

About the Authors

Rasim M. Alguliyev

Rasim M. Alguliyev is the Director of the Institute of Information Technology of the Azerbaijan National Academy of Sciences. He has been actively involved in the implementation of governmental policy on information society, a number of strategic projects, and the improvement of the national Internet infrastructure. He has developed the principles of establishing virtual private networks with changing structures, models, and algorithms for the selection of an optimal structure for their distributed authentication systems. He is the Editor-in-Chief of the *Problems of Information Technology* and the *Problems of the Information Society* journals.

Ben Anderson

Ben Anderson is the Deputy Director of the Centre for Research on Economic Sociology and Innovation (CRESI). He has used techniques from cognitive psychology, anthropology, sociology, and ethnography during his time as an academic and commercial research scientist engaged in user studies, human-computer interaction, and applied social research. Before joining the University of Essex in 2002, he ran Digital Living, a BT program of applied social science research based on a longitudinal household panel that included quantitative surveys, time-use diaries, ethnographic studies, and customer data capture (call records and Internet usage logs). The resulting analysis was fed to BT's consumer market research, consumer products, joint venture, strategy, and R&D organizations. He has consulted to UK Cabinet Office/Social Exclusion Unit and No 10 Policy Unit, Ofcom, HSBC, DCFS, Citizens Online, and various bluechips on the subject of consumer market strategies. More recently he has focused on secondary data analysis, including the use of time-use diary data to analyze social change and the use of spatial micro-simulation to produce small area estimates of ICT usages, household expenditure, and income deprivation. Dr Anderson's current research interests are in the co-evolution of technologies and social practices with a particular focus on variations in processes of co-adaptation and self-organization across time and space. Originally from a natural sciences background, Dr Anderson has a BSc in Biology and Computer Science (Southampton University, United Kingdom) and a PhD in Computer Studies (Loughborough University, United Kingdom).

Scott C. Beardsley

Scott C. Beardsley is a Director in McKinsey & Company's Brussels Office and a member of McKinsey's global Board of Directors (Shareholders Council). Since joining the firm in 1989, he has been particularly active in helping clients around the world on a range of strategy, regulation, stakeholder management, business in society, and performance transformation topics in the telecommunications, technology, and media sectors. He is a global leader of McKinsey's Telecommunications Practice, and has been the leader of McKinsey's Strategy Practice in Europe, the Middle East, and Africa for the past seven years. He has co-chaired the personnel committees that elect and evaluate McKinsey partners as well as the committee that elects Directors (Senior Partners). Currently he leads all the leadership development, training, and learning programs for McKinsey's consultants globally. He has recently led a variety of internal research initiatives on such topics as regulatory and government strategy; stakeholder and reputation strategy; leadership; McKinsey Technology Initiative on topics such as collaboration, crowd sourcing, and social networking; leveraging technology for world-class knowledge management; telecommunications transformation and performance improvement; and next-generation telecommunications regulation. A frequent public speaker, he has also published editorials in the *Wall Street Journal* and the *Financial Times* as well as numerous articles in the *McKinsey Quarterly* and related publications on a variety of telecommunications, broadband, interactions, and strategy topics, and has appeared in television broadcasts on broadband, telecommunications competition, and deregulation. He has contributed to seven books related to regulatory strategy, ICT, and networked readiness, and delivered presentations for the World Economic Forum at Davos on digital readiness and telecommunications sector reform, as well as the future of telecommunications regulation. Prior to joining McKinsey, Mr Beardsley was Editor and Marketing Manager at the Massachusetts Institute of Technology (MIT) *Sloan Management Review*. Additionally, he worked in the strategic sales and product marketing functions for Advanced Micro Devices and Analog Devices of the semiconductor industry. Mr Beardsley is Chairman of the Board of Directors of the American Chamber of Commerce in Belgium, and on the Board of Directors of St John's International School in Waterloo, Belgium. He was a Henry S. Dupont III Scholar (highest honors) for outstanding academic performance at the MIT Sloan School of Management, where he graduated with an MBA in Corporate Strategy and Marketing. He holds a Bachelor of Science in Electrical Engineering *magna cum laude* from Tufts University (United States), where he achieved highest honors.

