

## Preface

Over the last decade the telecommunications industry has experienced rapid transformation. Many factors, such as digital convergence, wireless networks, deregulation, and globalization, have contributed to this transformation. Convergence across telecommunications and the Internet has caused major upheavals in the value chain of the telecommunications industry. Telecommunications convergence coupled with deregulation has created numerous opportunities and challenges for both incumbent telecom operators and new entrants. The convergence has put telephone companies in a fierce competition with cable TV operators for voice, data, and video services. Telephone companies are transforming their provision of voice and other broadband services to the Internet layered fiber-optic networks to embrace the IP-based telecommunications convergence. While some telecom operators build new networks, other operators offer services with networks of incumbent operators. The competition among these incumbents and new entrants will become fiercer in the future, and telecommunications planning and management become more important for telecom managers.

Among stakeholders, governments had a major impact on the industry's structure and competition through policies on licensing, mergers/acquisitions, and other regulations. Policy makers face challenges of facilitating competition into quasi-monopolistic markets, and at the same time, developing favourable conditions for the capital investments needed to sustain and improve the network infrastructure (Bauer and Bohlin, 2008). For emerging industries such as the mobile services industry, regulators have to deal with a wide variety of stakeholders. Further, as mobile technology operates in a dynamic environment and undergoes rapid changes, regulatory definitions become a moving target which implies that regulators should constantly acquire industry-specific knowledge over time (Tallberg et al., 2007; Ubacht, 2004). Consequently, regulation for the mobile industry becomes an extremely complex and involved undertaking for all stakeholders.

One of the most significant developments in the telecommunication technologies of the past decade is wireless networks. The wireless network industry is evolving at a very fast pace. The diffusion of mobile handsets and services has achieved spectacular growth in many countries around the world. WiMax and Wi-Fi have shown the potential to be a leading technology in the wireless industry for the service providers. While the third generation networks are deployed, the next generation networks are developing. The key feature of the next generation is an integration of different access networks (HSDPA, UMTS, LTE, GSM, Wi-Fi, Wi-Max, etc.) around a common IP.

The telecommunication market is shifting from a stable market to an increasingly user-driven market place. The telecom operators must have the ability to rapidly develop, deploy, and manage services to meet customers' dynamically changing needs. The success of a telecom operator depends on the operator's ability to understand and manage the organizational variables such as knowledge management, organizational climate, leadership, service quality, innovation and entrepreneurship, human resource management, and employee attitude.

According to the U.S. Bureau of Labor Statistics (BLS), jobs in telecommunications are projected to grow faster than other occupations in the coming years. The incredible growth of telecommunications technology and the demand for a new generation of telecommunications employees, managers, and leaders facilitated the offering of Telecommunications Management programs in many higher education institutions in the United States and around the world. Although new technologies and models are continually appearing, it is high time to take stock of the new knowledge in telecommunications planning and management. The *Handbook of Research on Telecommunications Planning and Management for Business* provides a repository for government policy-makers, researchers, and industry practitioners to share and exchange their policy and research ideas, theories, practical experiences, discuss challenges and opportunities, and present tools and techniques in all aspects of telecommunications planning and management.

This book is composed of 60 chapters and divided into 6 segments: Section I, Telecommunications Policy, which discusses various issues and recommendations for policy-makers and regulators in the telecommunications industry; Section II, Telecommunications Industry, which addresses competition, dynamics, and trends in the industry; Section III, Telecommunications Business Management, which discusses various business management topics such as organizational culture, management methods, customer management, investment, and practices; Section IV, Telecommunications Technology Management, which presents various technology management methods and techniques for security, protocol management, and new technology services; Section V, Telecommunications Technology and Applications, which addresses the state-of-the-art technologies, protocols, Web services, and implementation issues faced by telecom service providers; and Section VI, Telecommunications Network Design, which discusses methods, issues, and new trends in the network design. A brief introduction of each chapter follows.

