The First Annual Emerging Information Technology Conference

Innovation and Entrepreneurship

November 9-10, 2001, Newark Airport Marriott Hotel, Newark, New Jersey, U.S.A.

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Chinese Institute of Engineers - U.S.A.
Monte Jade Science and Technology Association
Chinese Association of Science and Technology
Chinese American Academic and Professional Society
The Photonics Society of Chinese Americans
Chinese Investors Association
Chinese Entrepreneur Association

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Wireless & Optical Communications Conference

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Shih-Fu Chang, Columbia University

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Ya-Qin Zhang, Microsoft Research China

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Jeane Chen, Kintera Inc.
Kent H. Cheng, Cohen, Pontani, Lieberman & Pavane

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Conference Program

Day 1 (November 9, 2001)

08:00-09:00 AM Registration

09:00-09:30 AM Opening Remarks
Conference Chair: Hwa-Nien Yu, Academia Sinica

"Perspectives of Information Industry in Taiwan"
Chintay Shih, President, Industrial Technology Research Institute

09:30-10:50 AM P1 - Plenary Session I: Emerging Information Technologies: Trends and Opportunities
Chair: Jeane Chen, Kintera Inc.
Organizer: Kevin Lu, Telcordia Technologies

"Business Opportunity for the 3G Wireless and Mobile Internet Systems"
David Poticny, SVP, Lucent Technologies
"Emerging Optical Internet"
Nim Cheung, VP, Telcordia Technologies
"Atoms ⇒ Bits ⇒ Services: The New Ecosystem for Service Providers and the Technologies Required to Support It"
John Yin, President/CEO, PartnerCommunity, Inc.

10:50-11:00 AM Break

11:00 AM-12:20 PM P2 – Plenary Session II: Emerging Information Technologies: Trends and Opportunities
Chair: Ya-Qin Zhang, Microsoft Research China
Organizer: Shih-Fu Chang, Columbia University

"Designing Security into the Core Hardware of Information Appliances and Servers"
Ruby Lee, Professor, Princeton University
"Directions and Achievements of Networked Multimedia Technologies Research Activities in Taiwan"
Pao-Hsu Shih, Director, Institute for Information Industry
"Silicon Technology Development in the New Millennium"
Tak H. Ning, IBM Fellow, IBM T.J. Watson Research Center

12:30-2:00 PM Lunch

02:00-03:45 PM Parallel Technical/Business Sessions

T1 – Technical Session I: Web Services and Collaborative Commerce
Chair: Hung-Yang (Henry) Chang, IBM T.J. Watson Research Center
Organizer: Subrina Chang, Kintera Inc.

"Natural User Interface for Web Services"
Jian Wang, Microsoft Research China
"Kintera Sphere - Internet Marketing for Nonprofits"
Jeane Chen, kintera Inc.
"Enhanced Web Services for Dynamic B2B Integration"
Liang-Jie Zhang, IBM T.J. Watson Research Center
"A Framework for Model Specification and Coordination of Business Processes"
Ying Huang, IBM T.J. Watson Research Center

B1 – Business Session I: Partnering Opportunities
Chair: Chih-Lin I, AT&T Labs
Organizer: Hong Shi, Fashion River

"New Wireless Technologies and Products Center in Hangzhou"
David T. Sun, CTO, Eastern Communications Company
"3G WCDMA Mobile Device Baseband & Total Solution"
Wen-Yi Kuo, CTO, Wiscom Technologies
"Impact of Language-Computer-Interface on National Economy and Productivity"
Sing H. Lin, Technical Consultant
"The Future of Chinese Information Technology (CIT) - Natural Language Processing"
Victor C. Yeh, President, AlphaGram System, Inc.

03:45-04:15 PM Break

04:15-06:00 PM Parallel Technical/Business Sessions

T2 – Technical Session II: Component Technology (I)
Chair: Yuan-Chi Chang, IBM T.J. Watson Research Center
Organizer: Lih Y. Lin, Tellium Inc.

"MPEG-7 Multimedia Content Description Standard"
John R. Smith, Manager, IBM T.J. Watson Research Center
"Computational Biology: From Life Science to Deep Computing"
Lurng-Kuo Liu, Manager, IBM T.J. Watson Research Center
"MEMS Technology and Its Application to Optical Cross Connects"
Sangtae Park, Tellium Inc.

B2 – Business Session II: Venture Business Success Stories
Chair: Russell Hsing, Telcordia Technologies
Organizer: Dah-Weih Duan, InfoValue Computing Inc.

G.K. Chang, VP, OpNext
Kevin Whang, VP, Village Networks
Arun Kant, VP, Transtech Networks
Li Fung Chang, Mobilink Telecom

Day 2 (November 10, 2001)

09:00-09:30 AM Opening Remarks
Conference Chair: Ya-Qin Zhang, Microsoft Research China

09:30-10:50 AM P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies
Chair: Diana Liu, Cansbridge Capital Corp.
Organizer: Lance Lan, Vista Incubation Technology Corp.

