

# Preface

The ubiquitous nature of the Internet is dramatically revolutionizing the manner in which organizations and individuals share information. Developed out of necessity during the cold war, the Internet was created as a means to help governmental institutions and collegiate institutions send documents and research materials electronically (Williams et al., 1999). Over 30 years it has grown slowly and painstakingly; though vast quantities of information existed on this “network of networks,” it was so scattered and disorganized that finding anything taxed even the most computer literate devotees. The developments that made the Internet a “25-year overnight success” were the creation of HTML (Hypertext Markup Language) and the development of server/browser software to view the interconnected documents. It is this layer of the Internet architecture, the Web, which has become synonymous with the Internet. Users access information on the Web, or “the Net,” by simply pointing and clicking on key words or images linking individual or organizational home pages. New business and personal applications are being developed on a daily basis, and the number of people using the Internet (“users”) is increasing exponentially with each passing day. At the end of 2000, there were an estimated 407.1 million people “surfing the Web” (Nua Internet Surveys, 2000) world wide; United States users comprised almost 153.84 million, or over 55 percent of the US population.

The Internet is having a dramatic impact on the scope of business applications and has become the foundation for the world’s new information infrastructure. Technological advancements and the promise of cost reductions have set the stage for the emergence of the World Wide Web as a vehicle for electronic commerce (e-commerce). Conservative estimates forecast that Internet generated revenue will reach approximately US \$300 to \$360 billion by the year 2002 (Hoffman et al., 1999; Hinde, 1998). Consumers worldwide use the Web to acquire information, find and compare products, and purchase these products. The Web is a conduit for transactions between businesses and consumers as well as between businesses and other businesses. It has allowed business to compete and thrive, succeed or perish in an environment that is free of geographic limitations (Kannan et al., 1998). Ninety million people utilize it to exchange information or transact business around the world (Hof et al., 1998), linking directly to suppliers, factories, distributors, as well as customers.

The business explosion on the Net has made Internet usage a significant activity in firms and most organizations are grappling with the many complex issues triggered by this explosion (Judge, 1998; McWilliams & Stepanek, 1998). A recent survey of 300 United States corporations found that, despite recognition of the importance of the Web, the majority of companies were unclear about their Web business strategies and few companies had definitive plans for the formulation of such strategies (Melymuka, 2000). The development of business models, systems to benchmark progress, and strategic plans is critical for the success of organizations attempting to utilize the Web as an effective business tool (Jutla et al., 1999; Rao et al., 1998). Many business analysts and academics feel that this is the start of a continuing paradigm shift in the way organizations conduct business (Palmer & Griffith, 1998; Clark, 1997); the business of doing business is changed. Information intensive industries like financial services, entertainment, health care, education, and government are particularly good candidates for this business model transformation. The Internet has the potential to boost the rate of innovation by increasing the speed at which ideas spread among businesses and across countries. Worldwide business-to-business e-commerce is estimated

to rise to \$3.5 trillion in 2003 from just over \$1 trillion in 2001 (Mandel & Hof, 2001).

The millions of businesses around the globe increasingly use the Internet as a tool for e-commerce, marketing, supply chain management, remote site connectivity, and customer support. Users are able to:

- Circulate product and company information at an increasing rate and range.
- Communicate instantly around the globe, sharing information with partners, suppliers, customers, and other stakeholders.
- Lower the costs of providing information and services.
- Leverage the power of electronic commerce and multimedia applications in the competitive marketplace.

However, the Web is more than a commercial exchange channel; it provides access to the world's biggest playground. Just as the Internet transforms business activities, it changes personal lives as it is integrated into a myriad of facets in everyday life (Cappel et al., 1996). Individual users take advantage of the many social and commercial opportunities, utilizing the Web to keep in touch via e-mail, to meet people in chat rooms, to shop online, to play games, and to find movie listings and sports scores. So why should employers be concerned about personal Web usage? Many employers are coming to the painful realization that the boundaries between personal and work Web usage are increasingly fuzzy and work time versus personal time is not as clearly delineated as it was 10 years ago. A study conducted in a manufacturing firm found that in a typical 8-hour working day, over 250,000 Internet sites were accessed by a workforce of 386 employees. Of particular concern was the discovery that approximately 90% of the accessed sites were non-work-related (LaPlante, 1997). This rapid growth and increasing importance of the Internet represents a significant development and is prompting a growing interest in understanding and managing Internet usage at work (Cronin, 1996). The cost of ignoring this phenomenon can be enormous. In addition to the problem of productivity loss, Web surfing can also clog networks, resulting in slower access for legitimate business users. Possibly even more significant, the Internet opens up companies to confidential information leaks and litigation on offensive material. Understanding and solving such problems have increasingly become a major priority for today's companies.