**Section I: Telecommunications Policy**, consists of 6 chapters. Chapter I, “Static and Dynamic Efficiency in the European Telecommunications Market: The Role of Regulation on the Incentives to Invest and the Ladder of Investment” by Walter Distaso, Imperial College (UK), Paolo Lupi, AGCOM (Italy), and, Fabio Manenti, University of Padua (Italy), provides evidence of the effectiveness of European national regulatory authorities in applying the basic principles of the ladder of investment. The analysis discusses and compares the regulatory approach adopted in 12 European countries from January 2005 to July 2007. Chapter II, “Is Regulation a Roadblock on the Information Highway?”, by James E. Prieger and Daniel Heil, Pepperdine University (USA), covers the theoretical and empirical impacts regulation has on innovation. It presents empirical evidence that regulation dampens firms’ incentive to innovate in the telecommunications industry in general and the market for broadband Internet access in particular. Both product and process (cost reducing) innovations are discussed. Chapter III, “Reforms in Spectrum Management Policy” by Claudio Feijóo, Universidad Politécnica de Madrid (Spain); José Luis Gómez-Barroso and Asunción Mochón, Universidad Nacional de Educación a Distancia (Spain), presents the reforms in the radioelectric spectrum management mechanisms that are currently being drafted (or that are even being applied). In particular, the chapter assesses three major changes that are being considered: authorisation of the secondary market, usage of auctions for primary allocation, and full liberalisation of spectrum usage. Chapter IV, “Next Generation Access Networks and their Regulatory Implications” by Ricardo Gonçalves and Álvaro Nascimento, Universidade Católica Portuguesa (Porto) (Portugal), reviews the current discussion surrounding Next Generation Access networks (NGAs) and discusses some of the main regulatory challenges. Chapter V, “The Impact of Government on the Evolving Market Structure of the U.S. Wireless Telephony Industry” by Carol C. McDonough, Univer-

sity of Massachusetts Lowell (USA), discusses the impact of government on the market structure of the wireless industry which is regulated by the federal government. Chapter VI, “Shaping Regulation in the Australian Mobile Industry” by Indrit Troshani and Sally Rao Hill, University of Adelaide (Australia), employs qualitative evidence to investigate how regulation and legislation can affect mobile services in the Australian mobile telecommunications industry and proposes an innovative regulatory framework based on a co-regulatory approach.

**Section II: Telecommunications Industry**, consists of 9 chapters. Chapter VII, “Analyzing the Disruptive Potential in the Telecommunications Industry” by Stefan Hüsiger, University of Regensburg (Germany), covers the ex ante analysis of potential disruptive technologies. In this chapter, the theory of disruptive technology, the concept of disruptive potential and a method for applying this concept in a telecommunications planning and technology management context is presented. Chapter VIII, “Convergence of the Internet and Telecommunications” by John B. Meisel and Timothy S. Sullivan, Southern Illinois University Edwardsville (USA), provides a framework to explain the convergence of communications networks and analyzes key issues that confront public policymakers. One key competition issue, termed network neutrality, addresses the concern that the evolving broadband network architecture will enable network providers to favor the provider’s services or affiliated services at the expense of independent rivals. Chapter IX, “International Internet Interconnection Service in Asia-Pacific Region” by Moon-Soo Kim, Hankuk University of Foreign Studies (South Korea), focuses on current interconnection settlement arrangement models that disfavor ISPs and end-users in the Asia-Pacific region. After reviewing the Internet market and digital divide in the region, the chapter discusses the main current IIS issues between the Asia-Pacific and Western regions into 3 categories of concern: inequity, anticompetitive practices, and the threat of the “balkanization” of the Internet. Chapter X, “A Techno-Economic Analysis of Mobile Virtual Network Operators” by Dong Hee Shin, Penn State University Berks Campus (USA), examines cross-national data in order to identify possible factors related to the observable patterns of Mobile Virtual Network Operator (MVNO) penetration. The study conducts an economic assessment of market structure and environment for different countries’ MVNO penetration. Chapter XI, “Evolving Value Networks and Internationalization of National Telecommunication Companies from Small and Open Economies” by Riku Laanti, Fred McDougall, and Georges Baume, The University of Adelaide (Australia), focuses on the internationalization processes of national telecommunications companies (telcos) from small and open economies (SMOPECs) which have moved from a domestic monopoly to an actor within the global industry. Case examples are used to illustrate the internationalization processes of telcos from SMOPECs within the context of the whole industry value network. Chapter XII, “The Effect of Non-Market Strategies in the Mobile Industry” by Zulima Fernández and Belén Usero Sánchez, Universidad Carlos III de Madrid (Spain), analyzes the role of non-market actions (NMAs) in the competitive position of firms in the European mobile telecommunications industry. The findings of an empirical study confirming the effectiveness of legal actions as competition tools in the European mobile telecommunications industry are discussed. Chapter XIII, “Spatiality and Political Economy of the Global Fiber Optics Industry” by Barney Warf, University of Kansas (USA), reviews the historical development of this communications technology. The chapter discusses the spatial distribution of the world’s fiber lines, noting major transatlantic and transpacific markets and newer systems. Chapters XIV and XV “Digital Convergence and Home Network Services in Korea: Part 1 - Recent Progress and Policy Implications” and “Digital Convergence and Home Network Services in Korea: Part 2 – Business Models and Strategic Alliances” by Hyun-Soo Han, Hanyang University (South Korea); Heesang Lee, Sungkyunkwan University (South Korea); Yeong-Wha Sawng, Electronic and Telecommunica-

