INDIA TELCO SUMMIT 2011

First International Summit on Indian Telecommunication Systems and Services

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INDIA TELCO 2011

Scope: India is the fastest growing telecommunication market in the world. Adding close to 10 million cell phone lines a month and a broadband base of 100 million, India is ***the*** market for telecommunication systems and services. Being largely a green-field network with minimal legacy network infrastructure, India is able to absorb the latest and greatest technological innovations in the telecommunications domain.

The question that attracts the most attention is – by when can India provide broadband to its 1.2 billion citizens? And when this happens, what would be the nature of this behemoth network. Technologies like WDM, Carrier Ethernet (PBB-TE and MPLS-TP), OTN, IP/MPLS and next generation networking are awaiting their adoption by metro networks in India. Likewise, FTTH/FTTC, WiMAX and advance LTE are the forerunners in the access part of the network. The huge demands of the access – as witnessed by the 3G revolution will have a strong impact on the metro and the core. The physical layer in the core will adopt new variants of WDM – such as grid-less, colorless and directionless ROADMs. The data-layers will use new transport technologies such as OTN, MPLS-TP and PBB-TE. The legacy IP layer may be restricted to just the core of the network with the rest of the network functioning using managed transport solutions.

From a business perspective, there seems to be a need for new business models and public-private partnerships. Further, the role of R&D institutions needs to be examined. The theme of India Telco 2011 continues to be ***telecommunication systems and technologies for realizing broadband connectivity that makes business sense***.

To achieve this goal, the summit will feature a technical program of keynotes, plenary presentations, tutorials and panels bringing together experts from industry, government, vendors, providers, integrators and R&D institutions. The forum will cater to those who are involved in the research, design, development, deployment, regulation, and application of communication and networking technologies. India Telco 2011 provides a common meeting ground for the confluence and exchange of ideas with a rich mix of participation from global and local industry, and other stakeholders. The summit will be held in the financial capital of India – Mumbai – during **December 15-16, 2011**.

India Telco 2011 will feature the following areas covering a variety of topics consistent with the theme of telecommunication systems and technologies for realizing broadband connectivity that makes business sense. These areas are:

1. Transport Networks (including topics such as):
    a. High-Speed Optical and Transport networks
    b. Colorless, Grid-less, Direction-less ROADMs, OXC architectures
    c. Carrier Ethernet and its flavors
    d. Optical Transport Network (OTN)
    e. Router and switch architectures: IP, SONET/SDH, MSPP
    f. Multi-domain and multi-layer transport networks
    g. Mobile Backhaul
2. Access Networks (including topics such as):
    a. FTTH/FTTC Networks and long-reach PON (NGPON)
    b. First-mile access networks using LTE, WiMax, FTTH solutions
    c. Access network architectures and protocols
    d. Legacy access networks: ADSL, DOCSIS, VDSL, Cable, etc.
3. Applications as Broadband Drivers
    a. Data security, Content processing/billing, OSS
    b. Strategic networks
    c. Cloud computing and the data-center
    d. Utility networks and mission critical networks
    e. IPTV, Video-on-Demand, Telepresence

TECHNICAL PROGRAM

Day 1, December 15, 2011, F. C. Kohli Auditorium, Kanwal Rekhi Building, IIT Bombay

09:00-09:30	Registrations and Welcome, Inaugural Address: Prof. Ashwin Gumaste, Chairman of the Steering Committee, India Telco Summit 2011	
09:30-10:15	**Keynote #1 and Inauguration: Government of India** Plenary Talk: N. Ravi Shankar, Jt Secretary DIT, Head, Universal Service Obligation Funds (USOF). Invited Talks: Shri Dr. Govind, Sr. Director, MCIT, Ms. Tulika Pandey, Addl. Dir. MCIT.	
10:15-10:45	**Keynote #2** Peeyush Agrawal, Executive Director, MTNL Mumbai.	
10:45-11:00	Tea Break	
11:00-12:15	**Session #1** 1. Shamim Akhtar, Sr. Director, Net. Architecture and Tech., Comcast, USA 2. Y. S. Subbarao, GM, Telecom Division ECIL. 3. Deepak Kakadia, Verizon Wireless, USA.	*Session Chair*: Saurabh Mehta GNL, IIT Bombay
12:15-13:30	**Session #2** 1. Dirk Weiler, Head of Standard Management, NSN, Germany. 2. Sanjeev Keskar, Managing Director Sales, India & SEA, PMC-Sierra 3. Tony Antony, Director, Cisco Systems, USA	*Session Chair*: Tamal Das GNL, IIT Bombay
13:30-14:15	Lunch Break	
14:15-15:30	**Session #3** 1. Kumar Sivarajan, Chief Technology Officer (CTO), Tejas Networks. 2. Raman Santhanakrishnan, Managing Director (MD), LSI, India. 3. Ramesh MC, Sr Director, Akamai, India 4. Steve Xu, Head of Strategy, Huawei. 5. Mod Marathe, Distinguished Engineer, Cisco Systems, USA.	*Session Chair*: Raviraj Vaishampayan, GNL, IIT Bombay
15:30-15:50	Tea Break	
15:50-17:00	**Session #4** 1. Arvind Mathur, Office of CTO, Cisco Systems, USA. 2. Devaraj Srinivasan, General Manager & Head R'n'D, Wipro. 3. Sri Nathan, Vice President – Business Development, Menara Networks. 4. Nitin Bhandari, AVP, Vodafone India 5. Anil Pande, Director - Telecom Marketing, Dura-Line India. 6. Sanjay Kawle, Director, ZTE, India	*Session Chair*: Sarvesh Bidkar GNL, IIT Bombay
17:00-18:30	**Panel #1**: Service Providers and Vendors Panel *Panelists*: 1. A. R Patil, DGM Data Center, MTNL Mumbai 2. Rakesh Pundir, VP, Idea Cellular 3. Speaker from Tata Teleservices 4. Nitin Bhandari, AVP, Vodafone India 5. Deepak Kakadia, Verizon Wireless. 6. Dirk Weiler, Head of Standard Management, NSN, Germany. 7. Vikram Srinivasan, Director, Network Systems Group, Alcatel Lucent India Labs. 8. Partho Mishra, VP & GM, Cisco Service Provider Business Unit PABU. 9. YS Subbarao, GM, Telecom Division, ECIL India 10. Shamim Akhtar, Sr. Director, Net. Architecture and Tech., Comcast, USA	*Moderator*: Prof. Ashwin Gumaste GNL, IIT Bombay

TECHNICAL PROGRAM

Day 2, December 16, 2011, F. C. Kohli Auditorium, Kanwal Rekhi Building, IIT Bombay

09:00-09:30	Registrations	
09:30-10:15	Welcome Address: Prof. Imrich Chlamtac, President Create-net, Officer, European Alliance for Innovation. 1. Ravi Chauhan, Managing Director, India & SAARC, Juniper Networks 2. Ying-Dar Lin, Professor NCTU, Taiwan 3. Shri. Prabhakar Dhekne, Office of the PSA, Govt. of India.	
10:15-10:30	Tea Break	
10:30-11:50	**Session #5** 1. Chandramouli Sargor, Head of Technology, Ericsson India. 2. Krishnaiyan Thulasiraman, University of Oklahoma, Norman, USA 3. Venkatesh Krishnaswamy, Director, IP Communications Research, Avaya Labs 4. Gouri Gudla, Akamai India. 5. Mohamed Shajahan bin Mohd. Iqbal, Chief Executive Officer, Three-Opp (M) Sdn. Bhd., Malaysia	*Session Chair*: Deval Bhamare GNL, IIT Bombay
11:50-13:30	**Session #6** 1. Tony Antony, Sr. Director, Cisco Systems 2. Shriprakash Pandey, CEO, Commtel Networks, India/USA 3. Rajesh Rao, Head Asia Pac, JDSU 4. Anjali Agarwal, Sr Scientist Telcordia, USA. 5. Massimo Di Blasio, Director, Carrier Business Development, Finisar Corporation	*Session Chair*: Raviraj Vaishampayan, GNL, IIT Bombay
13:30-14:15	Lunch Break	
14:15-16:15	**Session #7** 1. Bart Freedman, Sr VP, JDSU 2. Paparao Palacharla, Senior Researcher, Network System Innovation Group, Fujitsu Labs, USA. 3. Sukant K. Mohapatra, Vice-President, Technology, VPIsystems, USA 4. Sterling Perinn, Sr Analyst, Heavyreading. 5. Vijay Jain, CTO, Sterlite Technologies, Network Infrastructure Business. 6. Girish Saraph, Dept. of Elec. Engg., IIT Bombay	*Session Chair*: Ashwin Gumaste GNL, IIT Bombay
16:15-16:30	Tea Break	
16:30-17:30	**Panel #2** *Panelists*: 1. Madhawesh Kulkarni, VP of Carrier Services & Solutions, Aricent Inc. 2. Pranesh Babu K, CTO, SIFY 3. Ajay Ranjan Mishra, Global Head of Industry Environment, NSN 4. Stephen Miles, VP, Service Assurance, Asia Pacific, CA Technologies (Computer Associates), India 5. Upendra Manyam, CTO, Commtel Networks.	*Moderator*: Vishal Sharma Metanoia Inc.
17:30-17:45	**Closing Ceremony** Chief Guest: Madhukar V. Pitke (IEEE Life Fellow), Prabhakar Dhekne (BARC and PSA office), Dr. Govind (MCIT) and Ashwin Gumaste (IIT Bombay)	

Who Should Attend?

