networks 2006

12th International Telecommunications Network Strategy and Planning Symposium

November 6 - 9, 2006
New Delhi, India

Final Programme

Technical Sessions

Tuesday, November 7

Regency Ballroom II

09:00 - 09:30 Opening of the Conference

Welcome Speech
R. Thanawala, Symposium Chair

Introduction to the Technical Programme
O. Gonzalez-Soto, Technical Programme Chair

Regency Ballroom II

09:30 - 11:00 Keynote 1

Turning Communications Innovations into Enablers for Economic Growth - Top 5 Challenges
G. Young, Chief Technology Officer, Tata Teleservices, India
R.N. Padukone, Sr. Deputy Director General, Telecommunications Eng. Center, Govt. of India

What role does innovations in communications play in growing the national economy? How are the legislative and competitive processes playing out and how well are they supporting the growth of the economy in India? What are the toughest challenges? What are the lessons learned that should serve as guidance to the industry - to the strategies followed by operators, vendors, integrators, standards bodies, etc. who are looking to accelerate time to introduction of new technologies and services? Two perspectives will be provided: an operator's perspective by Mr. Greg Young, and a Govt. of India perspective by Mr. R. N. Padukone.

11:00 - 11:30 Coffee Break

Regency Ballroom II

11:30 - 13:00 Plenary Session 1

Challenges and Progress towards Convergence
Chair: O. Gonzalez-Soto, ITU Consultant, Madrid, Spain

T. Murakami, NTT Corp., Tokyo, Japan
T. Harris, BT Group, Singapore

Convergence in its different dimensions is driving the future of the Telecom sector mainly through the new services to customers and the inherent economies of scale. This session will address the analysis of main factors for success and perspectives from key players like the Multiservice Forum and leading operators on fixed and mobile services. Current progress, expectations, benefits, and encountered challenges will be treated and discussed by participants.

13:00 - 14:00 Lunch Break

14:00 - 15:30 Technical Session 1 in Regency Ballroom II

Economics of Convergence
Sessionchair: O. Gonzalez-Soto, ITU Consultant, Madrid, Spain

Paving the Way for a Next Generation Business Model for Carriers
J. Schäfer, Arcor AG, Eschborn, Germany

Economics of Cellular and Wireline Voice Convergence
J. Borger, P. Cleary, I. Kanu, Y. Krishnan, Lucent Technologies, Holmdel, USA

Economics of NGN Deployment Scenarios: Discussion of Migration Strategies for Voice Carriers
B. Jacobs, T-Systems Enterprise Services GmbH, Darmstadt, Germany

Economic Comparison of Delivery Platforms for Converged Services
E. M. Aguilar, S. Prakash, A. Saleh, Lucent Technologies, Holmdel, USA

14:00 - 15:30 Technical Session 2 in Regency Ballroom III

Traffic Matrix - Estimations and Forecasting
Sessionchair: K. Sezaki, University of Tokyo, Japan

Dynamic Weight Changes for Traffic Matrix Estimation
S. Eum, R. Suryasaputra, B. Lloyd-Smith, RMIT University, Victoria, Australia; R. J. Harris, Massey University, Palmerston North, New Zealand

Combining LDP Measurements and Estimation Methods for Traffic Matrices in IP/MPLS Networks
S. Schnitter, T. Morstein, T-Systems Enterprise Services GmbH, Darmstadt; M. Horneffer, T-Com, Münster, Germany

Service-Demand-Forecasting Method using multiple Data Sources
K. Nishimatsu, A. Inoue, T. Kurosawa, NTT Corp., Tokyo, Japan

Study on Process Model for IP Traffic Estimation
M. Tsujino, M. Shin-no, H. Kawano, Y. Hoshiai, NTT Corp., Tokyo, Japan

15:30 - 16:00 Coffee Break

16:00 - 17:30 Technical Session 3 in Regency Ballroom I

Convergence, Architectures and IMS
Sessionchair: B. Craignou, France Télécom, Paris, France

Redundancy and Scalability in IMS
M. Hammer, Lucent Technologies, Nuremberg, Germany