tions Research Institute (South Korea), categorize three classes of typical services and five industrial participants with regard to Korea's home network industry. These chapters investigate business interests of the industrial participants comprising convergent home network services, and explore the causes of conflicts among them. They discuss managerial implications and strategic alliance opportunities of the home network service providers in Korea. Strategic propositions for the success of the home network industry are suggested at the firm level with respect to three main converging home network services.

**Section III: Telecommunications Business Management** consists of 15 chapters. Chapter XVI, "Mixing and Matching Organizational Network Legitimacy Practices to China's Telecommunication Market" by Brian Low, University of Western Sydney (Australia); Wesley J. Johnston, Georgia State University (USA), presents a case research-based framework to describe an iterative and incremental process to help foreign telecommunications firms manage their network legitimacy. Chapter XVII, "Preliminary Knowledge Management Implementation in the Telco Industry" by Chin Wei Chong, Multimedia University (Malaysia); Siong Choy Chong, Putra International College (Malaysia), aims to create a unified model capturing and generalizing the different arrays of preliminary knowledge management (KM) implementation success factors in the telecommunication industry based on the studies in Malaysia. Chapter XVIII, "Activity-based Costing in the Portuguese Telecommunications Industry" by Maria Major, ISCTE – Business School (Portugal); Trevor Hopper, University of Manchester (UK), examines an implementation of an Activity-based Costing (ABC) system in a specific Portuguese telecommunications firm which provided international telecommunications services. The chapter explores how ABC was adopted and used to support decision-making and pricing strategies. Chapters XIX and XX, "The Role of Organizational Culture to the Management of Telecommunication Companies: I. Background and Motivation" and "The Role of Organizational Culture to the Management of Telecommunication Companies: II. Applications and Case Studies" by Antonios D. Kargas and Dimitris Varoutas, University of Athens (Greece), explain what organizational culture is and analyze its importance for the management. They present the theoretical link between organizational culture and a variety of variables, which affect organizational performance and efficiency. Chapter XXI, "Dynamics of Mobile Service Adoption" by Hannu Verkasalo, Helsinki University of Technology (Finland), discusses the adoption of mobile services. The study explores what drives the intention and actual use of some of the emerging mobile services, thus contributing to both industry and academic readers. Chapter XXII, "When Customer Satisfaction Isn't Good Enough: The Role of Switching Incentives and Barriers Affecting Customer Behavior in Korean Mobile Communications Services" by Moon-Koo Kim, Electronics and Telecommunications Research Institute (South Korea); Myeong-Cheol Park, Information and Communications University (South Korea); Jong-Hyun Park, Electronics and Telecommunications Research Institute (South Korea), explains the relationship between customer satisfaction and customer behavior using switching incentives and switching barriers. Chapter XXIII, "Telecommunication Customer Demand Management" by Jiayin Qi, Beijing University of Posts and Telecommunications (China); Yajing Si, Beijing Wuzi University (China); Jing Tan and Yangming Zhang, Beijing University of Posts and Telecommunications (China), proposes a method that telecom operators can use to estimate their customer demand and respond to their demand automatically. Chapter XXIV, "Telecommunication Customer Detainment Management" by Jiayin Qi, Yuanquan Li, Chen Li, Yingying Zhang, and Jing Tan, Beijing University of Posts and Telecommunications (China), proposes an integrated methodological system of telecommunication customer detainment management which includes the customer churn prediction and customer detainment management. It discusses customer detainment management strategies. Chapter XXV, "How to Plan for an Upgrading Investment in a Data Network?" by Frédéric Morlot and Salah Eddine Elayoubi, Orange