CEOs, CTOs, COOs, VPs, Directors, Managers and Planners/Developers in the telecommunication/networking segment.

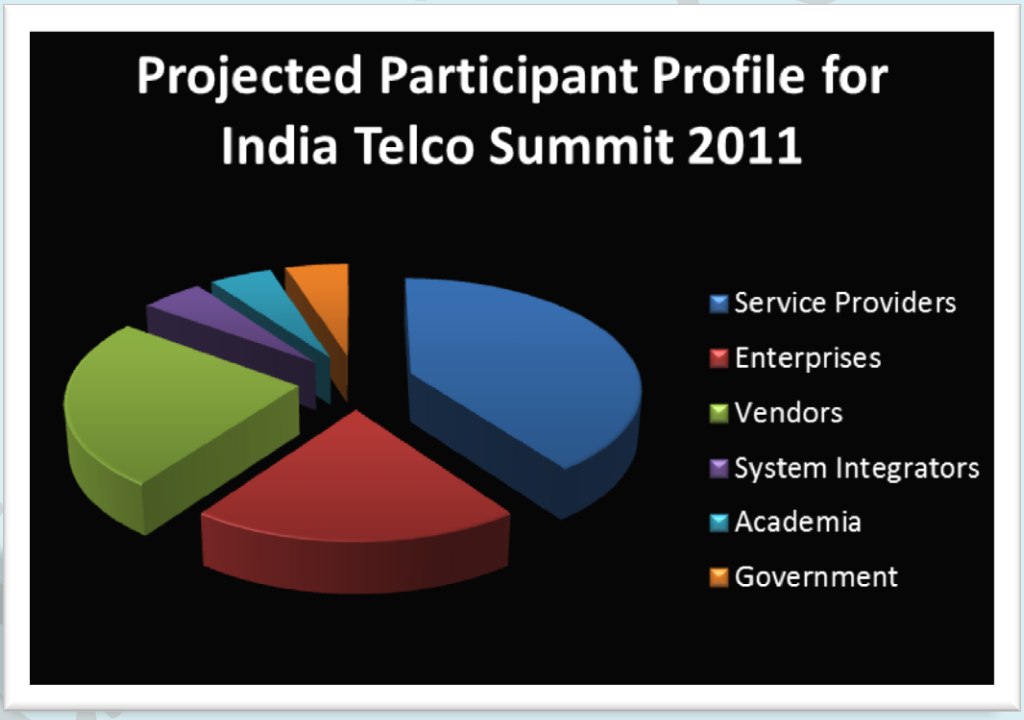
Equipment vendors, service providers and network integrators would immensely benefit from the rich knowledge exchange.

Government officials, decision makers, funding agencies etc.

Scientists, eminent scholars, technology leaders would also be stimulated by the focused and technologically relevant stream of discussion and talks.

Academics, post-doctoral associates, research scholars, post graduates would also benefit from the mix of industry and academic exposure in this very practical aspect of networking technology and telecommunications.

The expected participant profile is as shown below:



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Speaker's/Participant's Host Institutions

Keynote/Invited Speakers

Peeyush Agrawal
Executive Director, MTNL
Mumbai, India

***Brief Bio*:** Mr. Peeyush Kumar Aggarwal serves as an Executive Director of Mumbai at Mahanagar Telephone Nigam Ltd., and served as its Chief Operating Officer of Millennium Telecom Limited. Mr. Aggarwal served as a Director of One97 Communications Limited from February 26, 2004 to August 8, 2007.

Partho Mishra
Vice President and General Manager
Cisco Service Provider Access Business Unit (PABU)

Brief Bio: Dr Partho Mishra is Vice President and General Manager, Cisco Service Provider Access Business Unit (PABU) which is part of Cisco's Core Technology Group (CTG). In his current role, he is responsible for all of Cisco's worldwide Service Provider Access Routing products, including the Metro Ethernet Router (ME 3400/3600/3800), Cell Site Router (MWR 2941/3941) and Carrier Packet Transport (CPT 50/200/600) families. He was previously Vice President and General Manager at Marvell Semiconductors, where his business unit developed WiFi, Bluetooth and WiMax chip-sets for laptops, smart-phones, digital cameras, gaming platforms and access points. This included pioneering low power wireless technologies that were adopted in consumer devices such as the SONY PSP/PS3 gaming devices, Apple Iphone and Canon/Nikon/Sony digital cameras and in new product categories such as the Mobile Hot Spot (aka MiFi). The Marvell Hot Spot/MiFi product received Mobile Excellence's 'Best Mobile Product' award in 2009. At Marvell, Dr Mishra built and led large globally distributed ASIC, systems and software engineering teams to fulfill the unique needs of these products, including rapid release cycles and exacting quality requirements. He has been involved as part of the initial technology/founding team in two Silicon Valley start-ups: Airgo Networks (acquired by Qualcomm) and Iospan Wireless (acquired by Intel) that developed the first MIMO Wireless LAN and Wireless WAN technologies/products respectively. Prior to that he was at AT&T Labs-Research and AT&T Bell Labs-Research where he worked on network architecture and basic research. He has more than 40 issued US patents and several applications outstanding. He has more than 30 published papers in IEEE/ACM journals and conferences. Dr Mishra holds a B.Tech (Hons) degree in Computer Science from Indian Institute of Technology - Kharagpur (1988) and MS/PhD degrees in Computer Science from University of Maryland – College Park (1993).

Shamim Akhtar
Sr. Director, Network Architecture and Technology
Comcast, USA

Brief Bio: Shamim Akhtar, Sr. Director Network Architecture & Technology is responsible for driving the network technology platform and architecture roadmap for Comcast's truly converged national IP backbone, Metro, Edge and Access network. His technology & operations leadership, both inside and outside Comcast has brought tremendous momentum in the area of:

1. Vendor agnostic network evolution; from "prescription" based approach to "generic" approach offering much lower $/Mbps & TCO
2. IPoDWDM front runner ranging from 1G to 100G
3. Sophisticated Photonic & Ethernet probes for higher SLA offerings

4. Re-tooling the converged residential focused IP/Optical infrastructure to gracefully carry North American Mobile backhaul traffic supporting T1 over PWE3 & MEF based services with full SLA commitment.
5. He is the founding member of 100G user group for 100G+ acceleration for BB & Metro Transport and also a founding member of Docsis provisioning of IEEE EPON/10GEPON for faster commercial RGU growth
6. Shamim has been involved in critical technology acquisition and investment decisions in IP/Optical industry with help of his experience and insight on the length and breadth of network technologies.

Shamim is an IIT Kharagpur'95 graduate having working knowledge of MSO and Carrier networks across APAC (including India), Europe and North America through his prior work at Philips Broadband, VPISystems & IPI/Ciena.

Deepak Kakadia
Distinguished Member of Technical Staff (DMTS), IP Network Architect
Verizon Wireless, USA

***Brief Bio*:** Deepak is a Distinguished Member of Technical Staff (DMTS), IP Network Architect, with Verizon / Verizon Wireless, in the Transport Strategy and Analysis Group in Walnut Creek, California USA since 2005. Previously he was a Staff Engineer, IP Network Architect at Sun Microsystems Inc., Menlo Park, California, for a total of 11 years since 1994. He also worked at Corona Networks as a Principal Engineer in the Network Management Systems group; Digital Equipment Corp, where he worked on DEC OSF/1; and Nortel Networks (Bell Northern Research) in Ottawa, Canada. He received a certificate in Networking from the Dept of Electrical Engineering at Stanford University, Palo Alto, CA. He received a Bachelor of Engineering in Computer Systems, a Master of Science in Computer Science, and has completed Ph.D. qualifiers and course work in Computer Science. He has 3 awarded patents and filed 10 patents in the area of Network and Systems Management and Wireless Technologies.