Phillippa Biggs

Phillippa Biggs is an Economist and qualified ICAEW accountant. She has worked for the United Nations for 10 years: first at the UNCTAD's Science and Technology for Development Section and later as a consultant with UNIDO in Tanzania and Egypt. She is now Coordinator of the ITU/UNESCO Broadband Commission for Digital Development. She researches and analyzes developments in broadband, VoIP, and 3G markets around the world. She is editor and contributing author to a number of reports, including ITU's *Confronting the Crisis* reports (www.itu.int/crisis2009), the *Status of VoIP* report, ITU's *World Telecommunication Development Report 2010*, ITU's *Trends in Telecommunication Reform 2009*, and ITU/UNCTAD's *World Information Society Reports* (www.itu.int/wisr). Ms Biggs has a Natural Sciences Honours Degree from the University of Cambridge and a Master in Economics for Development from the University of Oxford (both in the United Kingdom), where she won the Oxford University Prize for the Best Overall Performance in her degree. She also holds Diplomas in Economics and Statistics from the UK Open University.

Beñat Bilbao-Osorio

Beñat Bilbao-Osorio is an Associate Director and Economist of the Centre for Global Competitiveness and Performance at the World Economic Forum. In this capacity, he carries out research on national competitiveness issues with a special geographical focus on Latin America and Iberia. In addition, he analyzes the role of innovation and information and communication technologies (ICT) on fostering competitiveness and well-being, and is Co-Editor of *The Global Information Technology Report*. Prior to joining the Forum, Dr Bilbao-Osorio worked at the Directorate General Research and Innovation of the European Commission, where he was responsible for economic analysis of European Innovation Policy; at the Directorates of Science, Technology and Industry, and Education of the OECD, where he worked on innovation-related topics; and at the International Trade Centre (UNCTAD/WTO), where he performed international trade competitiveness analysis. His main research fields are ICT, innovation, skills, and economic development, where he has published extensively. Dr Bilbao-Osorio holds a Bachelor degree in Economics from the Universidad Comercial de Deusto (Spain), a Master in European Studies from the Université Catholique de Louvain (Belgium), and a PhD in Economic Geography from the London School of Economic and Political Science (United Kingdom).

William Bold

William Bold serves as Senior Vice President of Government Affairs for Qualcomm Incorporated. In this capacity, he manages the company's public policy agenda and its relationships with government entities and related organizations at the international, federal, state, and local levels. He manages a global group working in Belgium, Brazil, China, France, Germany, Hong Kong, India, Italy, Japan, Korea, South Africa, the United States, and the United Kingdom. Prior to joining Qualcomm, he worked as Director of Public Policy for the California Health Care Institute, a trade association representing California's biomedical industry and certain multinational pharmaceutical and medical device companies. He developed the Institute's public advocacy program and was responsible for the industry's relations with federal and state public officials. Prior to that, he served as Legislative Director to United States Congresswoman Lynn Schenk (D-CA), and managed Congresswoman Schenk's legislative agenda. He is a graduate of the University of California, Berkeley (United States), with a Bachelor of Arts in Political Economies of Industrial Societies.

Frederico Carvalho

Frederico Carvalho is a Solutions Director in Intel's World Ahead organization. His responsibilities span the European, Middle East, and African (EMEA) regions, where he engages governments and telecommunications organizations as well as technology ecosystem partners on strategies to increase technology and broadband Internet adoption. His work extends to helping establish communications, education, healthcare, small business, and other programs that can transform through the better application of technology. In prior roles, during his 13-year Intel career, Mr Carvalho was tasked with creating and implementing Intel's business development expansion strategy for the sub-Saharan Africa region. Working out of South Africa from 2008 to 2010, he established and developed numerous relationships with governments and business leaders, incorporating technology in the region. Earlier roles at Intel included establishing Intel's reseller channel in Portugal, which led him to occupy the role of Intel's Country Manager for Portugal. In 2005, Mr Carvalho was asked to relocate to Spain to manage a regional team responsible for delivering on Intel's enterprise business objectives.

Rob Claxton

Rob Claxton is a Principal Researcher working in BT's Research and Technology department. He has spent his career with BT in a variety of technology roles, including developing software for BT's Intelligent Network platform. Since 2005, Mr Claxton's research work has focused on network science and the analysis of large-scale networks derived from communications data. He has a particular interest in the applications of community-finding algorithms and the analysis of networks in a spatial context. In collaboration with university partners, he has co-authored papers on these subjects that have been published in *Science* and *PLoS ONE*. He graduated from the University of York (United Kingdom) with an MEng in Electronic Systems Engineering.