Labs (France), illustrates how a mobile data network operator can plan an upgrading investment to anticipate explosions of the demand, taking into account the expected profit and the customer satisfaction. The chapter then proposes and discusses two methods that help in making the decision: an actualization algorithm and a real option-like strategy. Chapter XXVI, “Telecommunication Investments Analysis: A Multi-Criteria Model” by Georgios Angelou and Anastasios Economides, University of Macedonia (Greece), deals with quantitative and qualitative analysis and integrates real options (ROs) and Analytic Hierarchy Process (AHP) into a common decision analysis framework providing a multi-criteria model for analyzing telecommunication investments in the deregulated business field. Chapter XXVII, “A Business Planning Framework for WiMAX Applications” by Rebecca De Coster, Brunel University (UK), introduces a business planning framework which identifies generic approaches for examining the market potential for WiMAX applications. Chapter XXVIII, “Adoption of VoIP Applications in Public and Private Organizations” by Nicoletta Corrocher, Bocconi University (Italy); Roberto Fontana, University of Pavia (Italy); Claudia Parlanti, Bocconi University (Italy), investigates the determinants of diffusion of VoIP applications in a sample of public and private organizations in Italy. Results suggest that organizations become more likely to adopt as time goes by, and that the decision to adopt is mostly affected by size and availability of financial resources. Chapter XXIX, “Intelligent Networking and Business Process Innovation: A Case Study Analysis of Home Box Office and Dell Computers” by Richard A. Gershon, Western Michigan University (USA), examines the subject of business process innovation which involves creating systems and methods for improving organizational performance. Special attention is given to the topic of intelligent networking which represents the combination of software, technology and electronic pathways that makes business process innovation possible for both large and small organizations alike. Chapter XXX, “Can M-commerce Benefit from Pervasive Computing?” by Stan Kurkovsky, Central Connecticut State University (USA), discusses a number of pervasive computing principles and illustrates how they have been implemented in mobile commerce applications. The chapter also presents new trends in developing context aware m-commerce services that tap into the power of Web 2.0 services and digital communities.

**Section IV: Telecommunications Technology Management** consists of 12 chapters. Chapter XXXI, “Basics of Telecommunication Management” by Katalin Tarnay, University of Pannonia (Hungary), familiarizes the reader with the main components, functions, and key terms of telecommunications management. Starting at the definition of telecommunications management, it presents the management functions, the managed objects, the management information bases, and the main management protocols in a simple understandable way. Chapter XXXII, “Telecommunication Management Protocols” by Katalin Tarnay, University of Pannonia (Hungary), presents the reader with the fundamentals of communication protocols in telecommunications management. It presents the most widely used protocol, the Simple Network Management Protocol (SNMP), the open system management protocols, and the mobile internet management protocols for Authentication, Authorization and Accounting (AAA). Chapter XXXIII, “Cellular Network Planning- Evolution from 2G to 4G” by Marc St-Hilaire, Carleton University (Canada); Samuel Pierre, École Polytechnique de Montréal (Canada), presents the characteristics and the architecture of each generation of cellular networks (1G, 2G, 3G and 4G). Then, it exposes different planning problems related to each generation followed by a short description of different solutions that have been proposed in the literature. Chapter XXXIV, “IP Address Management: Challenges, Solutions and Future Perspectives” by Faouzi Kamoun, University of Dubai (UAE), discusses the most important challenges in IP Address Management (IPAM) and attempts to address some of the solutions and best practices to tackle these challenges. The chapter underlines the need for organizations to adopt proven