Y. S. Subbarao
GM, Telecom Division
ECIL

Dirk Weiler
Head, Standards Management
Nokia Siemens Networks

***Brief Bio*:** Dirk Weiler is Head of Standards Management in Nokia Siemens Networks, responsible for standardization policy, membership portfolio, type approval and various other topics. He is Chairman of the ETSI General Assembly and the ETSI IPR Special Committee, Vice Chairman of the BITKOM Working Group Standardization and member of the European Commission's ICT Standardisation Policy Steering Committee. Until 2006 he has held various management positions in the areas of development, research, intellectual property, standardization and marketing in Siemens. Since 1988 he has been working actively in standardization on technical as well as board level in ETSI, ITU, OMA and various other bodies. He joined Siemens in 1985, starting in the development of the Mobile Communication System C450, after his graduation in Physics from the University of Cologne and the Institute of Nuclear research in Jülich, Germany.

Vijay Jain
CTO, Sterlite Technologies
Network Infrastructure business

***Brief Bio*:** VIJAY JAIN (vijay.jain@sterlite.com) is CTO of Sterlite Technologies, Network Infrastructure business, where he is responsible for end to end roll out of India's first mass scale FTTH network. Prior to joining Sterlite, he was General

Manager for Access Network Planning and Economics, India and South Asia at Bharti Airtel Limited, India. Before Airtel, he was program manager for FTTP and CO active and passive fiber optic components where he served as technical leader for risk analysis of FOC and CO components deployment into Verizon's network. He was involved in product identification, procurement, network planning, and field remediation. He has over 15 years of experience in the telecom industry and has worked in three countries (India, United States, and Canada). Prior to Verizon, he worked as vice president and in management positions for telecom equipment manufacturer and test laboratories, which provided him 360-degree exposure to the overall telecom business and technologies. In the last 15 years he has worked in engineering, R&D, planning, strategic, and business development roles. Achievements include designing and testing of GSM/CDMA-based wireless antenna, DSP-based VLSI chips, NMS for optical and wireless technologies, fiber optic components, and transport systems with up to OC-768 transmission rates. He holds two Master's degrees in telecom engineering, specializing in wireless technology from the Indian Institute of Technology, India and in DSP technology from Concordia University, Canada.

Xu Xin
Director & CTO, Strategy and Solution planning (Emerging Market)
Huawei Technology Ltd.

Brief Bio: Mr.Xu Xin is the director & CTO of Strategy and Solution planning (Emerging Market), Huawei Technology Ltd. since 2008. Prior to joining Huawei, he served as the co-founder and CTO or Hinova Technology Ltd., from 2004-07, worked for Huawei, Nortel Networks, etc. from 1997-2004. He received his Bachelors from ChangChun Institute of Telecommunication in 1997.

Kumar Sivarajan
Chief Technology Officer
Tejas Networks

Brief Bio: Kumar is responsible for setting the technology and product direction for Tejas Networks. Prior to Tejas Networks, Kumar was an Associate Professor in the Electrical Communication Engineering Department, at the Indian Institute of Science, Bangalore. Prior to that he has also worked with the IBM Thomas J. Watson Research Center, Yorktown Heights, New York. Kumar is co-author of the textbook `Optical Networks: A Practical Perspective' published in February 1998. He is a Fellow of the Indian National Academy of Engineering, an Associate of the Indian Academy of Sciences, and a recipient of the Swarnajayanti Fellowship from the Department of Science and Technology, and the 2004 Global Indus Technovator Award from the India Business Club at the Massachusetts Institute of Technology. He is also a recipient of the Institute of Electrical and Electronics Engineers, Inc Fortescue Fellowship and Institute of Electrical and Electronics Engineers, Inc.BakerPrizePaper Award. Kumar holds a Bachelor's Degree in Technology in Electrical Engineering from the Indian Institute of Technology, Madras and a Doctorate from the California Institute of Technology.

Raman Santhanakrishnan
Managing Director
LSI, India

Talk Title: Intelligent Acceleration: Networking Trends and Applications

Abstract: Growth in cloud services, cloud storage and internet video are driving fundamental changes in technologies in data centers and mobile networks. This talk will focus on the imperatives for acceleration and intelligence in the network and discuss technologies that help achieve the desired targets.

Brief Bio: Santhanakrishnan Raman is the Managing Director for LSI India Research & Development Pvt. Ltd. Raman spent 11 years ('93 to '04) in LSI at it's headquarters in Milpitas, California before moving to LSI India, Bangalore in 2004. Raman graduated with an M. Tech degree in Electrical Engineering (Microelectronics) from IIT-Kanpur in '92 and has also completed an Executive General Management Program (EGMP) from IIM-Bangalore in '10. Raman is a co-inventor of 6 US patents. He is an active participant and representative of LSI at various industry bodies like ISA and has organized and moderated panel discussions in VLSI Conferences in '09 and '10.

Raman's professional interests include trends in computing and software development, and emerging business models in a globalized economy. On the personal front, he is an avid follower of political and business news, loves everything cricket and likes to do video editing.

Anjali Agrawal
Senior Scientist
Telcordia

***Talk Title*:** New Enabling Technologies for Transport beyond 100G

***Abstract*:** Data rates for next generation optical networks continue to move up due to increasing traffic demands. These increasing data-rates have a significant impact on transmission reach and power consumption. This talk will present an overview of implications and requirements on various network technologies for transport at 100Gb/s and beyond. New technology choices for amplification and optical signal processing that are capable of meeting the demands of such ultra-high capacity networks will be discussed. In addition, optical grooming techniques for continued scaling of ultra-long-haul communication links at better SWAP will be presented.

Brief Bio: Anjali Agarwal received her Ph.D. degree in Electrical Engineering from Northwestern University, Evanston, IL in 2001. She then joined Lucent Technologies, Holmdel, NJ as a Member of Technical Staff, where she was involved in the research and development of high capacity, ultra-long-haul DWDM systems. Dr. Agarwal is presently a Senior Scientist with the Optical Networking Systems group at Telcordia Technologies, Red Bank, NJ where her current research focuses on nonlinear optics, analog optical systems and signal processing. Her experience includes DWDM systems, RF photonics, optical code division multiple access (OCDMA) systems, all-optical signal processing, avionic networks, and nonlinear optics including parametric oscillators and amplifiers. Dr. Agarwal is a member of IEEE and OSA and has more than 75 refereed journal and conference publications.

Gourishankar Gudla
Director, Platform Operations
Akamai Inc.

***Brief Bio*:** Gourishankar Gudla is the Director of Platform Operations at Akamai. Gouri leads the Akamai team responsible for the strategy, deployment, operation, and security of Akamai's global platform operations in the Bangalore centre. Gouri joined Akamai in 2006 and led the foundation for supporting Akamai's Intelligent Internet Platform, a network of 90,000+ servers deployed over 1000 networks in 650 cities across 72 countries. Gouri is focused over the past few years on operational excellence and has developed innovative systems and processes to drive efficient growth. Gouri holds a Masters in IT and has more than 16 years of experience in IT operations and strategy. He started his career with a leading Indian IT services provider back in 1995 and has since then worked in different leadership roles, serving a variety of industries including financial services and manufacturing.

Madhav Marathe
Distinguished Engineer
Cisco Systems

***Talk Title*:** Research Challenges in Mobile Video

Abstract: While today's 3G and 4G wireless networks are increasing bandwidth available to smartphone users, the expected exponential rise in mobile video demand will outpace the increased bandwidth. According to Cisco's annual Visual Networking Index Forecast, overall Internet traffic is expected to grow four-fold by 2014, with mobile video traffic growing at least 65–fold from 2010. Add in Morgan Stanley's recent prediction of more than 620 million smartphones being shipped by 2013 (surpassing PC shipments), which creates the potential for mobile network meltdown. Significant research is needed to develop innovations that give networks new abilities to understand and adapt to the quality requirements of various devices beyond just increasing network capacity. The mobile Internet needs to change and become smarter to address the traffic and the number of devices coming in the next 5 to 10 years. The research also needs to consider that the network needs to handle several different use cases at once – broadcast (live) video, playback of stored video and two-way teleconferencing. There may be different approaches for addressing these use cases but the mobile device and the network need to incorporate all of them.

