

A photograph of the Golden Gate Bridge in San Francisco, California. The bridge is a suspension bridge with two main towers and numerous vertical cables. The sky is overcast and grey. The bridge spans across a body of water, with hills visible in the background. The text is overlaid on the bottom portion of the image.

**2006 1st IEEE International Workshop on
Bandwidth on Demand (BoD 2006)**

BoD 2006, San Francisco, California, USA, November 27, 2006

2006 1st IEEE International Workshop on Bandwidth on Demand (BoD 2006)

Workshop Co-Chairs:

Takeo Hamada, David Hausheer, Melody Moh,
Richard Rabbat, Burkhard Stiller, Jean Walrand



Introduction

- ❑ **Bandwidth trading markets** emerged since 1990's
 - But seriously hit by economic downturn in 2001
- ❑ Now bandwidth trading gains new momentum
 - Application services require short-termed bandwidth assignments
 - Peer-to-peer (P2P) and next generation networks (NGN) provide new potentials
 - Recent technical advances in telecommunications are the key driver
- A **fresh and innovative** look at bandwidth on demand becomes necessary!

Technical Focus of this Workshop

- ❑ **Economic studies and modeling** of market and business models in carrier and service provider networks
- ❑ **Technical design** of scalable, reliable, and cost-effective bandwidth trading infrastructures, including market mechanisms as a way to increase efficiencies
- ❑ **Legislative and regulatory issues** related to the Telecom Act and in comparison to other commodities markets such as the electric grid
- ❑ **Industrial developments** of new technologies that facilitate or create impediments to bandwidth on demand

Workshop Statistics

- Submissions: 14
- Reviews: 54
- Accepted Papers: 10
 - Europe: 5
 - North America: 3
 - Africa: 1
 - Asia-Pacific: 1

- Attendees: 23+

Acknowledgement of TPC / Reviewers

Panayotis Antoniadis

Greg Bernstein

Georg Carle

Costas Courcoubetis

György Dán

Vasilios Darlagiannis

Zoran Despotovic

Antonis Dimakis

Chris Edwards

Adrian Farrel

Tiago Fioreze

Takeo Hamada

Oliver Heckmann

Rahul Jain

Charis Kaskiris

Ruediger Martin

Michael Menth

Marco Milanesio

Cristian Morariu

Huw Oliver

Lyndon Ong

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Richard Rabbat

Giancarlo Ruffo

Vik Saxena

Rossano Schifanella

Vishal Sharma

Kohei Shiimoto

Jean Walrand

Acknowledgements

- BoD Keynote Speaker, Panelists and Session Chairs
- BoD Workshop Co-Chairs
- IEEE Globecom 2006 Expo Co-Chairs
 - Norival Figueira, Dilip Krishnaswamy
- IEEE
 - Gayle Weisman, Ann Burgmeyer, Diana Krynski, Jennifer Dedrick, Patricia Thompson

Agenda (Morning)

- 09:00 - 09:15 **Welcome**
- 09:15 - 10:15 **Keynote (Pravin Varaiya)**
- 10:15 - 10:30 **Coffee Break**
- 10:30 - 12:10 **Session 1: Pricing, Auctions, and Markets
(Session Chair: Greg Bernstein)**
- 12:10 - 13:30 **Lunch Break**

Agenda (Afternoon)

- 13:30 - 14:30 **Panel (Moderator: Melody Moh)**
Panelists: Lyndon Ong, Kohei Shiomoto, Jean Walrand, Young Lee
- 14:30 - 15:45 **Session 2: Traffic Engineering, Resource Allocation, and QoS**
(Session Chair: Kohei Shiomoto)
- 15:45 - 16:00 **Coffee Break**
- 16:00 - 17:15 **Session 3: Peer-to-Peer and Next Generation Networks**
(Session Chair: David Hausheer)

Have a Good Workshop Start!

Thank you for attending!

We wish you a lively and interesting Workshop
with many interactions.

Keynote

Agglomeration Economies, Tolls, and Demand for Bandwidth

Keynote Speaker:

Pravin Varaiya (University of California)

Session 1: Pricing, Auctions, and Markets

Session Chair: *Greg Bernstein (Grotto Networking)*

A Heuristic Approach to Revenue Maximisation in a Competitive
Bandwidth-on-Demand Wireless Market

Pricing Resources on Demand

An Experimental Analysis of a Combinatorial Market Mechanism
for Bandwidth Trading

The Survival of the Unfittest

Panel

Moderator: *Melody Moh (San Jose State University)*

Developing the Technology and Market for Bandwidth on Demand

Panelists:

Young Lee (Huawei)

Lyndon Ong (Ciena)

Kohei Shiimoto (NTT Labs)

Jean Walrand (University of California)

Session 2: Traffic Engineering, Resource Allocation, and QoS

Session Chair: *Kohei Shiimoto (NTT Labs)*

Traffic and Network Engineering in Emerging Generation
IP Networks: A Bandwidth on Demand Model

IP Bandwidth on Demand and Traffic Engineering via
Multi-Layer Transport Networks

A Demand-based Approach to Optimal Resource
Allocation for Network Services with Quality of Service
(QoS) Requirements

Session 3: Peer-to-Peer and Next Generation Networks

Session Chair: *David Hausheer (University of Zurich)*

A Unified Model for Bandwidth Adaptation in Next
Generation Transport Networks

Bandwidth on Demand Services for European Research
and Education Networks

A Techno-Legal Perspective on Peer-to-Peer-Based
Bandwidth on Demand Management