IPAM best practices. Chapter XXXV, “Digital Cable TV Networks: Convergent Technologies, Value-added Services and Business Strategies” Ran Wei, University of South Carolina (USA) and Zizhong Zhao, Communication University of China (China), focuses on digital cable TV networks as a convergent network that provides broadcasting TV and radio, telecommunications services, and IP-based publishing and E-Commerce. This chapter examines the value chain and collaborative opportunities among the participants in the digital cable TV revolution. Chapter XXXVI, “Diffusion and Oscillation of Telecommunications Services: The Case of Web 2.0 Platforms” by Tobias Kollmann, Christoph Stöckmann, and Carsten Schröer, University of Duisburg-Essen, Campus Essen (Germany), focuses on the diffusion characteristics of Web 2.0 Platforms and provides management concepts for competition. The chapter shows that there is always a chance to capture a market or at least to grow against competition in a Web 2.0 setting. Chapter XXXVII, “The diffusion of WiMax Technology: Hurdles and Opportunities” by Phillip Olla, Madonna University (USA), discusses the potential of WiMax technology to deliver personal broadband and fixed Internet capabilities. The chapter applies components from the global diffusion of the Internet framework to analyze the current state of WiMax deployment. Chapter XXXVIII, “VoIP Quality and Security Issues for Consumers and Small Businesses” by David Bell, Pacific Union College (USA); Sunil Hazari, University of West Georgia (USA), reviews issues related to the quality and security of VoIP faced by consumers and small businesses. Chapter XXXIX “Emerging Security Issues in VANETS for E-Business” by S. S. Manvi, REVA Institute of technology and Management (India); M. S. Kakkasageri, Basaveshwar Engineering College (India), presents the emerging security issues in Vehicular Ad hoc Networks (VANETs) for E-Business, along with some of the solutions. Security issues discussed are authentication, trust, confidentiality, non-repudiation and detection of malicious users. Chapter XL, “Telecommunications Network Planning and Operations Management in an Academic Environment: The Case Study of the Aristotle University of Thessaloniki” by Sotirios K. Goudos, Angeliki Z. Agorogianni, and Zaharias D. Zaharis, Aristotle University of Thessaloniki (Greece), presents and discusses network management and planning issues in the Aristotle University of Thessaloniki, Greece. The network expansion and cost reduction case studies are discussed. It also discusses the migration analysis for future upgrades that will fully enable the use of emerging technologies such as Voice over IP (VoIP). Chapter XLI, “Planning of Wireless Community Networks” by Karoly Farkas, University of West Hungary (Hungary); Csaba A. Szabó and Zoltán Horváth, Budapest Univ. Tech&Econ (Hungary), discusses the applications, state-of-the-art technologies, planning methods, and business models for wireless community networks, and provides an integrated presentation of these essential parts with an ongoing digital city project in Hungary. Chapter XLII, “Human Factors for Business Mobile Systems” by David Golightly, University of Nottingham (UK), addresses human factors with particular relevance to developing and deploying business mobile systems. This chapter argues that it is critical to take an approach that puts users at the heart of a new technology or service development. This approach is presented as a three-stage model of context analysis, specification and design, and evaluation

**Section V: Telecommunications Technology and Applications** consists of 11 chapters. Chapter XLIII, “Towards QoS-Inferred Internet” by Mohamed Boucadair, Pierre Levis, and Pierrick Morand, France Telecom-Orange Labs (France), focuses on two issues: provider-to-provider agreements and enhancements to inter-domain routing protocol to convey QoS-related information. Chapter XLIV, “The Playout Control Management: An Issue for the IP Telephony Service Providers” by Mirko Luca Lobina, Luigi Atzori, and Fabrizio Boi, Università di Cagliari (Italy), proposes playout control management and planning strategies and compares the strategies IP Telephony Service Providers can choose with the aim of saving money and offering a better quality of service. Chapter XLV, “Open APIs and Protocols

for Services and Applications in Telecoms” by Nikolaos D. Tselikas, National Technical University of Athens (Greece); Georgia M. Kapitsaki, National Technical University of Athens (Greece); Dimitrios G. Makris, University of Peloponnese (Greece); Iakovos S. Venieris, National Technical University of Athens (Greece), discusses the role of open APIs and protocols for advanced service provisioning. Specifically, the role and the trade-offs in modern telecoms between open APIs and Protocols, that is OSA/Parlay APIs, JAIN APIs and SIP, are discussed. Chapter XLVI, “On the Management Performance of Networked Environments Using Web Services Technologies” by Lisandro Zambenedetti Granville, Ricardo Neisse, Ricardo Lemos Vianna, and Tiago Fioreze, Federal University of Rio Grande do Sul (Brazil), provides a comparison between different strategies of integrating conventionally managed network devices into Web Services-based management processes. Chapter XLVII, “Automated Fault Management in Wireless Networks” by Raquel Barco and Pedro Lázaro, University of Málaga (Spain), proposes a system for automated fault management in the Radio Access Network (RAN). Some methods proposed for auto-diagnosis are also discussed. Chapter XLVIII, “Modeling Intrusion Detection with Self Similar Traffic in Enterprise Networks” by Cajetan M. Akujuobi and Nana K. Ampah, Prairie View A & M University (USA), proposes IDS technique, the novelty of which lies in its efficiency and ability to eliminate most limitations of existing IDSs and IPSs, thereby ensuring high-level network protection. Chapter XLIX, “High-speed Multimedia Networks: Critical Issues and Trends” by Dimitris Kanellopoulos, University of Patras (Greece), presents high-speed networking technologies and standards such as ATM, Fast Ethernet, 10 Gigabit Ethernet, SONET, RPR, PBT, PBB, T-MPLS and Optical Transport Network (OTN). It considers the requirements imposed to high-speed networks by multimedia applications and analyzes crucial issues of high-speed networking such as bandwidth problems, discarding policies and fast broadcast. Chapter L, “Emerging Telecommunications Technologies: Cognitive Radio” by J. Joaquín Escudero-Garzás and Ana García-Armada, University Carlos III de Madrid (Spain), introduces the novel concept of Cognitive Radio for wireless telecommunications. Cognitive radios are a new type of radio devices that include cognition and reconfigurability features. Chapter LI, “Game Theory for PHY layer and MAC sublayer in Wireless Telecommunications” by J. Joaquín Escudero-Garzás and Ana García-Armada, University Carlos III de Madrid (Spain), addresses the role of Game Theory for wireless communications. It introduces Game Theory and its fundamentals, and gives an overview of the applications of Game Theory in the wireless networks for PHY layer and MAC sublayer. Chapter LII, “Agent Based Product Negotiation Models in Mobile Commerce” by S. S. Manvi, REVA Institute of technology and Management (India); L. B. Bhajantri, Basaveshwar Engineering College (India), addresses various issues in m-commerce and presents various agent based product negotiation models in the mobile commerce environment. Chapter LIII, “Role of Telecommunications in Precision Agriculture” by James M. McKinion, USDA-ARS (USA), discusses the various data/information intensive precision agriculture applications which use wireless local area networking and Internet access, and the next generation technologies which can immensely propel precision agriculture to widespread use in agriculture.