William Davidson

William Davidson is Senior Vice President of Global Marketing and Investor Relations for Qualcomm Incorporated. In this role, he provides leadership for Qualcomm's marketing and public relations efforts worldwide and is the primary liaison with the media, investment community, and Qualcomm shareholders. He has more than 25 years of experience in technical sales, marketing, and general management roles in the telecommunications industry. He spent 13 years at Bell Atlantic, which included substantial experience within the wireline business at New Jersey Bell, and subsequently served as vice president of wireless data sales and marketing for Bell Atlantic Mobile. Mr Davidson serves as a board member for CommNexus, CONNECT, the San Diego Police Foundation, and the San Diego Regional Chamber of Commerce and is the board chair for the Institute for Communication Technology Management at USC.

Yavuz Demirci

Yavuz Demirci is an Associate Principal in McKinsey & Company's Istanbul Office. He joined the firm in 1999, and was transferred to McKinsey's Chicago Office for two years in 2004. Mr Demirci's primary areas of focus are telecommunications and energy industries. During his career at McKinsey, he has worked in strategy, operations, and marketing areas. He holds an MBA from Carnegie-Mellon (United States) and a BA in Management from Koc University (Turkey).

Soumitra Dutta

Soumitra Dutta is the Roland Berger Chaired Professor of Business and Technology at INSEAD and the Founding Director of INSEAD eLab, a center of excellence in the digital economy. From July 2012, he will join the Samuel Curtis Graduate School of Management at Cornell University as its 11th Dean. His current research is on technology strategy and innovation at both corporate and national policy levels. Professor Dutta has been the co-editor of *The Global Information Technology Report* for the last 10 years. He has won several awards for research and pedagogy and is actively involved in policy development at national and European levels. His research has been showcased in the international media and he has taught in and consulted with international corporations. Professor Dutta obtained his PhD in Computer Science and his MSc in Business Administration from the University of California at Berkeley (United States).

Bahjat El-Darwiche

Bahjat El-Darwiche is a Partner with Booz & Company and a member of the firm's Communications, Media, and Technology Practice. He has over 17 years of experience in the telecommunications industry, acquired through various engagements with policymakers, regulators, telecommunications operators, and investors in the Middle East, Europe, North America, and Asia. Mr El-Darwiche has managed a number of strategy and operations assignments in the telecommunications and ICT space, primarily in the context of sector-level development strategies, institutional and regulatory reforms, strategy-based transformations, and new business ventures focused on policy development, strategic planning, business development, operating models design, and program and performance management. Mr El-Darwiche is the author of a number of reference reports on next-generation regulation, digital highways, and new business and operating models, and a regular contributor to the World Economic Forum's *Global Information Technology Report*. Mr El-Darwiche holds a State Engineering Diploma from the École Polytechnique with a major in Economics and Finance, and a Master in Telecommunications from the École Nationale Supérieure des Télécommunications (both in France).

Luis Enriquez

Luis Enriquez is a Director in McKinsey & Company's Brussels Office, where he has worked primarily in the infrastructure and regulated industries, focusing on regulation, operations and pricing in telecommunications (fixed and mobile businesses), and energy. He co-leads McKinsey's global efforts in regulation, regulatory economics, and stakeholder management and has led the firm's functional knowledge initiatives in emerging regulatory areas, including regulatory management best practices, organizational models, and key tools and capabilities to support regulatory strategy. He co-leads the global infrastructure initiative in telecommunications and McKinsey's regulatory strategy function. He has worked in approximately 60 countries on multiple regulatory and stakeholder management topics in regulated and unregulated industries, and is currently leading a cross-industry internal task force to gather global lessons in regulatory management and strategy across industries. He has collaborated with ITU, the World Economic Forum (where he has co-authored a contribution to *The Global Information Technology Report* since its inception), government panels and regulatory agencies on multiple issues. He has published perspectives on major topics such as regulatory strategy, market dominance remedies, and the regulation of infrastructure in major newspapers and other publications. Prior to joining McKinsey, Mr Enriquez worked extensively in liberalization, company restructuring, and regulation issues in Europe, the United States, and Latin America. He assisted the Ministry of Finance of the Czech Republic in developing price regulations to support the privatization of Czech Telecom (then SPT Telecom) in 1994, and taught courses and seminars on issues surrounding liberalization, competition, and interconnection. He worked in the Office of Plans and Policy with the Chief Economist of the US Federal Communications Commission during the implementation of the 1996 Telecommunications Act. He has worked with US telecommunications and energy firms on multiple regulatory topics ranging from incremental cost pricing, rate base regulation, wholesale pricing models, and price cap regulation to interconnection, unbundling and collocation, and the pricing of broadband services. Mr Enriquez has a BA in Economics from Harvard University and did his doctoral work in Economics at the University of California at Berkeley (both in the United States), where he focused on the economic dynamics of interconnection among telecommunications networks.