Interworking IPTV Services with IMS
A. Bodzinga, S. White, Lucent Technologies, Holmdel, USA

Triple Play Support for the Next Generation Internet
M. Baldi, Politecnico di Torino, Italy

A Study of Authentication Method on Fixed Mobile Convergence Environments
M. Matsumoto, NTT Corp., Tokyo, Japan

16:00 - 17:30 Technical Session 4 in Regency Ballroom II

Traffic Flow - Analysis and Modelling
Sessionchair: H. Yoshino, NTT Corp., Tokyo, Japan

Flow Level Performance Approximations for elastic Traffic integrated with prioritized Stream Traffic
R. Malhotra, Lucent Technologies, Enschede; J. L. van den Berg, TNO Telecom, Leidschendam, Netherlands

Temporal Patterns in Size and Rate of Traffic Flows
M. Zhanikeev, Y. Tanaka, Waseda University, Tokyo, Japan

Advanced P2P Multiprotocol Traffic Analysis Based on Application Level Signature Detection
H. Bleul, E. P. Rathgeb, S. Zilling, University of Duisburg-Essen, Germany

Throughput Enhancement through Efficient Channel Assignment in Multi-radio Ad Hoc Networks
A. Sangwan, G. Dass, H. Saran, Indian Institute of Technology, Delhi; P. De, IBM, Delhi, India

16:00 - 17:30 Technical Session 5 in Regency Ballroom III

"On-Line" - Routing and Resilience
Sessionchair: P. Janeck, Magyar Telekom, Hungary

A Hierarchical and a Non-Hierarchical European Multi-Domain Reference Network: Routing and Protection
D. Mesko, G. Viola, T. Cinkler, Budapest University of Technology and Economics, Hungary

On-Line Routing and Bandwidth Allocation for Elastic Traffic and for its Restoration
P. Laborczi, Bay Zoltan Foundation for Applied Research, Budapest; T. Cinkler, Budapest University of Technology, Hungary

An Optimal Route Computation Method for GMPLS Based Survivable Network with a Tabu Search Algorithm for Weighted Constraint Satisfaction Problem
H. Furuya, N. Ogino, S. Konishi, H. Nakamura, KDDI R&D Laboratories, Saitama; T. Tanabe, T. Nitta, M. Sato, Mathematical Systems Inc., Tokyo, Japan

Considering BGP Routing for the Traffic Engineering of uncertain Traffic Demands
T. Schwabe, TU Munich, Germany

Regency Ballroom II

17:30 - 18:30 Hot Seat Session 1

The Promise of IMS - Myth vs. Reality
Chair: R. Thanawala, Bell Labs, Lucent Technologies, Holmdel, USA

S. Ahuja, VP Convergence Networks and Services Research, Bell Labs, Lucent Technologies, USA
B. Jarry-Lacombe, Network Design and Architecture, France Telecom

It takes between 10 to 14 months for an operator to introduce a new service. In the Internet world, its around three months. The promise of IMS is reducing time to revenue for new services including being able to cost effectively experiment with new services - withdrawing services that don't hit the mark and turning promising services into winners, all the time blending services to create value that users are willing to pay for. However there are lots of issues - interoperability, getting started costs, etc. Are these just matu-

rity issues associated with the introduction of any new change-the-paradigm technology, or are these so significant that the advantages of IMS are not likely to be realized? This hot seat session will be a lively exploration of views between two leading industry executives on both the business and technology issues surrounding IMS. Sid Ahuja, Vice President of the Converged Networks and Services Research Laboratory at Bell Labs, and a champion for IMS will present the case for IMS. Bernard Jarry-Lacombe, working in Network Design and Architecture at France Telecom will present an Operator perspective.