The answer may be in designing the special treatment for data transfer *__knowing__* that it is video data instead of just a deluge of megabits. This may involve figuring out which data bits are more important than others – for example, foreground versus background, salient regions in each video frame or human faces and making sure these data bits reach the device correctly. Since the goal is to provide high perceptual quality video, doing so requires the delivery of fewer, more perceptually relevant bits per video stream, communicating those bits more efficiently throughout the network and creating a more capable perception and video-content-aware network infrastructure. This is different from past work focused on the art of coding to transport bits more efficiently and reliably over networks.

***Brief Bio*:** Dr. Madhav Marathe was a National Science Talent scholar who studied in IIT Kanpur and then received his PhD in Computer Science from Carnegie-Mellon University in 1977. After working in a number of computer systems companies in the US, he finally joined Cisco Systems in 1995. He became a Cisco Distinguished Engineer in 2000. Dr. Marathe specializes in using quantitative metrics and analysis to translate fuzzy requirement into specific engineering tasks and product features. For the past 2 years, Dr. Marathe has been working in Cisco's research department to promote and leverage external university research. He collaborates with a number of leading universities all over the world to sponsor world class research advancing the state of the art in networking. His current interests are massive scale datacenter networks, wireless video and video analytics.

Arvind Mathur
Office of CTO
Cisco Systems, USA

***Brief Bio*:** Arvind Mathur is Strategic Technology Officer, India and South Asia with the Cisco Corporate CTO Office, based in Bangalore, India. Arvind's professional career spans over 21 years in the telecommunications & ICT industry and he brings in extensive service provider experience from India as well as internationally. Prior to joining Cisco, Arvind was CTO and President, Global Services with Sify, one of India's leading ISP and a major provider of converged ICT services for the Enterprise; Vice President and Head of Global Product Management for Enterprise Network Services at Tata Communications; and was as well the CTO for Enterprise Services at Bharti-Airtel.

Arvind has spent several years in Japan, USA and Canada working in different roles and capacities with the Research Institute of Electrical Communications, Teleglobe International, and JDS Uniphase respectively. He is an alumnus of the

Indian Institute of Science, Bangalore and the Indian Institute of Technology, Delhi and holds dual Masters degrees in Electrical Communication Engineering and Physics. He is a familiar industry speaker on next generation converged ICT networks, enterprise solutions, innovation strategies, cloud computing, data centers and managed services.

At Cisco, he is working on several initiatives for Smart Connected Communities, contributing to thought leadership in technology, service architectures, solutions, standards and policy.

Devaraj Srinivasan
General Manager & Head R&D
Wipro

Brief Bio: Dev is the General Manager & Head of R&D Engineering practice group at Wipro Telecom Engineering Business Unit. Wipro's Telecom Engineering business unit is a team of 6000+ people providing R&D Engineering, Professional Services, IT & BPO Services to telecom equipment vendors worldwide. Dev is heading the R&D Engineering practice group in the Telecom Engineering business unit. He and his group provides Telecom Consulting, builds solutions, participates in various technology forums in Wireless & Wireline domain and leads the Telecom Center of Excellence at Wipro. His areas of interest are broadband wireless technologies, Service Management and Wireless backhaul solutions. Dev has been working in IT & Telecom Industry for more than 20 years and joined Wipro in 1991. At Wipro he started working on Embedded applications for Light Combat Aircraft System and then later moved to developing embedded applications for Medical Systems and Transportation Systems. Dev has been one of the pioneers in starting Offshore Development Centers at Wipro for a leading Telecom Equipment and has contributed to building this Center to 1000+ people. Dev has performed various technology and business roles in Wipro Telecom Engineering group and has worked with leading telecom equipment vendors across the world. Dev has a Bachelors degree in Electronics & Communication Engineering from Bharathiar University, Coimbatore and Advanced Diploma in Management from Indira Gandhi National University.

Ying-Dar Lin
Department of Computer Science
National Chiao Tung University (NCTU), Taiwan

Talk Title**:** From Lab Test to Real Traffic Test: NBL Experiences

Abstract**:** Network Benchmarking Lab (NBL, www.nbl.org.tw) at National Chiao Tung University (NCTU), Taiwan, was founded in 2002, co-hosted by Industrial Technology Research Institute (ITRI) and NCTU, mainly to review the functionality, performance, conformance, interoperability, and stability of networking products ranging from switch, router, WLAN, to security and VoIP. It has evolved from a test service provider to a test solution provider, from an artificial traffic test lab to a real traffic test lab. Its unique on-campus beta site has helped vendors to find their potential customer found defects earlier and opened a door to further research. In this short talk, we first briefly introduce NBL, then present the RealFlow test methodology with two case studies on Live SOHO and Live Security, and conclude the talk with on-going research topics.

Brief Bio: Ying-Dar Lin is Professor of Computer Science at National Chiao Tung University (NCTU) in Taiwan. He received his Ph.D. in Computer Science from UCLA in 1993. He served as the CEO of Telecom Technology Center during 2010-2011 and a visiting scholar at Cisco Systems in San Jose during 2007–2008. Since 2002, he has been the founder and director of Network Benchmarking Lab (NBL, www.nbl.org.tw), which reviews network products with real traffic. He also cofounded L7 Networks Inc. in 2002, which was later acquired by D-Link Corp. He recently, in May 2011, founded Embedded Benchmarking Lab (www.ebl.org.tw) to extend into the review of handheld devices. His research interests include design, analysis, implementation, and benchmarking of network protocols and algorithms, quality of services,

network security, deep packet inspection, P2P networking, and embedded hardware/software co-design. His work on “multi-hop cellular” has been cited over 500 times. He is currently on the editorial boards of IEEE Transactions on Computers, IEEE Network, IEEE Communications Magazine Network Testing Series, IEEE Communications Surveys and Tutorials, IEEE Communications Letters, Computer Communications, and Computer Networks. He recently published a textbook "Computer Networks: An Open Source Approach" (www.mhhe.com/lin), with Ren-Hung Hwang and Fred Baker (McGraw-Hill, 2011). It is the first text that interleaves open source implementation examples with protocol design descriptions to bridge the gap between design and implementation.

Rakesh Pundir
Vice President Long Distance Operations,
Idea Cellular Ltd.

***Brief Bio*:** Mr. Rakesh Pundir currently serves as the Vice President, Long Distance Operations, Idea Cellular Ltd. since December 2006 and oversees the following responsibilities:

- National Long Distance Operations
- International Long distance operations
- Internet Service Provider Project & Operations
- National OFC based transmission projects and Planning

His earlier assignments include:

- Special Projects, Aditya Birla Nuvo Ltd. Start Dec 05 onwards in Telecom, BPO & IT sectors.
- Executive Assistant to Mr. K.M. Birla, Group Chairman, Aditya Birla Group, May 02-Nov 05.
- Infrastructure Projects ($1.3Bn - JV company of Powergen Plc, UK), 1999-2002.
- Project Manager, Steel Authority of India Ltd, (1993-98).

A summary of his key areas of expertise are as follows:

- Long-term Business strategy formulation and execution through organic/ inorganic routes.
- Business reviews and operational strategy formulation
- Changement management in various areas including post-merger integration etc.
- Project Setup and Operations Management
- Worked in Cement, IT, ITES & International Trading sectors.

Mr. Pundir completed his B. Tech. and Master of Management from IIT Bombay.

Sri Nathan
Vice President – Business Development
Menara Networks

Brief Bio: Before joining Menara Networks Dr. Sri Nathan was an independent consultant, to small and medium size companies to create new market opportunities, evaluating efficiency of various large networks with detailed architecture analysis, and, guiding teams to build strategic planning and modeling tools. Prior to this he was the CEO and President of Jasmine Networks, a Metro Optics Sub-System Company. At the peak of operations Jasmine Networks had 300 people at four locations. He played a significant role in securing multi-million dollar contracts with leading system vendors. Prior to Jasmine Networks Sri served as the Vice President of Sales, Marketing and Business Development for Qtera Corporation and secured multi-year contract totaling US $1B. He also played a key role in successfully selling the

company to Nortel Networks for US $3.25B (January 2000). He also held various Engineering, Business Development and Management positions in MCI and Nortel Networks. Sri earned his Ph.D. in Management and Administrative Science and an advanced degree in Computer Science from the University of Texas. He has a B.S. in Engineering from Madras University (India). He holds twelve patents in optical technology applications, has many publications and is an avid speaker in various conferences.