Many organizations attempt to address these issues through the formation of numerous guidelines and policies regarding Internet usage. A recent survey on employee misuse of the Internet at work found that over 84% of the companies surveyed had some form of Internet access policy in place (Saratoga Institute, 2000). Yet that same survey found that those policies have met with limited success in effectively managing employee Internet usage behavior: "More than 60 percent of companies have disciplined—and more than 30 percent have terminated—employees for inappropriate use of the Internet." One of the main reasons many of these policies fail to achieve their intended results is that they fail to adequately understand the nature of the problem. Akin to a doctor treating the symptoms, but not the illness itself, the majority of the companies focus only on the legal aspect of usage behaviors, and while this is a significant aspect, it is but one dimension. The social and ethical aspects of the issues surrounding the Internet are just as significant and failing to take into account the multidimensional nature of the Web reduces the effectiveness of policies. The business world is not alone in its confusion regarding the Internet. Understanding the complex variables which frame ethical business practices, consumer usage, business applications, and social dimensions of the Web, is an important issue which researchers in the field of

information systems, as well as management, marketing, psychology, sociology and a host of other academic disciplines have only recently begun to address (Chatterjee & Sambammurthy, 1999).

The World Wide Web has rapidly become an integral part of society. Applications are taking years and sometimes months to develop and disseminate rather than the decades it took for other technologies in the past. To achieve 50 million users it took radio 38 years, for television 13 years and for the Internet 4 years. The accelerated pace of change means that the legal, social and ethical frameworks governing and guiding Internet usage lag behind the usage. The Web site Napster.com is a popular current example. Utilizing the Web, Napster software allowed users to download copyrighted material without charge. The Web site became as controversial as it was popular. Downloading music was acceptable socially, of questionable legality and yet it was unethical by most standards to take the “product” of an artist’s labor without compensation. Yet, millions of users frequented the site. To further complicate the issue, what are the implications for organizations when the downloading from Napster occurs during work time or with company owned computers?

This example also illustrates the problem of relying strictly on governmental laws and guidelines. As is the Napster case, many times no applicable law exists. As a result of the complexity of the Web and the explosion of Web sites and commercial applications, governmental legislation and legal precedence trail behind usage. Thus, ethical guidelines and self-governance are even more important. The world is now faced with a new “cyber-frontier” which demands a similar obligation of both individuals and organizations, and furthermore the legal, ethical, and social issues of Internet usage are global issues. While early Web usage was primarily focused in the United States, it is now a worldwide phenomenon. In 2000 about 49% of the Internet population is non-English speaking; by 2003, 75% of the Web population is expected to be non-English speaking (Global Reach, 2000). In 1999, the United States accounted for 62% of worldwide e-commerce spending while, in 2003, 56% of e-commerce transactions are expected to be conducted outside of the United States (“As the Net,” 2000). In terms of US dollars, global e-commerce is forecasted to be worth \$6.9 trillion annually by 2004, with online buyers in North America accounting for \$3.4 trillion annually (WITSA, 2000).

Openness is the most critical property of the Internet. Although Internet usage and microcomputer usage employ similar technological media (i.e., microcomputers), the pervasive nature of the Web opens up the boundaries of an organization. Microcomputer usage, on the other hand, is a more closed system, with usage usually physically and socially confined within the organization. With the Internet, information can flow more freely between the organization and the environment, thus enlarging the sets of people who interact, raising ethical questions about usage and content, and increasing organizational liability for the misuse of information. Thus, the benefits of Internet connectivity are coupled with risks.

In this volume, we have collected papers that address a variety of social, legal, and ethical issues on Internet usage worldwide. The central theme is how do organizations identify and manage a balance between the benefits and risks of the Internet across individuals, organizations, and societies. Gaining an understanding of the factors that lead to Internet usage aids in setting the boundaries of appropriate Internet behaviors. Once we increase our understanding of the consequences of Internet usage, we can be better prepared to build upon our knowledge of positive consequences and avoid negative consequences. Finally, we need to ask how systems and policies help organizations align individual usage with business priorities to manage the social, ethical, and legal aspects of the Internet, not just in the United States, but also in other parts of the world.