19:00 Get Together at the poolside of the Hyatt Hotel

Wednesday, November 8

Regency Ballroom II

09:00 - 10:30 Plenary Session 2

Opportunities in the Emerging Services Environment - Business Drivers
Chair: A. Ciarniello, Telecom Italia Mobile, Rome, Italy

A. Somma, Telecom Italia Mobile, Italy
J. Gross, Arcor, Germany
M. Bass, Lucent Technologies, USA

The telecom sector expected revenue evolution for convergent services in the medium term includes new classes of services not only in the Communications area but also in new areas to Telecoms, such as publishing, video/multimedia as well as "long tail" services targeted to relatively small pockets of customers.
Technology evolution will enable portability of services in different domains both fixed and mobile, this represents an opportunity but poses a number of challenges to existing/traditional business models.
There are many challenges into this emerging model both from the Value Chain Dynamics side, including the partnership vs. competition new relations with Contact Owner/Provider, Operators and Platform/Technology Enablers, and from the Manufactures and Product requirement side. The discussion will also address:
- how to evaluate these emerging opportunities and some example of execution of new Business Models (such as the launch of commercial DVB-H service in Italy);
- what are the potential implications on the business innovation process for Operators and Manufacturers.

10:30 - 11:00 Coffee Break

11:00 - 12:30 Technical Session 6 in Regency Ballroom I

NGN Business Strategies
Sessionchair: B. Jarry-Lacombe, France Télécom, Paris, France

Exploring the Revenue Opportunity created by Migrating Voice and Data Services to an NGN Platform
R. Bailey, Analysys Consulting Ltd, Cambridge, Great Britain

Telecom Service Provider Go-to-Market Deployment Strategies for NGN Applications
S. Doshi, G. Patil, S. Prakash, N. Raman, Lucent Technologies, Holmdel, USA

Domains of Application for Backhaul Technologies in 3G Wireless Networks
P. Limaye, M. El-Sayed, Lucent Technologies, Holmdel, USA

11:00 - 12:30 Technical Session 7 in Regency Ballroom II

Resource Management & Route Planning
Sessionchair: T. Cinkler, Budapest University, Hungary

Resource Reservation in Advance for Content on-Demand Services
D. Hetzer, T-Systems International GmbH, Berlin;
I. Miloucheva, FH Bonn-Rhein-Sieg, Sankt Augustin;
K. Jonas, Fraunhofer Institute SATCOM Center, Sankt Augustin, Germany

Gossip-Based Aggregate Computation with Low Communication Overhead
S. Kashyap, University of Maryland, USA; S. Deb, K. V. M. Naidu, R. Rastogi, A. Srinivasan, Bell Labs Research India, Bangalore, India

An Ant-Monitored Path-Flow Routing Algorithm for Next Generation Networks
H. Lee, G. Choi, Sungkyunkwan University; S.-B. Kim, Korea Telecom, Korea

ACIP: An Access Control and Information Protocol for Ethernet-based Broadband Access Networks
D. Duchow, D. Timmermann, University of Rostock;
T. Bahls, Siemens AG, Greifswald, Germany

11:00 - 12:30 Technical Session 8 in Regency Ballroom III

Network Security
Sessionchair: U. Chandrashekhar, Lucent Technologies, Holmdel, USA

Challenges of Securing an Enterprise and Meeting Regulatory Mandates
S. Sabnis, U. Chandrashekhar, F. Bastry, Lucent Technologies, Holmdel, USA

AT&T Carrier VoIP Security Architecture
W. Marshall, F. Faryar, K. Kealy, G. de los Reyes, I. Rosencrantz, R. Rosencrantz, C. Spielman, AT&T, USA

Identity Based Encryption using MRSA in Data Transfer through VPN
S. Rajalakshmi, Deemed University; S. K. Srivatsa, Anna University, Tamil Nadu, India

An Analytical Framework for Route Failure Time of Multiple Note-Disjoint Paths in Mobile Ad hoc Networks
A.M. Abbas, Aligarh Muslim University, India

12:30 - 14:00 Lunch Break

14:00 - 15:30 Technical Session 9 in Regency Ballroom I

NGN Service Enablers
Sessionchair: B. Jain, IIT Delhi, India

Broadband Forecasting Models for Content Services
K. Stordahl, Telenor, Fornebou, Norway; B. Farias Craignou, France Télécom R&D, Issy Moulineaux, France