John Fredette

John Fredette is a member of Alcatel-Lucent's Corporate Communications organization, where he is helping to re-invent the "voice" of the company through the development of written materials that convey complex and technologically sophisticated subjects in a way that is readily understood and appreciated by the average reader, anywhere in the world. Previously Mr Fredette served in a variety of communications roles at Alcatel-Lucent geared toward educating internal audiences about the operations of various key segments of the business, most recently managing internal communications for the company's Applications Group. Prior to this, Mr Fredette managed supplier communications to drive understanding and active alignment with corporate strategy and goals through written communications, multi-media productions, and special events. Mr Fredette received his Bachelor degree in Art History and History from the University of Pittsburgh and his Master of Science in Journalism from West Virginia University. He is currently pursuing documentary studies at Duke University (all in the United States).

Roman Friedrich

Roman Friedrich is a Partner with Booz & Company, where he specializes in strategic transformation in fixed-line, convergent, and mobile communications; sales and marketing; new company build-up support; program management; technology-based transformation; and wargaming. Based in Dusseldorf and Stockholm, Dr Friedrich's geographic focus extends throughout northwest and continental Europe, where he is a recognized thought leader in telecommunications strategy, commercial strategies, and operations and performance improvement for communications and technology clients. Prior to joining the firm, he worked as a scientist in the field of theoretical elementary particle physics at the Gesellschaft fuer Schwerionenforschung and the University of Tübingen (both in Germany). Dr Friedrich earned a PhD in Physics from the University of Tübingen and a Diploma from the Technical University of Darmstadt (Germany).

Sandeep Ganediwalla

Sandeep Ganediwalla is an Associate in the Communications, Media, and Technology Practice at Booz & Company. He has more than nine years of experience in strategy and information technology (IT) consulting gained across Middle East, Africa, Asia, North America, and Europe. Mr Ganediwalla's engagements have included the development of ICT programs for governments and corporate strategy for telecommunications operators and IT service providers. He holds an MBA from HEC Paris and a Bachelor of Engineering from the University of Mumbai (India).

Thierry Geiger

Thierry Geiger is an Economist and Associate Director with the Centre for Global Competitiveness and Performance at the World Economic Forum. He leads the competitiveness research on Asia, supervises the development and computation of a wide range of composite indicators, and heads the Centre's technical assistance and capacity building program. His areas of expertise are private sector development, international trade, and applied economics. Mr Geiger is a co-author of the Forum's flagship publications *The Global Competitiveness Report*, *The Global Information Technology Report*, and *The Global Enabling Trade Report*. He is the lead author of several regional and country studies. Prior to joining the Forum, he worked for the World Trade Organization and Caterpillar Inc. He is Co-Founder of Procab Studio, a Geneva-based IT company. A Swiss national, Mr Geiger holds a BA in Economics from the University of Geneva (Switzerland), an MA in Economics from the University of British Columbia (Canada), and was a Fellow of the Forum's Global Leadership Programme.

Neena Gill

Neena Gill is Vice President of Corporate Affairs for the European and Asia Pacific regions at SAS, where she helps national governments identify innovative ways to transform their information technology (IT) systems with analytics and participate in social transformation initiatives for the new digital age. Prior to joining SAS, Ms Gill spent 10 years as a member of the European Parliament (MEP), where she steered legislative activities that focused on IT and was an active member of the Budget, Legal, and Industry committees. She was the United Kingdom's first female Asian MEP to hold this position and was elected to represent the West Midlands region of England. During her tenure she spent three years as the President of the European Parliament delegation for relations with India, five years as the President of the South Asia delegation, and two years as a member of the Association of Southeast Asian Nations (ASEAN). Ms Gill also served as a chief executive in public housing for 13 years before becoming a member of the European Parliament.