## **Section I: Antecedent Factors Leading to Individual Internet Usage**

The antecedent factors leading to individual Internet usage are examined in Section I. The first chapter, *“Understanding Senior Executives’ Use of Information Technology and the Internet”* by Guus Pijpers, begins from the position that senior executives have not committed themselves to information technologies, and that the management of the benefits and risks of the Internet depend, in large part, on senior management leadership. The author proposes interventions to facilitate senior executive adoption and acceptance of a new IT tool, an information system or the Internet. In chapter 2, *“Predictors of Internet Usage for Work Tasks,”* Lyndal Stiller-Hughes and Ivan Robertson discuss both person and situation factors which are associated with higher Internet usage as well as positive impact on individual work outcomes. They argue that the implementation of the Internet into the workplace is analogous to other forms of organizational change where the key component of successful change is understanding the social nature of the workplace. Chapter 3, *“Factors Influencing Web Access Behavior in the Workplace: A Structural Equation Approach”* by Murugan Anandarajan and Claire Simmers, examines the antecedent and motivational factors impacting accessing work-related Web sites and personal Web sites in the work environment. The findings indicate that perceived ethical beliefs is a key intervening variable linking antecedent variables with Web usage. In chapter 4, Uzoamaka Anakwe discusses *“Internet Usage in Sub-Saharan Africa,”* specifically citing examples from Nigeria, Ghana, and Kenya. She provides background information on Internet usage in these countries and the factors that influence Internet usage. The dominant issues relating to the role of the government and nongovernmental organizations in facilitating Internet usage in these countries are examined.

The last two papers in Section I examine how organizations manage Internet issues from external users of their systems, specifically e-commerce customers. In chapter 5, *“E-commerce System: An Examination of User Experiences of the E-commerce Site With the Standard User Interface,”* Shin-Ping Liu and Dennis Tucker investigate how an individual’s perceptions of the e-commerce standard navigation system would influence the individual’s decision to accept these e-commerce sites for online shopping purposes. In chapter 6, *“Factors Affecting Behavioral Intentions to Adopt Electronic Shopping on the World Wide Web: A Structural Equation Modeling Approach,”* Bay Arinze and Christopher Ruth show that factors such as perceived usefulness, intrinsic motivation and perceived information privacy play a significant role in influencing Web shoppers’ behavior.

## **Section II: Consequences of Internet Usage**

The consequences of Internet usage are the focus of the second section of this book. The first of the four chapters in this section is entitled *“Organizational Impacts and Social Shaping of Web Management Practice.”* In this chapter, Kristin Eschenfelder describes the results of a multi-case study exploring the problems of post-implementation management of Web information systems. The author argues that organizations must identify parties responsible for the maintenance of content and provide incentives to them for maintaining Web systems. Chapter 8, entitled *“Internet Gambling in the Workplace,”* by Mark Griffiths outlines the major issues surrounding gambling in the workplace (including types of gambling at work and implications for employers) before going on to examine the issues raised by how the Internet facilitates gambling. In chapter 9, *“Internet User Satisfaction, Job Satisfaction, and Internet Background: An Exploratory Study,”* Claire Simmers and Murugan Anandarajan examine the relationship among Internet user satisfaction, job satisfaction, and users’ Internet background. They report that Internet user satisfaction and job satisfaction are positively related and that self-training is a key variable in both user satisfaction and job

satisfaction. Chapter 10, *"The Measurement of Telecommuting Performance"* by Magid Igbaria, Patrick Devine and Eunyoung Cheon, presents a new approach to measuring telecommuting activities.