Paparao Palacharla
Senior Researcher
Network System Innovation Group, Fujitsu Labs, USA

***Talk Title*:** Next Generation ROADM Networks

Brief Bio: Paparao Palacharla is a senior researcher in network system innovation group at Fujitsu Labs of America. His current research focuses on design and development of dynamic optical networks. He received his B.Tech. degree from Indian Institute of Technology, Kharagpur and Ph.D. degree from University of Iowa in Electrical and Computer Engineering. He has previously worked at National Research Council, Nortel Networks and Fujitsu Network Communications in areas of optical signal processing, optical interconnects and optical networking. He has over 20 patents either pending or issued and has published over 30 papers in refereed conferences and journals. He has served as technical program committee member for OFC/NFOEC, GLOBECOM and other conferences.

Anil Pande
Director - Telecom Marketing
Dura-Line India

Brief Bio: Anil Pande is from the Telecoms field having over 30 years of experience in Manufacturing, Projects, Operations and Marketing. Anil also co-founded and managed Consilnet Inc. an Internet start-up company based out of San Jose with operations in several Asian countries. Anil has served as Director on the Board of the FTTH Council APAC. He is currently Director at Dura-Line India heading the Telecom Business of the company in India, Africa, Middle East and Pacific region. Anil is an Engineer with an MBA in Marketing from the Faculty of Management Studies, Delhi University.

Arvind Patil
Deputy General Manager (Data-Center)
MTNL

Vikram Srinivasan
Director, Network Systems Group
Alcatel Lucent, India

Brief Bio: Vikram Srinivasan is the Director of the Networking Research Department at Alcatel-Lucent Bell Labs, India. He joined Bell Labs in 2007. Prior to joining Bell Labs, he was an Assistant Professor at the National University of Singapore from 2003-2007. He received his PhD from the University of California at San Diego in 2003. He has published over 50 research papers and serves as the Associate Editor of IEEE Transactions on Mobile Computing. His research has resulted in new products for Alcatel-Lucent.

Tony Antony
Director, Cisco Systems
USA

Shriprakash Pandey
Chief Executive Officer (CEO), Commtel Networks
India/USA

***Brief Bio*:** A business leader and an entrepreneur with more than 19 years of experience in leading international technology and engineering companies serving the utilities market, Shriprakash R. Pandey is founder, promoter and Managing Director of Commtel Networks. Being an expert in all aspects of business including sales and business development, global alliances and operations, has only helped him maintain that proven track record of building highly motivated teams which have consistently surpassed customers commitments. Shriprakash commenced his professional journey as Systems Engineer in the year 1991 at Olex Cables, an Australian multinational firm and within 7 years went on to head Olex's Indian Operations. He established Commtel Networks in July, 1998 and has built the business from scratch to make it one of the most admired companies in its work domain. His journey from being a Systems Engineer to a successful entrepreneur has been a transformational one, at the heart of which lies an abundant source of unfading energy and enthusiasm. An engineer by profession and a learner for life, his continual search to learn new things took him to the shores of accomplishing an Advanced Management Program from Indian School of Business, Hyderabad and Kellogg School of Management at Chicago, IL. Shriprakash also serves on the board of United Commtel, a Texas based NexGen communication Innovation Company. Firmly believing in 'preach only what you can do and do the best in what you preach'. He is an individual who balances professional and social commitments to reach the next level in what we call life with a higher purpose.

Chandramouli Sargor
Head, Technology
Ericsson, Bangalore

Talk Title: 4th Generation of IP Networks: The Networked Society

Brief Bio: Chandru Sargor has over 20 years of experience in leading product development/research roles in the networking/telecom industry. He serves as the Chief Technology Officer for the Ericsson R&D center in Bangalore, India. His interests are in the areas of network security, wireless networks and advanced services in IP networks. He has a B.Tech (Electrical Engineering) from the Indian Institute of Technology, Mumbai, India and an M.S (Computer Engineering) from North Carolina State University, Raleigh, NC, USA. He holds multiple patents in the networking/security areas.

Krishnaiyan Thulasiraman
Professor and Hitachi Chair in Computer Science
University of Oklahoma, Norman, USA

***Talk Title*:** Graph Theory and Discrete Optimization in Network Engineering

***Abstract*:** Mathematical methodologies have made a deep impact on advances in all areas of engineering: systems, control, circuits, signal processing, communications, information theory etc. This is also the case with network engineering. In this talk, we demonstrate recent applications of certain classical concepts and results in graph theory and discrete optimization to two problems of interest in the modern area of network engineering.

- Cross-layer survivability in a layered network.
- Topology Abstraction Service in Mutually Interacting VPNs

Brief Bio: Krishnaiyan Thulasiraman received the Bachelor's degree (1963) and Master's degree (1965) in Electrical Engineering from the University of Madras, India, and the Ph.D. degree (1968) in Electrical Engineering from IIT, Madras, India. He holds the Hitachi Chair and is Professor in the School of Computer Science at the University of Oklahoma, Norman, where he has been since 1994. Prior to joining the University of Oklahoma, Thulasiraman was professor (1981-1994) and chair (1993-1994) of the ECE Department in *Concordia University, Montreal, Canada.* He was on the faculty in the EE and CS departments of the IIT during 1965-1981. Dr. Thulasiraman's research interests have been in graph theory, combinatorial optimization, algorithms and applications in a variety of areas in CS and EE: electrical networks, VLSI physical design, systems level testing, communication protocol testing, parallel/distributed computing, telecommunication network planning, fault tolerance in optical networks, interconnection networks etc. He has published extensively in archival journals, coauthored with M. N. S. Swamy two text books "Graphs, Networks, and Algorithms" (1981) and "Graphs: Theory and Algorithms" (1992), both published by Wiley Inter-Science. Dr. Thulasiraman has received several awards and honors: Distinguished Alumnus Award of IIT Madras(2008), Fellow of the American Association for Advancement of Science (2007), 2006 IEEE Circuits and Systems Society Technical Achievement Award. Endowed Gopalakrishnan Chair Professorship in CS at IIT, Madras (Summer 2005), Elected Academician of the European Academy of Sciences (2002), IEEE CAS Society Golden Jubilee Medal (1999), Fellow of the IEEE (1990) and Senior Research Fellowship of the Japan Society for Promotion of Science (1988). He has held visiting positions at the Tokyo Institute of Technology, University of Karlsruhe, University of Illinois at Urbana-Champaign and Chuo University, Tokyo, University of Waerloo and the National Chia-Tung University, Taiwan. Dr. Thulasiraman has been Vice President (Administration) of the IEEE CAS Society (1998, 1999), Technical Program Chair of ISCAS (1993, 1999), Deputy Editor-in-Chief of the IEEE Transactions on Circuits and Systems I (2004-2005), Co-Guest Editor of a special issue on "Computational Graph Theory: Algorithms and Applications" (IEEE Transactions on CAS , March 1988), , Associate Editor of the IEEE Transactions on CAS (1989-91, 1999-2001), and Founding Regional Editor of the Journal of Circuits, Systems, and Computers and a founding member of the editorial board of the AKCE International Journal of Graphs and Combinatorics publised by Kalasalingam university, India.

Venkatesh Krishnaswamy
Director, IP Communications Research
Avaya Labs

Brief Bio: As director of Avaya Labs' IP Communications Research Department, Venkatesh Krishnaswamy is responsible for research and development in the areas of Internet Telephony software, firmware, protocols, applications and appliances in support of Avaya's product lines. Krishnaswamy joined Bell Labs in 1991 and over the years has played a key role in defining and developing strategic technologies and applications for Bell Labs and Avaya. These include early prototypes of an IPPBX, Internet Screen Phone appliance, a telephone gateway server for wireless phones and a Virtual Communications Desktop, which personalizes communications tools such as telephony and e-mail and enables document and application sharing. More recently, he has led projects to explore the area of converged communications applications using technologies such as SIP and web services. Krishnaswamy holds masters and doctorate degrees in computer science from Yale University and a bachelor's degree in technology from the Indian Institute of Technology. He is the author of numerous papers and articles on a variety of telecommunications and Internet topics and has been an invited speaker at numerous conference and industry events. He holds eight US and international patents.