Ruc Guo

Ruc Guo is a Senior Market Analyst at Huawei Technologies. He joined the company in 1999. For the first 10 years he focused on the telecommunications industry, especially the carriers' business model, and how technology development changes that business model. Over the last two years, his research has expanded to include ICT, with a special interest in the government's perspective on ICT.

Galib I. Gurbanov

Galib I. Gurbanov is a Co-Founder and Managing Director of Azerin LLC, the first ISP in Azerbaijan. For more than a decade he has been Chairman of the Azerbaijan Internet Society, a coalition of Internet-related businesses and nongovernmental organizations, universities, and research institutes with the aim of coordinating and strengthening the development of the Azerbaijan segment of the global Internet, including content management and the protection of the rights of Internet users.

Mehmet Güvendi

Mehmet Güvendi is a Principal in McKinsey & Company's Istanbul Office. He joined the firm in March 1999. During his career at McKinsey, he has worked in the strategy, regulation, operations, and information technology (IT) areas in a number of industries, including telecommunications. Before joining McKinsey, Mr Güvendi was an IT Group Manager at Procter & Gamble Company. He worked as an IT manager for six years in Western Europe, North America, and Turkey. He led multi-functional global process design teams for planning and managed several major global pilot projects around the world. Mr Güvendi also managed a data center and a multinational communications network and was in charge of IT systems and operations at several manufacturing sites. He is a member of the Prime Ministry Telecom Special Expertise Committee for the development of the Turkish National Five-Year Development Plan. He is the Chairman of the Advisory Council of Bilkent University Engineering School. He has been asked for expert opinion on various regulatory issues (payments, pharmaceuticals, and telecommunications) by the Turkish Government, the Competition Board, and the European Commission. He has published a number of articles on telecommunications and regulatory affairs in general, and co-authored chapters in the World Economic Forum's *Global Information Technology Report*. Mr Güvendi holds a BS with high honors in Industrial Engineering from Bilkent University, Ankara (Turkey).

Mikael Hagström

Mikael Hagström is Executive Vice President of the European, Middle Eastern, African, and Asia Pacific regions at SAS, the leader in business analytics software and services. He is responsible for harnessing current market potential, preparing the organization for the future, and providing a culture where innovation can flourish. A noted authority on the multinational business climate, Mr Hagström holds the elected position of Chair of the American Chamber of Commerce to the European Union (AmCham EU) Executive Council, which is composed of senior executives from 18 of the largest American multinational corporations operating in Europe, and advises the most senior policymakers in Europe. He also serves as a member of the board of directors of the Atlantic Council and a member of the Executive Committee that functions as the US Council for International Business (USCIB)'s board of directors. Because of his wide-ranging business acumen, Mr Hagström is a frequent speaker at events such as those of the World Economic Forum, Horasis global business meetings, the Tällberg Forum, the UN Climate Change Conference, and more.

Ivan Huang

Ivan Huang is a Senior Marketing Manager at the cross-industry development department within the Strategy & Marketing Division at Huawei Technologies. He joined Huawei in 2001, and is now responsible for the strategies development across industries. He leads cross-division projects in the company on topics such as bridging the digital divide and climate change. Mr Huang is active in industry collaboration; he is Huawei's daily representative at the Broadband Commission under the United Nations and helps to advocate ICT for all. He has also participated in several projects with the World Economic Forum. Mr Huang is a member of the Green Strategy Committee in Huawei and has participated in several green initiatives organized by international organizations such as GeSI and the Broadband Commission.

Toby Johnson

Toby Johnson is a Communications Professional with 15+ years experience in the tech space. He has edited various trade magazines, taking freelance commissions for more mainstream media. For the best part of 10 years he has worked in communications at the UN's specialized agency for ICTs, International Telecommunication Union (ITU, at www.itu.int). At ITU he has led a new era of outreach, championing new media and pro-active relations. He sits on various international steering committees, such as the UN Habitat's World Urban Campaign. He also played a critical role in the development and presentation to the UN Secretary General of the first report of the Broadband Commission for Digital Development.