### **Section III: Development of Internet and System Policies**

Section III is concerned with the development of Internet and system policies. The first chapter in this section, *"Classifying Web Usage Behavior in the Workplace: An Artificial Neural Network Approach"* by Murugan Anandarajan, proposes the use of a behavior-based AI system to classify employee Web usage behavior. Two artificial neural networks incorporating genetic algorithm techniques are developed. The output of this intelligent system can be extremely beneficial to managers in designing effective Internet security programs. In chapter 12, *"Managing Large Modules—E-mail or Web Sites,"* Elayne Coakes and Dianne Willis address issues concerning the suitability of particular media as mass communication tools in a higher education setting in the United Kingdom. It looks first at the use of e-mail as a communication method for managing two large modules. The paper then goes on to examine the use of a Web site to provide a mass communication method more suited to the needs of both the staff and the students. In chapter 13, *"Managing E-business: Security Issues and Solutions,"* authors Keng Siau and Shane Meakim investigate the need for information security and privacy and the role that organizations have in managing the legal risks through security measures such as PKI and passwords. In chapter 14, *"Reducing Legal, Financial, and Operational Risks,"* Claire Simmers and Adam Bosnian explore how Web and e-mail usage can be aligned with business priorities by Internet policy management which integrates an enterprise-wide written Internet/E-mail usage policy, filtering/monitoring software, and enforcement. This is followed by chapter 15, *"Universal Site Accessibility: Barrier Free For All"* by Beth Archibald Tang, who discusses the importance of educating Web designers about the different regulations and industry standards, as well as helping Web designers understand how accessibility translates into good business, such as improved communication with clients and customers. In chapter 16, *"An Accounting Framework for Identifying Internet Abuse"* Asokan Anandarajan proposes the use of an activity-based costing system for budgeting the costs associated with Internet usage. The costs thus budgeted can then be compared to actual costs to arrive at a variance for better control policies.

The last two chapters focus on sociotechnical systems issues. In Chapter 17, *"Web Management and Usage: A Critical Social Perspective,"* Steve Clarke critically reviews both technology-based and human-centered approaches to information systems, followed by an examination of the Internet from a social theoretical perspective. He concludes that Web management should be examined within a social framework. In chapter 18, entitled *"Fuzzy Boundaries, Strange Negotiations: Problems of Space, Place and Identity in Cyberspace,"* Andrew Wenn raises our awareness of how technology and humans interact and how the richness and complexity of social interactions are enhanced in e-mail usage.

## References

- Anonymous, As the net goes global, U.S. e-commerce dominance slips. (2000). *CTO FirstMover*, September, S16-S17.
- Cappel, J. and Myerscough, M. (1996). World Wide Web uses for electronic commerce: Toward a classification scheme. Paper presented at the *Association for Information Systems 1996 Americas Conference*, Phoenix, Arizona.
- Chatterjee, D. and Sambamurthy, V. (1999). Business implications of Web technology: An insight into usage of the World Wide Web by US companies. *Electronic Markets*, 9, (2).
- Clark, B. (1997). Welcome to my parlor...market. *Manage*, Winter, 11-25.
- Global Reach. (2000). *Global Internet Statistics* (by Language). Available on the World Wide Web at: <http://www.glreach.com/globstats>. Accessed May 5, 2001.
- Hinde, S. (1998). Privacy and security—The drivers for growth in e-commerce. *Computers and Security*, 17, 475-478.
- Hoffman, D., Novak, T. and Peralta, M. (1999). Building consumer trust online. *Communications of the ACM*, April, 42(4), 80-85.
- Internet Usage Statistics. (2000). *NUA Internet Surveys*, November. Available on the World Wide Web at: <http://www.nua.net/surveys>.
- Jutla, D., Bodorik, P. and Wang, Y. (1999). Developing Internet e-commerce benchmarks. *Information Systems*, 24(6), 475-493.
- Kannan, P., Chang, A. and Whinston, A. (1998). Marketing information on the I-Way. *Communications of the ACM*, March, 41(3), 35-43.
- Melymuka, K. (2000). Survey finds companies lack e-commerce blueprint. *ComputerWorld*, April 17, 38.
- Nua Internet Services. (2000). *Internet Usage Statistics* November. Available on the World Wide Web at: <http://www.nua.net/surveys>.
- Palmer, J. and Griffith, D. (1998). An emerging model of Web site design for marketing. *Communications of the ACM*, March, 41(3), 45-51.
- Rao, H., Salam, A. and DosSantos, B. (1998). Marketing and the Internet. *Communications of the ACM*, March, 41(3), 32-34.
- Saratoga Institute. (2000). *Survey on Internet Misuse in the Workplace*, January 11. David Greenfield.
- Williams, B., Sawyer, S. and Hutchinson, S. (1999). *Using Information Technology*, Third Edition. Richard D. Irwin, Inc., 307-353.
- World Information Technology and Services Alliance—International Survey of e-Commerce. (2000). *How Ready are World Markets for Electronic Commerce?* Available on the World Wide Web at: <http://www.witsa.org/paper/EcomSurv.pdf/>. Accessed May 5, 2000.