M.C. Ramesh
Senior Director, Services and Support
Akamai Technologies

Mohamed Shajahan bin Mohd. Iqbal
Three-Opp (M) Sdn. Bhd.
Malaysia

Brief Bio: Shajahan Mohamed Iqbal has over 25 years experience in the field of accounting and financial consulting having worked with firms such as Peat Marwick Mitchell & Company and Arthur Andersen & Co. His vast and varied experience is a result of having worked as a Group Financial Controller, Management Consultant, Corporate Planning Manager, Liquidator, Receiver & Manager and Tax Advisor with international and Malaysian companies such as Agate Duty Free Sdn. Bhd., Arthur Andersen & Co., Peat Marwick Mitchell & Company and Harry Bell & Company based in Australia. Shajahan's expertise and hands-on knowledge in Oil & Gas is a result of leading audits of Production Sharing Contracts in his capacity as external auditors to PETRONAS and Malaysian Liquefied Natural Gas Sdn. Bhd. Over the last two decades, he has conducted audits, liquidations, financial analysis and reviews of companies ranging from retail to financial institutions. He holds a Bachelors Degree in Business Administration (Finance & Accounting) from University of Wisconsin. He is also an Associate member of the Australian Society of Certified Practicing Accountants and Malaysia Management Institute (MIM). He, too, is a Trustee and Director of Yayasan Pendidikan Islam, a charitable organization. Besides conducting training and providing consultancy, Shajahan owns and operates his own R & D and manufacturing company for the Telecommunications and Power industry. For the past 20 years, he created a local industry for telecommunications products under the brand name 3OPP. The first and only manufacturer of Fiber Optic accessories products in Malaysia.

Rajesh Rao
Vice President, South Asia Pacific
Communications Test & Measurement, JDSU

***Brief Bio*:** Rajesh Rao, Vice President, Communications Test, South Asia Pacific leads the regional team based and is based out of Singapore. JDSU has one of its largest wireless R&D centers in Asia Pacific and this is located in Singapore. In his role, Rajesh and his team serve Customers by understanding their needs and positioning appropriate solutions via JDSU's industry leading, broadest range of test and measurement solutions. Prior to his current position, Rajesh was the General Manager for Asia Pacific Sales organization at Agilent Technologies, leading their Communications Test & Measurement unit. And, prior to this led the Global Professional Services organization at Agilent. Rajesh has over 18 years of experience in direct sales, sales leadership, business development, regional & global professional services and support services. While pre-dominantly working in the telecommunications industry, he also had exposure in the defense and aerospace industries. His rich experience across various roles includes his hands on style of management bringing teams together, organization design, change management and business transformation.

Ravi Chauhan
Managing Director, India & SAARC
Juniper Networks

Brief Bio: Ravi Chauhan is the Managing Director of Juniper Networks for the Indian region, comprised of India, Sri Lanka, Bangladesh, Pakistan and Nepal. He is based in Bangalore and is responsible for the sales and operations of Juniper Networks throughout the sub-region. Ravi brings over two decades of experience to his role at Juniper Networks. Prior to joining Juniper, he was the global head of Nortel's Communication Enabled Applications Business. In his ten year career with Nortel, he served in several senior leadership roles including as the managing director of Nortel India. Ravi has also served in leadership roles within Cabletron Systems, Digital Equipment and Wipro in a variety of disciplines including sales, marketing, and technical areas. Ravi holds a PGDM in business management from the Indian

Institute of Management, Ahmadabad and a BE (Honours) degree in electronics and communications from Thapar Institute of Engineering and Technology, Patiala. Ravi is married and has one daughter aged 8 years.

Bart Freedman
Senior Vice President, Global Sales
Communications Test & Measurement, JDSU

***Brief Bio*:** Bart Freedman, a global sales executive with more than 30 years of global sales management experience in the test and measurement industry, is the senior vice president, global sales, of JDSU's Communications Test and Measurement business. Bart joined JDSU from Tektronix in 2008, where he most recently served as vice president of worldwide sales and service for a $920 million test instrument business with more than 1,000 employees. He has also held senior global sales roles with Credence Systems, Schlumberger and Teradyne. His experience includes leading Asian Operations for Credence Systems. Bart has an excellent track record of success in areas such as strategic sales management, sales operations and sales force development, and has achieved strong results during periods of change and transition, including mergers and acquisitions and related integration activity.

Sukant K. Mohapatra
Vice-President, Technology
VPI Systems, USA

Brief Bio: Dr. Sukant K. Mohapatra has a Ph.D degree in Computer Science with specialization in Telecommunication Engineering. Currently as Vice President, Technology at VPIsystems, US, he leads product and technology strategy in network optimization and planning for next generation wire-line and wireless networks. Prior to VPIsystems, he has worked several years at Bell Laboratories, leading in the areas of data communication, optical networking and network management. Dr. Mohapatra has also taught graduate program at Rutgers University, New Jersey. Dr. Mohapatra has over 20 years of experience in telecom industry and his area of interest /research include: Optical Networking, IP-MPLS Network, Planning of Next Generation Wireline and Wireless Network, Network Security, and Management of Converged Networks. He has numerous publications in various journals, conferences and seminars in the area of his expertise. He has chaired and organized various international conferences and has been invited as speaker in various conferences, seminars, and institutes. Dr. Mohapatra is a senior member of Institute of Electrical and Electronics Engineers (IEEE) and recipient of the DMTS Award at Bell Laboratories. Dr. Mohapatra is the founder and founding chairman of National Institute of Science and Technology (NIST), Berhampur, Orissa, India.

Sterling Perrin
Senior Analyst, Heavy Reading

***Talk Title*:** Assessing the Opportunities for Packet-Optical Transport in India

***Abstract*:** This presentation will look at the trends and innovations driving packet-optical transport globally and then assess how the India market is both similar to and different from the overall market. Technologies to be discussed in the Indian context include switched OTN, next-generation ROADMs, MPLS-TP, switched Ethernet, and 40G and 100G transport.

Brief Bio: Sterling has more than 15 years' experience in telecommunications as an industry analyst and journalist. His coverage area at *Heavy Reading* is optical networking, including packet-optical transport. He also authors *Heavy Reading*'s Packet-Enabled Optical Networking Quarterly Market Tracker, a special quarterly research service. Perrin is a frequent speaker at telecommunications industry events and is a highly sought-after source among the business and

trade press. He Chairs *Light Reading's* annual Packet-Optical Transport Evolution conference and Next-Generation Packet Transport Networks India. Perrin graduated *cum laude* with a B.A. from Dartmouth College.

Sanjay Kawle
Director, ZTE
India

Sanjeev Keskar
Managing Director Sales, India & SEA, PMC-Sierra

Brief Bio: Sanjeev Keskar has served as Managing Director of Sales, India & SEA, at PMC-Sierra since January 2010. Prior to this appointment he was Country Manager, Sales, at Freescale Semiconductor from 2005 to 2009 where he led design win and revenue growth for the India sales operations. Prior to that Mr. Keskar was the Country Manager, India, for AMD Far East Ltd. from 2001 to 2005. There he started the company's India operations as the first Country Manager with a three person team and established AMD India in four years with all major OEM and channel wins. Mr. Keskar has also held senior management positions at National Semiconductor, Max India Ltd. (Avnet India), and Continental Device India Ltd. Overall, he has more than 26 years of experience and has spent 20 years in semiconductor sales. Mr. Keskar received a Master's degree in Management Science and a Bachelor's of Engineering and Technology from Pune University.

Madhawesh Kulkarni
VP of Engineering and Offer Management in the Carrier Services and Solutions (CSS)
Aricent Inc.

***Brief Bio*:** With more than 19 years of experience in IT/Telecom industry, Madhwesh has worked closely with more than 40 telecom service providers globally. Before joining the Aricent Group, Madhwesh worked with Wipro. As one of the founder members of Telecom Service Provider Business Unit of Wipro, he provided strategic inputs to leading Telecom Operators across USA, Europe, Middle East and Japan. He was also associated with all major OSS-BSS ISVs and telecom equipment vendors in various roles and capacities. He was also on the board of Tele Management Forum as an advisory director. A veteran in the communications industry, Madhwesh holds a Bachelors degree in Electronics and Communication Engineering from REC Surathkal, Karnataka, India.