Evolution of Home Networks Enhanced by Broadband Service in the Next Generation Networks
T. Yokotani, K. Motoshima, S. Seno, K. Kikuchi, Mitsubishi Electric Corp., Kanagawa, Japan

Next Generation Networks: Regulation and interconnection in modern communications era
R. Goel, A. Metha, Seth Dua & Associates, New Delhi, India

14:00 - 15:30 Technical Session 10 in Regency Ballroom II

Network Evolution
Sessionchair: S. Schnitter, T-Systems, Germany

The Future of Transport - Evolution of Network Elements for Packet-oriented Transmission Backbone Networks
W. Frohberg, Alcatel Optical Networks Division, Stuttgart, Germany

Transport Technologies for Wireless Backbone Networks
Z. Sayed, Y. Hu, B. Tang, M. Mezhoudi, M. El-Sayed, Lucent Technologies, Holmdel, USA

Evolution of Access Networks to Support Video Quality Requirements
A. Dehili, Alcatel, Velizy, France

Providing Telecommunications Services for Rural Areas from HAP (High Altitude Platform): A Case Study in the Region of Hungary
T. Van Do, B. Gergö, L. Juhasz, J. Pakai, Budapest University of Technology and Economics, Hungary

14:00 - 15:45 Technical Session 11 in Regency Ballroom III

Network Reliability and Survivability
Sessionchair: W. Wieser, T-Systems Enterprise Services GmbH, Darmstadt, Germany

A new Approach for Designing the Next Generation Survivable Backbone Network
K.-S. Ho, K.-W. Cheung, The Chinese University of Hong Kong; M. Zhou, China Telecom, Beijing, China

Enterprise VoIP Reliability
C.-H. Kelvin Chu, H. Pant, S. H. Richman, P. Wu, Lucent Technologies, Holmdel, USA

Critical Infrastructure Analysis of Telecom for Natural Disasters
G. O'Reilly, A. Jrad, Lucent Technologies, Holmdel; T. Brown, S Conrad, Sandia National Laboratories, Albuquerque, USA

Availability Comparison of Opaque and Translucent Networks
A. Morea, I. Boyer Heard, France Télécom R&D, Lannion, France

Short-Term Strategies for Class of Service Differentiation in IP over Optics Network
R. Clemente, A. Del Pistoia, M. Bartoli, G. Ciochetto, Telecom Italia, Turin, Italy

15:30 - 16:00 Coffee Break

Regency Ballroom II

16:00 - 17:00 Hot Seat Session 2

Should Voice be Free? Alternative Emerging Business Models - Are they sustainable?
Sessionchair: A. Valdar, University College London, UK

A. Antonopoulos, Business School, University of Budapest, Hungary and partner at Working Knowledge Consulting Company
A. Das, BT, India

The apparent value of a voice call, once the staple source of revenue for network operators, has been declining at an alarming rate. Whether it is through the death of distance, the commoditisation due to competition, or the rise of voice over IP substitutes, the cellular and fixed network operators are experiencing rapid declines in price of voice. But is this trend to free voice sustainable? Are there viable new commercial models to cope with this? These and other questions will be addressed during this Hot Session, taking the perspectives of established network operators as well as new players.

Regency Ballroom II

17:15 - 18:30 Plenary Session 3

IPTV - Technology Solutions and Business Trends
Sessionchair: B. Jarry-Lacombe, France Télécom, Paris, France

A. Kapur, Alcatel, India
M. Borgne, France Télécom R&D, Paris, France

This session will focus on the video services that telcos are now offering on their DSL lines in an increasing number of countries. Anuj Kapur, Vice President & Head Sales, Alcatel India , will illustrate the evolution of the IPTV services and Michel Borgne, senior expert within France Telecom R&D Labs, will explain what are the networks issues and how the technical solutions evolve. This session will offer to participants a global overview on IPTV over DSL, today and tomorrow.

