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Foreword

Multimedia technology and networking are changing at a remarkable rate. Despite the telecoms crash of 2001, innovation in networking applications, technologies, and services has continued unabated. The exponential growth of the Internet, the explosion of mobile communications, the rapid emergence of electronic commerce, the restructuring of businesses, and the contribution of digital industries to growth and employment, are just a few of the current features of the emerging digital economy.

The *Encyclopedia of Multimedia Technology and Networking* captures a vast array of the components and dimensions of this dynamic sector of the world economy. Professor Margherita Pagani and her editorial board have done a remarkable job at compiling such a rich collection of perspectives on this fast moving domain. The encyclopaedia's scope and content will provide scholars, researchers and professionals with much current information about concepts, issues, trends and technologies in this rapid evolving industrial sector.

Multimedia technologies and networking are at the heart of the current debate about economic growth and performance in advanced economies. The pervasive nature of the technological change and its widespread diffusion has profoundly altered the ways in which businesses and consumers interact. As IT continues to enter workplaces, homes and learning institutions, many aspects of work and leisure are changing radically. The rapid pace of technological change and the growing connectivity that IT makes possible have resulted in a wealth of new products, new markets and new business models. However, these changes also bring new risks, new challenges, and new concerns.

In the multimedia and technology networks area broadband-based communication and entertainment services are helping consumer and business users to conduct business more effectively, serve customers faster, and organise their time more effectively. In fact, multimedia technologies and networks have a strong impact on all economic activity. Exponential growth in processing power, falling information costs and network effects have allowed productivity gains, enhanced innovation, and stimulated further technical change in all sectors from the most technology intensive to the most traditional. Broadband communications and entertainment services are helping consumer and business users conduct their business more effectively, serve customers faster, organise their time more effectively, and enrich options for their leisure time.

At MIT, I serve as co-director of the Communications Futures Program, which spans the Sloan School of Management, the Engineering School, and the Media Lab at the Massachusetts Institute of Technology (USA). By examining technology dynamics, business dynamics, and policy dynamics in the communications industry, we seek to build capabilities for roadmapping the upcoming changes in the vast communications value chain. We also seek to develop next-generation technological and business innovations that can create more value in the industry.

Furthermore, we hope that gaining a deeper understanding of the dynamics in communications will help us not only to make useful contributions to that field, but also to understand better the general principles that drive industry and technology dynamics. Biologists study fruit flies because their fast rates of evolution permit rapid learning that can then be applied to understanding the genetics of slower clockspeed species, like humans. We think of the communications industry as the industrial equivalent of a fruit fly; that is, a fast

clockspeed industry whose dynamics may help us understand better the dynamic principles that drive many industries.

Convergence is among the core features of information society developments. This phenomenon needs to be analyzed from multiple dimensions: technological, economic, financial, regulatory, social, and political. The integrative approach adopted in this encyclopaedia to analyze multimedia and technology networking is particularly welcome and highly complementary to the approach embraced by our work at MIT.

I am pleased to be able to recommend this encyclopedia to readers, be they looking for substantive material on knowledge strategy, or looking to understand critical issues related to multimedia technology and networking.

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