Raul Katz

Raul Katz is an Adjunct Professor in the Finance and Economics Division of Columbia Business School and Director of Business Strategy Research at the Columbia Institute for Tele-Information. In addition, he is President of Telecom Advisory Services LLC, a consulting firm specializing in strategic and economic analysis in the information and communication technology industries. In 2004, after 20 years of service, Dr Katz retired as a Lead Partner of Booz Allen Hamilton, where he led the Telecommunications Practice in North and South America and was a member of its Leadership Team. He holds a PhD in Management Science and Political Science and an MS in Communications Technology and Policy from MIT (United States), as well as a *Maîtrise* in Political Science and a *Maîtrise* in Communications Science, both from the University of Paris-Sorbonne (France).

Xie Liangjian

Xie Liangjian has been a Marketing Analyst at Huawei Technologies since 2007. He is engaged in wireless products lifecycle management, which aims to define effective product life cycle planning, adjustment, and termination to seek an optimal balance between profits, cost, and customer satisfaction. His tasks currently include ICT-related areas, with a special focus on financial ICT solutions.

Youlia Lozanova

Youlia Lozanova is currently working as a Telecommunication/ICT Regulatory Analyst with the Development Sector of International Telecommunication Union (ITU), where she has worked since 2005. Her main areas of interest are regulatory reform and policy development in the ICT sector. Before joining ITU, she spent three years as a Researcher in Sofia University and two years with public media in Bulgaria. Over the last seven years, Ms Lozanova has specialized in the area of ICT development, policy, and regulation and has co-authored material in several reports, including the *World Information Society Report 2006 and 2007*; *Trends in Telecommunication Reform 2008, 2009, 2010–11, and 2012*; and the *ITU Broadband Atlas* (coming soon). Ms Lozanova holds a Political Science Honours Degree from Sofia University (Bulgaria) and a Master in Public Policy Management and a Master in Development Studies from the University of Geneva (Switzerland).

Revital Marom

Revital Marom has more than 20 years of hands-on international experience in the telecommunications and IT sectors. Ms Marom currently leads the Market and Consumer Insight group helping Alcatel-Lucent and its customers anticipate and profit from technological and market changes with a specific focus on global and local consumer behavior. Prior to joining Alcatel-Lucent, Ms Marom was the Director of the Ericsson ConsumerLab North America. Her accomplishments with Ericsson include leading LTE and UMTS Market Research initiatives for AT&T, Verizon, Sprint, Telia-Sonora, Telenor, Cable and Wireless, Digicel, and others. Her experience also includes serving as a lecturer/fellow at INSEAD in the area of Technology Management; heading the research group at Thesus, France Telecom business school; and developing and implementing research and e-business strategies for clients such as AMD, ABB, 3M, and British Telecom. Ms Marom is a frequent guest speaker on telecommunications trends and consumer behavior at many telecommunications, IT, and international marketing events.

Stagg Newman

Stagg Newman provides technology, regulatory, and strategic advice and analysis to McKinsey clients globally as a McKinsey Advisor, a position he has held since 2005 except for a nine-month assignment with the US Federal Communications Commission (FCC). Dr Newman recently served as Chief Technologist on the US FCC National Broadband Team that developed Connecting America: The National Broadband Plan, a report to Congress and the President on the US broadband state of deployment and future plans. He also served as an advisor to the Obama Transition Team on telecommunications policy. From 2000 to 2005, Dr Newman served McKinsey & Company as Senior Telecom Expert, working with hundreds of client teams worldwide. He provided technical leadership for the firm's knowledge development efforts, particularly in broadband access, high-speed wireless, and the intersection of technology and regulation. He represented McKinsey on the Technology Advisory Council of the US FCC, where he led the Broadband Working Group that assessed broadband access platforms and presented *The State of Fixed and Mobile Broadband Wireless Technology: The Next Half Decade*, which analyzed 3G, WiFi Mesh, and WiMax technologies. In 2007, he was CTO of Frontline Wireless, a start-up designed to win US 700 MHz spectrum and build out a 4G network to serve public safety and commercial interests. Dr Newman was Chief Technologist at the FCC in 1998 and 1999, where he advised the commissioners and senior staffers on strategic technology issues. He championed the "unregulation" of the Internet, an Internet-friendly spectrum policy, and policies that encouraged technology innovation and investment. He started his telecommunications career with Bell Labs in 1976 and worked for various descendants of AT&T in voice, data, and video communications. From 1994 to 1997 he was Vice President, Network Technology and Architecture, Applied Research at Bellcore, where he led the wireless, optical networking, and network access technology and architecture research. Prior to that he led the network technology organization responsible for technical specifications, certification, and conformance testing. Dr Newman received his BS from Davidson College and his MS and PhD from Cornell University in math (both in the United States).