19:00 Conference Dinner at the poolside of the Hyatt Hotel

Thursday, November 9

Regency Ballroom II

09:00 - 11:00 Plenary Session 4

Access: The Last Mile - When is Copper at its End?
Chair: J. Gross, Arcor AG & Co. KG, Germany

O. Gordien, Alcatel, India
A. Ciarniello, Telecom Italia Mobile, Italy

SDSL, ADSL, ADSL2+, VDSL, VDSL2, FTTC, FTTB, FTTH,...?
Internet connectivity is a necessity for so many people now... to communicate, to get information, entertainment (e.g. IPTV, VoD) and to be a part of the internet community to distribute information, videos or pictures. Access decisions have huge leverage on the operator's ability to meet business objectives. An expert panel will discuss some of the key questions:
Who is in the best position to provide access to the end user - the mobile or fixed network operator, the Network provider or ISP?
What is the bandwidth demand for existing and future services?
What is the best and most economical access strategy for the Greenfield operator?
What about an operator who has an existing infrastructure?
What is the best access technology to serve these demands - WiMax, UMTS, Coax, Copper, FTTX?

11:00 - 11:30 Coffee Break

11:30 - 13:00 Technical Session 12 in Ballroom I

Network Operations Support
Sessionchair: R. Rastogi, Bell Labs Research Center, Bangalore, India
Maintenance Activities, Operations and Environment Conditions Impact on the Availability of Highly Reliable Optical Transport Networks
B. Basch, Verizon Labs, Welham; M. Mezhoudi, C.-H. Kelvin Chu, R. Goudreault, Lucent Technologies, Holmdel, USA

IMS Operations Savings and Time to Market Improvements
V. Katkar, M. Chu, D. Doherty, P. Wu, Lucent Technologies, Holmdel, USA

Using NGOSS Principles in today's OSS/BSS Projects
H. Goestl, T-Systems International GmbH, Berlin, Germany

e-Services Architecture
A. Barshefsky, H. Trickey, Lucent Technologies, Holmdel, USA

11:30 - 13:00 Technical Session 13 in Ballroom II

Network Optimization
Sessionchair: G. Sallai, Budapest University of Technology and Economics, Hungary

Planning of Pricing Grid based on Network Loads
M. Oughdi, B. Morin, France Télécom, Paris; A. Caminada, S. Lamrous, University of Technology of Belfort-Montbéliard, France

Dimensioning Transport Networks for VPNs over Capacities with Stepwise Costs
T. Cinkler, A. Kern, I. Moldovan, G. Sallai, Budapest University of Technology and Economics, Hungary

Optimization of IPTV Multicast Traffic Transport over Next Generation Metro Networks
J. Caja, Lucent Technologies, Holmdel, USA

Network Topology Design with Multiple Criteria
N. Kamiyama, NTT Corp., Tokyo, Japan

11:30 - 13:00 Technical Session 14 in Ballroom III

Specific Planning and Design Issues
Sessionchair: J. Gross, Arcor AG, Germany

Incorporating the Points of Presence within the Two-Level Topological Network Design Problem
S. Chamberland, Ecole Polytechnique de Montreal, Canada

A Location and Privacy Service Enabler for Context-Aware and Location-Based Services in NGN
S. Richter, A. Boehm, T-Systems Enterprise Services GmbH, Darmstadt, Germany

World Wide User Identification in Seven Characters with Unique Number Mapping
B. Gódor, Magyr Telekom, Budapest, Hungary

13:00 - 14:00 Lunch Break

14:00 - 15:45 Technical Session 15 in Ballroom I

Network Performance
Sessionchair: H. Saran, IIT Delhi, India

MPLS Network Requirements and Design for Carriers: Wireline and Wireless Case Studies
B. Tang, A. A. Akyamac, C.-H. Kelvin, Chu, R. Nagarajan, Lucent Technologies, Holmdel, USA

Design of Active and Passive Probes for VoIP Service Quality Monitoring
S. Agrawal, J. Ramamirtham, R. Rastogi, Lucent Technologies, India