**Section VI: Telecommunications Network Design** consists of seven chapters. Chapter LIV, “Network Planning and Dimensioning for Broadband Access to the Internet Regarding Quality of Service Demands” by Franz Hartleb, Gerhard Hasslinger, and Sebastian Kempken, Universität Duisburg-Essen (Germany), focuses on planning and traffic engineering for link bandwidth and buffers as main resources in communication platforms based on measurement and statistical properties of traffic growth and variability. Chapter LV, “Overlay Networks: New Techniques for Global Service and Network Provisioning” by Gerhard Hasslinger, Deutsche-Telekom (Germany), discusses overlay networks within the standardiza-

tion of Internet Protocols (IP), where the main focus is on evolving techniques on higher layers. Chapter LVI, “Optimising P2P Networks by Adaptive Overlay Construction” by Nick Antonopoulos and James Salter, University of Surrey (UK), proposes ROME, a layer which runs on top of the Chord DHT to provide control over network size through the monitoring of node workload and suggests the use of processes to control the addition or removal of nodes from the network. Chapter LVII, “Designing a New Service Overlay on a Carrier Network Using the Efficient Frontier” by Susan J. Chinburg, Rogers State University (USA); George Scheets, Oklahoma State University (USA), expands the optimal network design process by applying a process borrowed from Finance and Operations Research/Management Science literature known as the Efficient Frontier or production frontier analysis. Chapter LVIII, “Combining Small and Large Scale Roaming Parameters to Optimize PCS Networks Design” by Mohamed Zaki and Salah Ramadan, Azhar University (Egypt), introduces a model that unites both an Enhanced Profile-Based Strategy (EPBS) for small-scale roaming and a Caching Two-Level Forwarding Pointer (C2LFP) strategy. The idea behind this model is applying those two location management strategies to specify the physical parameters of PCS networks from mobility management’s point of view. Chapter LIX, “Secure Resource Optimization in Distributed Service Computing” by Kaiqi Xiong, Texas A&M University Commerce (USA); Harry Perros, North Carolina State University (USA), presents a framework for optimizing a set of computer resources used by a service provider to host enterprise applications subject to a service level agreement (SLA). Chapter LX, “Trends, Optimization and Management of Optical Networks” by Jadranka Skorin-Kapov, Stony Brook University (USA); Darko Skorin-Kapov, Adelphi University (USA), provides a review of optical networking, its current issues, trends, and ways to efficiently design and manage a wide range of optical networks.

The *Handbook of Research on Telecommunications Planning and Management for Business* is an excellent collection of the latest research and practices associated with emerging telecommunications policies, management, technologies, and applications. This book is the first comprehensive book that presents aspects from the government, industry, managerial, and technical sides of the telecommunications. As leading experts in the telecommunications area, the contributors did an excellent job of providing our readers with extensive coverage of the most important research topics, concepts, business practices, technologies, and trends in the telecommunications industry. The projected audience includes policy-makers, telecommunications employees, managers, researchers, professors, and undergraduate/graduate students in various telecommunication management programs. I expect this book to shed new insights for researchers, educators, and practitioners to better understand the important issues and future trends of telecommunications research and technologies.

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