Francesc Pedró

Francesc Pedró joined UNESCO's education sector in Paris (France) in 2010, where he leads the work on policy advice, including national policy reviews and comparative research, the monitoring of the right to education, and the policy work on technology in education. Prior to that, he worked at the OECD Centre for Educational Research and Innovation (CERI). In his capacity as Senior Policy Analyst, he was responsible for a number of projects including the Teaching and Learning International Survey (TALIS) and the New Millennium Learners Project. He was also in charge of the reviews of educational R&D in OECD countries and of a project on Systemic Innovation in Education. Dr Pedró was formerly Professor of Comparative Education and Public Policy at the Pompeu Fabra University (Barcelona) and Academic Director of its program for educational quality. He also acted as pro-vice chancellor of educational research and innovation at the Open University of Catalonia (Barcelona), the first Internet-based European public university. His most recent publications are *Are the New Millennium Learners Making the Grade? Technology Use and Educational Performance in PISA* (2010), *Inspired by Technology, Driven by Pedagogy* (2010), and *Connected Minds* (forthcoming). Dr Pedró received his MEd from the Autonomous University of Barcelona and a PhD in Comparative Education from UNED (Madrid). Later he did a postdoc in Comparative Public Policy at the University of London Institute of Education (United Kingdom).

Jon Reades

Jon Reades is a Research Associate at the Centre for Advanced Spatial Analysis at University College London (UCL), where his work leverages professional experience with data processing (ETL) systems and database mining. Following eight years as an ICT consultant, Dr Reades returned to academia to pursue a PhD in Urban Planning at the Bartlett School of Planning (United Kingdom) in which he examined sought to connect globalization to clusters of specialized businesses activity across the United Kingdom. This research seeks to provide a more holistic and integrated view of London's embedding in a wider regional economy, and to highlight the importance of face-to-face and electronic interaction within and between sectors.

Karim Sabbagh

Karim Sabbagh is a Senior Partner with Booz & Company and the global leader of the Communications, Media, and Technology Practice. He has over 20 years of management consulting experience in deregulation strategies, privatization, strategy-based transformation, mergers and acquisitions, investment strategies, and operating and governance models. Dr Sabbagh's engagements have included economic master planning for telecommunications and media clients and the development of technology incubators for economic development programs. He is a member of the advisory council of the School of Business Administration of the American University in Dubai. He is a member of the firm's Marketing Advisory Council and also the chairman of the Ideation Center that serves as the firm's think tank in the Middle East. Dr Sabbagh holds a PhD with honors in Strategic Management from Century University (United States) and both an MBA in Finance and a BBA with distinction in Marketing from the American University of Beirut (Lebanon).

Sergio Sandoval

Sergio Sandoval is an Associate Principal in McKinsey & Company's Brussels Office. Mr Sandoval joined the firm in late 2001 and has been part of McKinsey's global efforts in regulation, regulatory economics, and stakeholder management for the past five years. He is also part of the core leadership of McKinsey's Next Generation Telecommunication Infrastructure Initiative. Mr Sandoval has been a lead author in the annual *Global Information Technology Report* of the World Economic Forum since 2005. The articles have focused on topics of regulation, next-generation networks, and the economic impact of high-speed broadband networks. He is also the key liaison between McKinsey and the European Union. His Brussels-based location allows him to maintain high-level contacts and get information first hand from key European industry stakeholders such as the European Telecommunication Network Operators Association (ETNO), the European Competitors Association (ECTA), the Center for European Political Studies (CEPS), and Euroactiv. Prior to joining McKinsey, Mr Sandoval worked with Colombia's Presidency of the Republic as Economic Advisor to the President. He obtained a BS and an MA in Economics from Los Andes University (Colombia), and an MBA with high honours from Solvay Business School (Belgium).

