

Part VI introduces still another version of the gateway concept—the Information Arcade at the University of Iowa, which is directed by another of our authors, Anita Lowry—and an educational software package—an electronic book—called *Who Built America? From the Centennial Celebration to the Great War of 1914*, which was produced by Roy Rosenzweig and Steve Brier, that is one of the most interesting, from a pedagogical perspective. Finally, in the postscript Lawrence Dowler tries to explicate the influence of information technology on the mission and goals of research libraries.

This is a distinguished group of scholars, academic administrators, and librarians, and their ideas, assembled in this volume, make an important contribution to the national discussion of the role of research libraries in the emerging information age.



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## Preface

*Gateways to Knowledge* is about change; it is about suspending old ideas without rejecting them and thinking anew about the purpose of the university and the library. It examines three basic and interrelated areas—teaching, learning, and research—exploring how concepts in each are changing. The point is not just to pay homage to what everyone readily acknowledges—that the purpose of the library is to support teaching, learning, and research—but to understand what the transformation of these basic concepts of higher education means for libraries. Since old terms and definitions no longer fit comfortably the emerging reality of the university, they cannot determine the role of the library within it. This collection of essays examines the influence of digital technology on teaching, learning, and scholarly communication and suggests some ways the library might respond.

The conference at which these articles first were presented posed a set of questions that aimed at curbing the participants' inevitable tendency to stray across what is still an open landscape. I have organized these papers into six parts and a postscript and have supplied headnotes to each part that introduce the principal themes suggested by the title of each part—a structure that reflects the different parts of the discussion about higher education and the library. But readers, like the authors of these essays, may find their attention wandering across these boundaries to compare what is being said with a parallel or contrary opinion suggested in an essay in another part. This suggests, of course, the connect-edness and complexity of the cultural forces—the hypertextual connectedness—that are reshaping higher education. Writing these

headnotes helped to clarify and deepen my own understanding of these essays, and I hope readers will find them useful.

The first essay, by Billy E. Frye, provides a helpful overview of the forces affecting universities and libraries today. He sets the stage for succeeding chapters by asking the question, Whither libraries? within the context of the larger question, Whither universities and higher education?

In the second part, “Changing Scholarship: Influences on Teaching and Research,” Patrick Manning and Anthony Appiah look, albeit briefly, at an issue too little appreciated in terms of its impact on teaching and research and therefore on libraries: the changing patterns of research and the variety of resources now needed to support it. In a sense, changes in the nature of scholarship and research anticipated and created a climate for accepting many of the changes we now attribute to information technology. How, for example, have changes in research expanded the sources now needed for research? What effect does the expansion of these sources have on the basic mission of the library? How can the library improve access to these sources regardless of form, genre, or location? What is the library’s role in managing and providing access to these varied sources?

The third part is entitled “The Gateway in Research and Scholarly Communication.” What emerges from these essays by physicist Paul Ginsparg, social scientist Richard C. Rockwell, and humanist John Unsworth is a striking set of parallels and subtle differences in understanding the influences of information technology on three areas of intellectual inquiry. A fundamental question is, How does information technology alter the process of scholarly communication? How should the gateway library increase access to research data and information in each academic area? What are the implications for doing so? What are the advantages of library participation in the development of scholarly databases, electronic texts, and other sources for scholarship and instruction? How can the library provide a locus for experimentation and a collaborative environment for scholars, students, and librarians?

The fourth section, “Concepts of the Gateway: Libraries and Technology,” contains themes that recur in nearly all of the essays in this book. But these four essays by Lawrence Dowler, Richard C. Rockwell, Jan Olsen, and Peter Lyman envision the library as gateway from different perspectives: What is the rationale for a gateway library, and what are

the reasons for developing gateway services and facilities? What factors combine to produce the need for such an array of services? How does information technology affect the basic mission of the library, and does the gateway provide an appropriate response?

In the fifth section, “Technology and Education: The Role of Libraries in Teaching and Learning,” Richard A. Lanham, Karen Price, and James Wilkinson also look at the future of libraries but primarily from the perspective of how libraries can affect teaching and learning during the transition from a culture of print to the digital age. What is the role of the library in teaching students and scholars in an information-rich environment? Are there ways the library can improve the information literacy of students? Are there fundamental differences between electronic information and traditional print sources that require different services for teaching and learning? Can information technology, especially interactive multimedia, improve learning?

The sixth section, “Tools for Learning,” also focuses on teaching and learning but with an eye toward creating a particular kind of library environment or designing specific tools for learning. In it, Anita Lowry,\* Roy Rosenzweig, and Steve Brier consider questions such as: What should be the role of librarians in evaluating electronic information? How can or should the library support faculty in developing courseware or information sources for courses? Is this an appropriate role for the library, and if not, who should do it?

The boundaries provided by these six groupings are, like those of the conference, somewhat artificial and certainly malleable. Readers may question the placement of a chapter in a particular part. The breadth of Lanham’s and Lyman’s essays, for example, defies easy categorization; Lyman might just as easily been grouped with the essays on “Technology and Education,” and Lanham’s chapter would not have been out of place in part IV on “Concepts of the Gateway.” Anita Lowry and Jan Olsen could easily swap places, and Karen Price’s essay would have been equally at home in part VI on “Tools for Learning” or part IV on “Concepts of the Gateway.” This was true for many of the chapters included in this volume. The problem seemed particularly acute in Richard C. Rockwell’s original essay, and so he graciously agreed to split it in two essays, which explains why he appears in two different parts.

Of the four underlying concerns of this book, only information technology is addressed explicitly either in the chapters or in the framework used for organizing them. These four themes merit further discussion: the first two are the subject of the remainder of this preface, and the last two are discussed in the postscript. First, the original focus on how the library ought to respond to the continued growth of information technology has broadened to an exploration of higher education and the potential role of the library within it. Second, information technology, a powerful force for change, is unsettling traditional arrangements and old agendas. Gauging its effect and locating the new opportunities that it may offer for universities and libraries are recurring themes in this book. This attention to technology takes two forms: how technology creates opportunities for dramatically increasing access to information and enhancing scholarly communication and how digital information affects what people learn and the ways they learn. Third, the centrality of the library within the academic community is a recurring theme in many of these essays. This was not an idea I expected to encounter in a discussion of emerging networked information and distributed computing. What this may suggest is a heartfelt plea for someone, somewhere, to order the volatile world of electronic information and provide a way to turn information into knowledge. A final theme implicit in many of these essays is the nature and locus of problems facing universities and research libraries. It is striking that many problems do not result simply from deficiencies in technology but more complicatedly from institutional and organizational structures that cannot respond to changes—some brought on by technology—in academia. Problems can result from lack of strategic vision or planning, from uncertainty about the kind of personnel needed in the new information environment, from lack of clarity about who should be responsible for adding value to information to make it more useful, and from failure to understand the kind of instruction that students and scholars need to engage the new information structures. Technological change and its pace have cast an unforgiving light on the areas of the university where a shadowy rigidity has held sway.

It is appropriate, indeed essential, to begin a conversation about the future role of research libraries by looking first at higher education and universities. Although scholarship and libraries are interrelated, they tend to be regarded organizationally as separate and distinct; the library is all