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Educuase Leadership Strategy No 1: Preparing your campus for a networked future

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This book is part of a series on leadership strategies “designed to help university and college presidents and other top leaders in higher education understand and prepare for the impact of advanced networking on the institutions” (p.xv). It is interesting to review following what some have termed the “nuclear winter” in telecommunications industry, a book related to the networked future that was written, or at least conceived, in 1999, when enthusiasm for how electronic networks would change the world was at its peak. Although these authors, like many of us, might wish to temper the predictions made about the speed at which advanced networking would “break the access, performance and cost barriers that have in the past presented an insurmountable obstacle to the new vision of education”(p.1), much of the information and policy advice in the book has withstood the test of a short but turbulent time.

The book is true to its stated intent in that it takes a high-level, simplified and concise look at a number of issues relating to deploying advanced networks on, and between, university and college campuses. It avoids “techno-speak” and provides simple definitions of terms that senior administrators will be unable to avoid if they are going to make informed decisions in this area. An undauntingly sized book, it is clearly written and may be read in a reasonable period of time.

A group of nine authors with an impressive set of credentials as senior administrators in higher education institutions and advanced networks collaborated on this book. Its eight chapters deal with the history of the development of the educational advanced network in the US, its role in education, some specifics about online libraries, two explanatory case studies, and advice on how administrators can work both within their own institutions and with other agencies to facilitate the growth of networks on and between their campuses.

Chapter 1 provides clear definitions of a number of terms and descriptions of the tools that are commonly used in relation to online learning, including new collaborative applications such as learning management systems and shared learning object repositories. It goes on to describe the enhanced applications and opportunities that an advanced network can facilitate, compared to those accessed by the Internet that we know today. It further highlights social, economic, political, and policy implications that must be addressed if institutions are to fully participate in the networked future.

Chapter 2 selects one of the many aspects of higher education that will be affected by advanced networking, the library, and provides a balanced explanation of the challenges encountered in establishing a “virtual library.” It describes the current state of development, or lack thereof, of

digital libraries, the issues of converting legacy content to online format, and compares some costs of traditional and online collections and access. It outlines the many policy areas, such as copyright and intellectual property, that influence the development of such libraries, and closes with a brief discussion of the new role of libraries and librarians in a networked environment.

Chapter 3 presents a brief history of the development of the Internet in the US from its beginning 30 years ago as a Department of Defense project, through its stage as the National Science Foundation Network (NSFNet), to its commercial Internet status of today. It goes on to describe development and capability of today's US advanced research and education network – Internet 2. It discusses the issues related to deploying this advanced network among US higher education institutions with significant research mandates, its potential expansion to teaching institutions, links to sister networks globally, and the new layers of interoperable software and networking protocols that will have to be implemented to achieve this internetworking.

Chapter 4 provides a high level view of how to design an advanced network that is suitable for an institution's needs so that it can “maintain its currency and gracefully accommodate future advances” (p. 42). It talks frankly about design challenges and associated costs. It emphasizes the need to use standard building blocks and to plan continuously to assure a snug fit with institutional needs, finance and culture. It also highlights some ongoing, and often overlooked costs of running quality networks including provision of end-user support, retention of highly skilled but highly mobile technical staff, and assurance of network security.

Chapter 5 steps outside the individual campus to describe the roles of regional, national and international networks, pointing out the benefits which occur to campuses that collaborate in deploying and using such networks. The benefits of participation in a national and international network are demonstrated through descriptions of the outputs of prestigious communities of researchers who have utilized advanced networks to collaborate globally and obtain outcomes that would have been otherwise impossible to achieve in a single institution. The chapter argues that economies of scale almost dictate that institutions band together to provide the critical mass required to make networks affordable at a per unit basis, and concludes with a description of a potential role for regional networks in providing access to the broader learning community.

Chapter 6 provides a historical account of the role that the US government played in the development of the commercial Internet through its support of the original research networks. It emphasizes the importance of expanding Internet 2 beyond the some 50 research institutions and universities it currently connects to a much broader group of teaching universities, colleges and schools. It presents a rationale for state and national governments on the importance of a larger participation rate in the US, and an approach to achieve it through a combination of institutional, state and federal government initiatives.

Chapter 7 provides readers with two case studies of how two small baccalaureate-degree granting institutions were able to implement and deploy technology-enriched instructional environments by, among other things, providing all faculty and students with notebook computers and supplying nearly all classrooms with power and network connections at every seat. It discusses the prioritizing of institutional objectives to meet the financial realities of this decision, the change in institutional culture required, and the benefits and challenges both on and off campus of such a dramatic move. The chapter also contains a section on lessons learned by the administrators of these two institutions as they implemented these significant changes.

Chapter 8 offers a short review of primary information and arguments made by the authors in the previous chapters. Also discussed are initiatives that campus leaders can undertake in their institutions and in the broader educational community to encourage the growth of advanced networks in a manner that maximizes the benefits for all learners.

Drawing upon the extensive experience of the authors rather than literature, rather than an academic book, this is a practitioner's book. It is not a book for network managers, or librarians who already have significant portions of their services online. It is a book for senior educational administrators who were not so long ago professors of philosophy, chemistry, or English. It is a concise and easily read book, that addresses a number of the major policy issues that administrators will most likely face when they move their campuses to a more networked environment.

A reader might also be interested in how other aspects of institutional life might be influenced by advanced networks, e.g., the registrar's office, intellectual property and contractual agreements with faculty, and financial and administration areas, to name but a few. A quick review of the titles of the subsequent volumes in the series indicates that some of these topics might be introduced there.

When reading this book, administrators should realize that it is written from a US perspective. The examples and case studies are exclusively American, as is the discussion about the development, deployment and acceptable use policies of the current advanced network which all relate to Internet 2. Although many countries can trace the roots of the Internet to the US Department of Defense network, the evolutionary path of the growth of advanced research and education differ from country to country. How the sister networks of Internet 2, such as Ca*net 4 in Canada and GEANT in Europe have developed, which types of institutions might participate, and their acceptable use guide lines vary significantly from the US model. In Canada, for instance, a much broader set of institutions may join Ca*net 4. In general, an institution gains access to the advanced network through an ORAN that operates the giga POP. However, administrators in other countries who read this book should bear in mind that although laws, policies, and details of implementation differ from country to country, the underlying principles, policy areas and challenges presented in the book have relevance in many countries.

In conclusion, this book is a reasonable introductory primer to an area into which many are reluctant to tread.