Milind Singh

Milind Singh is a Principal in the Communications, Media, and Technology Practice at Booz & Company. He has more than 10 years of strategy and operations experience gained across North America, Europe, Asia, Africa, and the Middle East. Mr Singh has worked with governments in defining their sector policies and development strategies, advised operators on their corporate strategies and operational turnaround programs, and helped investors develop and execute their sector investments and acquisition strategies. He holds an MBA from the University of Oxford (United Kingdom) and a Bachelor in Engineering from the University of Bombay (India).

Kurt Steinert

Kurt Steinert has more than 20 years of experience in corporate public relations, advocacy communications, and non-profit management with a focus on high-tech, international security, and global environmental issues. Over the past decade Mr Steinert has held a number of senior communications roles in Alcatel-Lucent, most recently serving as Director of Corporate Communications, leading a team of writers tasked with shifting the overall positioning, messaging, and "voice" of all communications materials produced by the company. Among other roles, Mr Steinert previously served as Head of Communications for the company's Solutions Organization, where he was responsible for external and internal communications in support of the company's initiatives in a variety of emerging technology sectors. Prior to this, Mr Steinert helped manage a program that brought together leading members of the Washington DC press corps with senior government officials involved in defense and foreign policy for frank discussions on the most pressing issues of the day. Mr Steinert received his Bachelor's degree in Journalism and Environmental Public Policy from Rutgers University, The State University of New Jersey (United States).

Malin Strandell-Janson

Malin Strandell-Jansson is a Knowledge Specialist in McKinsey & Company's Stockholm Office. She is part of McKinsey & Company's Global Tech, Media and Telecoms research team. Her main industry focus is mobile telecommunications with special expertise in regulation and strategy. Mrs Strandell-Jansson held the position of team leader for all analysts focusing on mobile telecommunications research between 2006 and 2010. She has also served as the first alert and coordinator for McKinsey's marketing and sales special interest group. Prior to joining McKinsey & Company, Mrs Strandell-Jansson worked for Ericsson assisting the EMEA management; and the European Commission at the Information Society DG, XIII, where she was involved in the development of the data protection directive. Before that she worked on contract law issues for one of the largest IT companies in Finland. She also wrote her Master's thesis for them on the topic "The International Copyright Protection of Software." Mrs Strandell-Jansson holds a Master of Law from Stockholm University (Sweden) and a Political Science degree with a major in International Law from Åbo Akademi (Finland).

Nancy Sundberg

Nancy Sundberg is a Senior Programme Officer. She has been involved in telecommunications/ICT reform for more than 15 years working for International Telecommunication Union (ITU). At ITU she coordinates and is a contributing author to regulatory publications such as *Trends in Telecommunications Reform*. She is a co-organizer of the BDT's annual Global Symposium for Regulators (GSR) and is also actively involved in the organization of regional events and the Training Programme for Regulators and Policy-Makers. She is coordinating further developments of the ITU infoDev online ICT regulation toolkit. She is also managing methods of information gathering and sharing, including the annual regulatory survey, the regulatory database on the ITU's ICT Eye portal, and the Broadband Universe portal. Ms Sundberg has prepared a number of reports, articles, and presentations on sector reform that she has delivered in several regulatory meetings around the world.

Chris S. Thomas

Considered one of Intel's visionaries driving future directions for industry and computing, Chris S. Thomas directs a worldwide team of solutions architects establishing technology solutions for Intel's "Next Billion" customers. His team develops strategies and architectures for education, healthcare, small business, communications, and other areas. He engages governments, industry, NGOs, and development agencies worldwide in the effective use of IT for emerging markets and has participated in World Economic Forum's Information Technology, Internet Security, and Cloud Computing activities. Mr Thomas is well known for driving computer industry standardization and next-generation solutions, including founding the Desktop Management Task Force (DMTF), directing Intel's Distributed Enterprise Architecture Lab, and architecting core technologies behind the LANDesk™ Management Suite. He is also co-author of the book *Mashup Corporations*. Mr Thomas is a member of the Board of Directors of Agilix Labs Inc. developing the BrainHoney™ Learning Environment and a member of the Strategic Advisory Boards of the Innovation Value Institute (IVI) and Community Health Awareness Council (CHAC). He received a BS in Computer Science and a BA in Spanish from Carroll College in Waukesha, Wisconsin (United States).

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