of the disc (called a 'land'). DVDs operate on the same principle, but they allow for the laser to hit the CD at various angles, thus greatly increasing the amount of information available on essentially the same surface. A further discussion of transfer rates is also interesting in this section.

Understanding the various subsets of CD media is important to what you're trying to accomplish with it, and the author does a good job in explaining the differences between CD-Rs, CD-RWs (ReWritable), DVDs, DVD-Rs, and DVD-RAMs.

Unless you make a living creating interactive media on compact disc or plan on writing your own CD data extraction tools, the sections detailing the various CD standards contain too much detail. It's enough to know that standards exist and that developer tools follow them.

Much of the book comprises overviews of various types of equipment, from consumer-oriented single disc burners to large-scale CD replicators and advice on selecting the right piece of equipment for the desired outcome. As someone who is interested in CD recording mainly for copying MP3 audio files and backing up personal files, this was overkill. The Adaptec software accompanying my HP 8100 series CD-Writer Plus and a freeware audio application have been all I've needed to hit the ground running. But if you need to understand CD recording from a true business standpoint, this may be useful information. The author does

a good job explaining the underlying technologies you need to understand, including Small Computer System Interface (SCSI), Universal Serial Bus (USB), firewire, and ATAPI Intelligent Drive Electronics (IDE) interfaces; how onboard buffers affect transfer rates; and even the type of cabling required.

I tend to discount any book that discusses specific software applications as much as this one does, as the printer's publishing schedules and software development schedules are very different -- in the time a typical book is published, there could literally be two significant version updates to a piece of software, making the book's review of it inaccurate and at times worse than not having any review at all. But, when taken as a whole, it gives the novice a good understanding of the capabilities of the available software at the time of printing.

After you've mastered a CD, the next step is production. How many CDs do you intend to produce? How will you package them? The last few chapters deal with contracting with a commercial replicator to create a run of a few hundred to thousands of CDs, and advice on preparing artwork for printing labels and CD jewel case inserts. Many CD authoring tools come with built-in wizards for printing, so much of the information, such as a figure depicting the printable areas of a CD, is wasted. For the typical home and light business user, this section too may be overkill. If you're working with a graphic artist to produce a professional, commercial product, though, there are some useful considerations to pass along to those who may be working in their graphic design tools of choice.

Overall, I would recommend this book for those interested in getting their feet wet with advanced CD recording techniques. Most people will not need the background behind the technology and the authoring tips and advice offered, but for the enthusiast and budding electronic media author, this is a great introduction.

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