Pranesh Babu K
CTO, SIFY

***Brief Bio*:** Pranesh Babu K currently holds the position of Chief Technology Officer for Sify Technologies Ltd and is responsible for the Technology strategy of the company. He Joined Sify Technologies in Oct 2000 and has worked in various capacities within the organization. Prior to becoming the CTO he has handled responsibilities in the area of network, data center and voice technology which includes engineering, operations and projects. He has been the architect of sify's network expansion, Data center and voice services. He started his Career with HCL Ltd and moved onto work with Hutchison Max Telecom as Chief Network Engineer, where he set up the first Radio paging network in India and Reliance Telecom Ltd as Project Manager, involved in Access network design before joining Sify Technologies. He holds an Engineering degree from university of Mysore in Electronics and Communications.

Ajay Ranjan Mishra
Global Head of Industry Environment - India & Emerging Markets
Nokia Siemens Networks

Brief Bio: Mr Ajay Ranjan Mishra is the Global Head of Industry Environment - India & Emerging Markets, Global CTO Office for Nokia Siemens Networks. Ajay graduated in 1997 from the University of Delhi with Masters of Technology in Microwave Electronics. Since his graduation, he has been working in Nokia/ Nokia Siemens Networks and has worked in all six continents. His previous roles included Global Head of Business Development (Emerging Markets) and Global Head of Services Innovation Management. Ajay has authored more than half a dozen research papers in the Technical and Management domain, published both internally and internationally. He has also authored three books on Cellular Technologies (published by John Wiley & Sons). Ajay is a member of ITU-APT, sits on academic board of IIM Ahmedabad's Telecom Center of Excellence and is also a Vice-President of GISFI (Global ICT Standardization for India). He is regularly invited by industry and universities (including likes of MIT, Boston) to speak on topics related to Cellular technology. Ajay's current interests are issues associated with innovations and development of the cellular network globally, both technically and commercially with emphasis on Emerging markets. He is currently based in New Delhi, India.

Stephen Miles
Vice President, Service Assurance, Asia Pacific,
CA Technologies

***Brief Bio*:** Stephen Miles is vice president of the Service Assurance business unit for the Asia Pacific region. Based in Singapore, Stephen is responsible for strategy development and growing the revenue of the Service Assurance portfolio across the region. In this role, he ensures that the service assurance strategy for CA Technologies is well executed to help customers optimize their business service performance across physical, virtual and cloud environments. In addition, Stephen drives the service assurance business for communication service providers (CSPs) for Asia Pacific, helping CSPs proactively manage and monitor all parts of their operations with CA Technologies service assurance solutions. Stephen has more than 20 years of IT software and networking experience. He ran the regional business operations for leading networking and software management organizations including Bay Networks, Nortel and EMC in Asia Pacific. Prior to joining CA Technologies in 2009, Stephen was vice president of Sales for the Infrastructure Management Group at EMC, where he specialized in service assurance solutions for service providers and enterprises. Stephen has a degree equivalent from Windsor & Maidenhead College (Business School).

Vishal Sharma
Principal Technologist
Metanoia, Inc.

***Brief Bio*:** Vishal Sharma is Principal Technologist at Metanoia, Inc., a niche Bay-area firm providing deep-dive technical expertise to clients in telecom network- and systems-design and strategy. Metanoia, Inc. has helped players across the telecom ecosystem (spanning chip/semi-conductor companies, system vendors, operators/carriers, technology houses, and telecom software and tool companies) solve complex problems by providing services in technology strategy, architecture & design trade-offs, product development, hardware/software architecture, & competence building. Vishal is a seasoned international technologist, telecom industry expert, and entrepreneur with 20 years of experience spanning consulting, industry, academia, labs., and research. He is currently leading an industry initiative that is focusing on how to lower carriers' total cost of ownership (TCO) through better assessment and optimization of a carrier's business models, operations, networks, and technology. He serves on the Scientific Committee of the MPLS & Ethernet World Congress, on the Advisory Board of Carriers World Asia, and on the Committees of FutureNet, iPOP, and a number of international conferences. He has been a Guest Editor of 4 Feature Topic Issues of the IEEE Communications Magazine. He earned his B. Tech (EE) from IIT Kanpur, and MS (Signals & Systems), MS (Computer Engineering), and Ph.D. (ECE), from UC Santa Barbara.

Upendra Manyam
Chief Technology Officer
Commtel Networks, India

Brief Bio: Head of Emerging technologies at Commtel Networks, Dr. Upendra has over the years become one of the mainstays of the company. His Doctorate and M.S in Fiber Optic Materials from Rutger University, USA are just a few feathers in his illustrious cap of life's achievement. After a B. Tech. in Ceramic Engineering from I.T.B.H.U, Varanasi and 15 years of experience in development and application of fiber optic technologies, his efforts are still concentrated to master the field of Optics through constant adoption of novel converged communications. Prior to Commtel he worked at Nufern, on optical fiber design and processing also developing a unique dispersion managed high-data-rate fibers while at Corning Incorporated. Not resting on the laurels of 12 US Patents, several Research Papers to his credit and serving on the Fiber Optics Panel of the US National Science Foundation's SBIR program, he at Commtel is deeply involved in integrated network design and architecture related to DWDM, SDH/Sonet and Ethernet technologies over optical fibers. A thorough professional, he is a perfect mix of academic brilliance meeting real life application, an asset to any organization.

P. S. Dhekne
Raja Ramanna Fellow, BARC
Consultant to PSA Office, Government of India

Brief Bio**:** P. S. Dhekne is Raja Ramanna Fellow; in Bhabha Atomic Research Center (BARC), Associate Director and a Scientific Consultant to Principal Scientific Adviser to the Government of India. He is a member of technical advisory committee for setting up National Knowledge Network (NKN). NKN is an initiative of Government of India to bring together all the stakeholders in Science, Technology, Higher Education, Research and Development, GRID Computing, e-governance with speeds scalable eventually up to the order of 10s of gigabits per second.

Dr. Govind
Senior Director,
Ministry of Communications and Information Technology, MCIT
Government of India.

Syam Dhodapkar
BARC

Massimo Di Blasio
Director, Carrier Business Development
Finisar Corporation

Brief Bio: Massimo Di Blasio joined Finisar in 2007 through the acquisition of Kodeos Communications and currently serves as the Director of Carrier Business Development as well as Product Line Director of Linecard Solutions. From 1997 to 2007, he served in various R&D, Business Development and Sales and Marketing roles for Kodeos Communications, Aeroflex, JDSU and Epitaxx. Dr. Di Blasio holds a B.Eng in Electrical Engineering from Concordia University in Montreal, Canada, and a M.Sc. and a Ph.D. in Semiconductor & Applied Physics from Université Montpellier II in Montpellier, France.

Nitin Bhandari
Associate Vice President, New Products & Partnerships
Vodafone India Limited

***Talk Title*:** Thinking outside the network

***Abstract*:** Over past few years, the growth of telecom products and services in the India was primarily driven by (a) liberalization leading to the influx of capital and technology, and (b) adoption of innovative business models such as the "India Model". These drivers resulted in the lowering of telecom product prices and subsequently led to a high penetration amongst the masses. Telephony is no longer seen as a means to connect, rather it is seen as a means for wider inclusion. The recent successes have led to an exponential rise in the expectations from customers on the role that Telecoms can play in furthering the growth of the country. There has also been a rethink amongst the industry on the levers that could be pressed to further the growth witnessed by the industry in past. This talk will discuss the evolutionary and revolutionary innovation opportunities that Indian telecom operations can leverage on to sustain growth and to support government's initiatives of financial inclusion and improvement in urban and rural life. The talk will also discuss the technology and ecosystem advances that be successfully leveraged to reach the goal. The talk will focus on the opportunities in the area of M2M, mobility and cloud domains.

***Brief Bio*:** Nitin Bhandari is Associate Vice President at Vodafone India Limited. In his current role, he is responsible for driving the conceptualization and development of new products & partnerships for the Enterprise segment. His current focus includes M2M, Cloud, mobility and hosted product ecosystems. Nitin specializes in new products conceptualization, operating models, technology trending and benchmarking paradigms. Nitin has spoken at a number of industry events across Asia, Europe and Americas. He is widely quoted in industry publications. He co-authored "GB924 - Service Model Framework" published by the TeleManagement Forum. He was also the contributing editor of "Telecom Billing Dictionary" published by the Althos Publishing. Prior to Vodafone, Nitin held the position of AVP at frog design where he was responsible for managing the innovation strategy practice for the APAC region. Earlier, he worked as Consulting Partner at Wipro Technologies where he was responsible for running the Business Advisory practice for the Telecoms & Media industry vertical. Nitin holds a B.Tech (Honours) in Computer Science and Engineering from the Institute of Technology-BHU.