Traffic Characteristics at OBS Edge Routers and its Impact on Dimensioning Wavelength Routed OBS Networks
F. Hartleb, T-Systems Enterprise Services GmbH, Darmstadt, Germany

End-to-End Performance Design Framework of MPLS Virtual Private Network Services across Autonomous System Boundaries
H. Yamada, NTT Corp., Tokyo, Japan

QoS Guaranteed and Reliable Network Architecture for Real-Time Applications over the Connection Oriented Internet
M. Gamage, M. Hayasaka, T. Miki, The National University of Electro-Communications, Tokyo, Japan

14:00 - 15:30 Technical Session 16 in Ballroom II

Wireless Network Planning
Sessionchair: M. Bass, Lucent Technologies, USA

Analysis of Network Architectures for Zigbee Sensor Clusters
P. M. Ameer, A. Kumar, D. Manjunath, R. Boyina, India

A new Approach to Capacity Growth Planning for CDMA Networks
D. Calin, P. Gardell, T. B. Morawski, L. Pinzon, R. Sackett, H. Zhang, Lucent Technologies, Holmdel, USA; A. Mackay, Lucent Technologies, Wellington, New Zealand

Spatial Optimisation: How Subscribers can help you Optimize your CDMA Network
M. Efthymiou, M. Flanagan, Lucent Technologies; A. Mackay, A. Dow, Lucent Worldwide Services, Wellington, New Zealand

14:00 - 15:30 Technical Session 17 in Ballroom III

Specific Modelling and Design Issues
Sessionchair: M. Mezhoudi, Lucent Technologies, Holmdel, USA

Transparency versus Complexity in Next Generation Networks
J. Dost, M. Schweigel, Detecon International GmbH, Dresden, Germany

NoteBOX with a Unified Messaging System
A. Manaf, M.Z. Catur, Bandung Institute of Technology, Bandung, Indonesia

Scatternet Formation in High-Rate Wireless Personal Area Networks by Integer Linear Programming
P. Laborczi, A. Török, L. Vajda, G. Gordos, Bay Zoltán Foundation for Applied Research, Budapest, Hungary

Intricacies of Charging Telecom Services
A. Ravakiran, Siemens Public Communication Networks Ltd., Bangalore, India

15:30 - 16:00 Coffee Break

Regency Ballroom II

16:00 - 17:00 Plenary Session 5

Broadband Wireless Perspectives
Chair: G. Sallai, Budapest University of Technology and Economics, Hungary

A. Wahi, Alcatel, India
P. Janeck, Hungarian Telekom, Budapest, Hungary

One of the most prominent trends in today's telecommunication landscape is the widespread deployment of wireless technologies as the "last mile" connection for delivering POTS and broadband Internet access. The emergence of different wireless local loop (WLL) technologies can unlock competition, enabling new operators to bypass existing wireline networks and spare the costly deployment of copper-line, cable or fiber links. This section will focus on the benefits of such WLL solutions, with special emphasis on WiMAX, the most promising WLL technology.

Regency Ballroom II

17:00 - 17:45 Keynote 2

The Future of Networks - Summarizing Trends
A. Valdar, University College London, UK

Never have the challenges facing this industry been so great! Having survived the decimation of the market crash of 2000, the Telcos are now facing not only technical and cost challenges - but also the profound reshaping of the commercial model and values relating to their services. Structurally, the industry is witnessing a rise in mergers and acquisitions as the long-awaited consolidation of the operators and the equipment manufactures takes off. In addition, the value of switched voice and bandwidth - the staple money-generating services for Telcos - continues to diminish, driven by the rise of voice-over-IP-based services and the rapid rollout of broadband to the consumer market. The current responses to this situation include the adoption of next-generation network technologies to drive down costs through platform integration - together with all the forms of service convergence (fixed-mobile, communications and entertainment, "triple" and "quadruple play", etc). This presentation considers how these factors are creating such a challenging agenda for the major network operators over the next five years.

17:45 - 18:00 Closing Remarks in Regency Ballroom II

R. Thanawala, General Chairman of Networks 2006

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