Steering Committee

Ashwin Gumaste (Chair of the Steering Committee)
J.R. Isaac Chair
Dept of CSE, IIT Bombay

Brief Bio: Ashwin Gumaste is currently the James R. Isaac Chair and faculty member in the Department of Computer Science and Engineering at the Indian Institute of Technology (IIT) Bombay. He was a Visiting Scientist with the Massachusetts Institute of Technology (MIT), Cambridge, USA in the Research Laboratory for Electronics from 2008 to 2010. He was previously with Fujitsu Laboratories (USA) Inc in the Photonics Networking Laboratory (2001-05). He has also worked in Fujitsu Network Communications R&D (in Richardson TX) and prior to that with Cisco Systems in the Optical Networking Group (ONG). His work on light-trails has been widely deployed and recognized by both industry and academia.

His recent work on the high-speed indigenous router has been adopted by tier-1 service providers and also resulted in the largest ever acquisition between any IIT and the industry. Ashwin has 20 granted US patents and over 30 pending patent applications.

Ashwin has published about 120 papers in refered conferences and journals. He has also authored three books in broadband networks called DWDM Network Designs and Engineering Solutions (a networking bestseller), First-Mile Access Networks and Enabling Technologies and Broadband Services: User Needs, Business Models and Technologies for John Wiley.

Owing to his many research achievements and contributions, Ashwin was awarded the Government of India's DAE-SRC Outstanding Research Investigator Award in 2010 as well as the Indian National Academy of Engineering's (INAE) Young Engineer Award (2010).

He has served Program Chair, Co-chair, Publicity chair and workshop chair for IEEE conferences and as Program Committee member for IEEE ICC, Globecom, OFC, ICCCN, Gridnets etc. Ashwin is also a guest editor for IEEE Communications Magazine, IEEE Network and the founding Editor of the IEEE ComSoc ONTC's newsletter Prism. He is the Chair of the IEEE Communication Society's Technical Committee on High Speed Networks (TCHSN) 2011-2013. He has been with IIT Bombay since 2005 where he convenes the Gigabit Networking Laboratory (GNL): www.cse.iitb.ac.in/gnl. The Gigabit Networking Laboratory has secured over 8 million USD in funding since its inception and has been involved in 4 major technology transfers to the industry. Ashwin can be reached through www.ashwin.name.

Helmut Schink
Head of Standards Wireline, Service Delivery and Media
Nokia Siemens Networks (NSN), Germany

Brief Bio: Helmut Schink is the Head of Standards Wireline, Service Delivery and Media, responsible for standardization and regulation. He is also vice-chair of ITU-T SG 15. His previous engagements include Vice-chair of ITU-T SG 13, VC of the open IPTV Forum, member of the board of the IPSphere Forum, member of the Board of the Telemanagement Forum, Member of the board of directors of ICANN and chair of ETSI project TIPHON on IP Telephony. Over 25 years in business, especially public communication networks, holding various technical and management functions marketing, like strategic product planning, business development and

standardization, Corporate management and in strategic business development, development of semiconductor processes for GaAs high speed and low noise devices and basic research in micro-analytics. Studied Physics at Technical University of München and holds a Doctor degree in the area of micro-analytics and semiconductor physics.

P. S. Dhekne
Raja Ramanna Fellow, BARC
Consultant to PSA Office, Government of India

Brief Bio: P. S. Dhekne is Raja Ramanna Fellow; in Bhabha Atomic Research Center (BARC), Associate Director and a Scientific Consultant to Principal Scientific Adviser to the Government of India. He is a member of technical advisory committee for setting up National Knowledge Network (NKN). NKN is an initiative of Government of India to bring together all the stakeholders in Science, Technology, Higher Education, Research and Development, GRID Computing, e-governance with speeds scalable eventually up to the order of 10s of gigabits per second.

Rohan Nachane
General Manager
JDSU, India

Brief Bio**:** Rohan Nachane is presently General Manager (Sales) handling Key Telcos and Network Equipment Manufacturers for JDSU in India. Rohan Nachane leads a team handling Key Accounts and is personally based out of Mumbai. Rohan has been with JDSU since 2004 handling Key Accounts like Reliance, TATA, Bharti , NSN etc. Rohan has over 21 years of Telecommunications Test and Management experience in Sales management for wireless and wireline testing.

Upendra Manyam
Chief Technology Officer
Commtel Networks, India

Brief Bio: Head of Emerging technologies at Commtel Networks, Dr. Upendra has over the years become one of the mainstays of the company. His Doctorate and M.S in Fiber Optic Materials from Rutger University, USA are just a few feathers in his illustrious cap of life's achievement. After a B. Tech. in Ceramic Engineering from I.T.B.H.U, Varanasi and 15 years of experience in development and application of fiber optic technologies, his efforts are still concentrated to master the field of Optics through constant adoption of novel converged communications. Prior to Commtel he worked at Nufern, on optical fiber design and processing also developing a unique dispersion managed high-data-rate fibers while at Corning Incorporated. Not resting on the laurels of 12 US Patents, several Research Papers to his credit and serving on the Fiber Optics Panel of the US National Science Foundation's SBIR program, he at Commtel is deeply involved in integrated network design and architecture related to DWDM, SDH/Sonet and Ethernet technologies over optical fibers. A thorough professional, he is a perfect mix of academic brilliance meeting real life application, an asset to any organization.

Madhukar Pitke
IEEE Life Fellow

Brief Bio: Pitke Madhukar Vishwanath has contributed to the development of computer electronics and telecommunications technology for over 40 years. He pioneered the development of a switching system for a mobile network that was forerunner to the current ad-hoc networks. As founder director of the Center for Development of Telematics - CDoT (1984) he guided the development of technology for central office switching systems

in the late 80s. Over 50 million lines that were delivered that formed a significant portion of the Indian network around 2000. He directed the development of a large parallel processor using a unique SAMD architecture for weather research. He has been keenly interested in education and training and has helped in setting up several educational and research institutes. This includes the Dept of Computer Science of the University of Mumbai. With support from UN agencies and the late Prof Abdus Salam (Nobel Laureate) at ICTP Trieste, he organized several workshops and projects during 1987-95 for training scientists and engineers in advanced communications technology around the world. He has been a speaker at numerous events organized by IEEE, ITU and other leading organizations. He has numerous publications and presentations in several leading professional journals and conferences. He worked in visiting capacity at the University of Pisa, the Max Planck Institute in Munich and the Carnegie Mellon University at Pittsburgh. He was an Adjunct Professor at the International Institute of Information Technology (IIIT) Bangalore. He is a Life Fellow of the IEEE, the Indian Academy of Sciences and the Institution of Electronics and Telecommunication Engineers and is closely associated with the Bombay Center of IEEE. His current activities include development of low cost wireless ICT solutions and assisting young entrepreneurs.

Vishal Sharma
Principal Technologist
Metanoia, Inc.

***Brief Bio*:** Vishal Sharma is Principal Technologist at Metanoia, Inc., a niche Bay-area firm providing deep-dive technical expertise to clients in telecom network- and systems-design and strategy. Metanoia, Inc. has helped players across the telecom ecosystem (spanning chip/semi-conductor companies, system vendors, operators/carriers, technology houses, and telecom software and tool companies) solve complex problems by providing services in technology strategy, architecture & design trade-offs, product development, hardware/software architecture, & competence building. Vishal is a seasoned international technologist, telecom industry expert, and entrepreneur with 20 years of experience spanning consulting, industry, academia, labs., and research. He is currently leading an industry initiative that is focusing on how to lower carriers' total cost of ownership (TCO) through better assessment and optimization of a carrier's business models, operations, networks, and technology. He serves on the Scientific Committee of the MPLS & Ethernet World Congress, on the Advisory Board of Carriers World Asia, and on the Committees of FutureNet, iPOP, and a number of international conferences. He has been a Guest Editor of 4 Feature Topic Issues of the IEEE Communications Magazine. He earned his B. Tech (EE) from IIT Kanpur, and MS (Signals & Systems), MS (Computer Engineering), and Ph.D. (ECE), from UC Santa Barbara.

Conference Venue

F. C. Kohli Auditorium

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