Panelists:
Arding Hsu, President/CEO, Siemens Technology-To-Business Center
Paul Sung, SVP, AccroLynch LLC
Stephen M. Nagler, Esq., Phillips Nizer Benjamin Krim & Ballon LLP
Lie Hsu, Executive Director, Telcordia Technologies
James Hwang, Professor/Director, Lehigh University

10:50-11:00 AM Break

11:00 AM – 12:20 PM P4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes
Chair: Kent H. Cheng, Cohen, Pontani, Lieberman & Pavane
Organizer: Albert H. Wang, Phillips Nizer Benjamin Krim & Ballon LLP

Panelists:
Myron Cohen, Cohen Pontani Lieberman & Pavane
Sung Chul Whang, Phillips Nizer Benjamin Krim & Ballon LLP
Kent H. Cheng, Cohen, Pontani, Lieberman & Pavane
Albert H. Wang, Phillips Nizer Benjamin Krim & Ballon LLP

12:30 – 2:00 PM Lunch
Keynote Speech:

"Economic Development Strategies for the Era of Knowledge-based Economy"
Po-Chih Chen, Chairman, Council for Economic Planning & Development, Executive Yuan

02:00-03:45 PM Parallel Technical/Business Sessions

T3 – Technical Session III: Networking Technology
Session Chair: David T. Sun, Eastern Communications Company
Organizer: Fuchun Joseph Lin, Telcordia Technologies

"Mobile Internet"
Patrick Li, Lucent Technologies
"IP-Based Content Distribution and Delivery"
Cho-Yu Jason Chiang, Telcordia Technologies
"Business Infrastructure for Next Generation Networks"
Sandy Marble, Telcordia Technologies
"IP in Radio Access Network: Fact or Hypes"
Mooi Choo Chuah, Lucent Technologies

B3 – Business Session III: Entrepreneurship Development Workshop: Entrepreneur Character Building
Session Chair: Frank W. Lee, DuPont Pharmaceuticals Company
Organizer: Zhibin Lei, ModernCom Technologies

"Unique Entrepreneurship: A Tortoise Mentality"
Chris Pak, President/CEO, Molecular Targeting Technology
"Faith, Freedom and Entrepreneurship"
Nelson Lou, Managing Director, China Partners Group
Jeff Radov, Silicon Alley Seed Investors
Kari Laento, Houlihan-Ventura International Technology Investments

03:45-04:15 PM Break

04:15-06:00 PM Parallel Technical/Business Sessions

T4 – Technical Session IV: Component Technology (II)
Chair: Zon-Yin Shae, IBM T.J. Watson Research Center
Organizer: Tsen-Hwang Lin, Prefer Ventures

"SOI Circuit Design for High-Performance CMOS Microprocessors"
C. T. Chuang, IBM T. J. Watson Research Center
"Voice Portal and Voice ASP/Face Recognition: Technology and Reality"
Augustine Tsai, Bell Labs, Lucent Technologies
"Automation of Business Negotiation: Model and Architecture"
Haifei Li, IBM T.J. Watson Research Center

B4 – Business Session IV: Where Is the Money Going? Investment Trends and Strategies after the DotCom Meltdown and 911 Terror Attacks

Session Chair: Kun Deng, Lazard Freres/Lazard Asset Management
Organizer: Daniel Lou, New York Life Insurance Company

Sally Mak, Corporate Vice President, New York Life Insurance Company
Kun Deng, Director, Lazard Freres/Lazard Asset Management
Jonathan Lin, VP/CMT, Salomon Smith Barney
Mark Tang, Biotech Analyst and Senior Financial Advisor, Morgan Stanley
George Koo, President and CEO, Digital Systems, CPA, CFA

Conference Organizer

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BIOGRAPHY

Dr. Kevin W. Lu is Executive Director of Integrated Access and Operations for Telcordia Technologies in Morristown, New Jersey. He is responsible for leading a Department in Applied Research toward the following directions:

- Heterogeneous network access to office, home, and auto with middleware-controlled content distribution and adaptive real-time quality of service management
- Virtual private networks with quality of service, security, and reliability tailored to the needs of specific applications
- Virtual home networks for in-home broadband networking, network-based provisioning and services control
- Single-ended broadband loop testing and spectral compatibility

Kevin joined Telcordia Technologies, formerly Bellcore, on August 20, 1984. He has conducted technical and economic analyses of various wireline or wireless networks to advise clients on the timeframe, application, and life-cycle economics that are important for their strategic or product planning. He has authored more than 50 journal or conference publications in this field.

Kevin received the B.S. degree in control engineering from National Chiao Tung University, Taiwan, in 1979, and the M.S. and D.Sc. degrees in systems science and mathematics from Washington University, St. Louis, Missouri, in 1981 and 1984, respectively. He was Adjunct Professor at Rutgers Graduate School of Management, Newark, NJ, and Special Lecturer with the Department of Electrical Engineering at Columbia University, New York, NY, in 1989.

Conference Organizer

Shih-Fu Chang
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BIOGRAPHY

Prof. Chang joined Columbia University Electrical Engineering Department in 1993. He is currently directing Columbia's Digital Video/Multimedia Research Group, and ADVENT University-Industry Research Consortium.

His group conduct research of new technologies for processing, indexing, coding, protecting, and transmitting multimedia data. We actively participate in international standard MPEG-7. Some highlight systems from his group include a novel personalized filtering system for sports video, a large-scale search engine for web images/videos (WebSEEk), and a unique object-based video search engine (VideoQ).

Prof. Chang received an ACM Recognition of Service Award in 2000, a Navy ONR Young Investigator Award in 1998, a Faculty Development Award from IBM in 1995, a CAREER Award from the National Science Foundation in 1995 and three best paper awards from IEEE, ACM, and SPIE in the areas of video processing and searching. He is currently a Distinguished Lecturer of IEEE Circuits and Systems Society in the area of multimedia technologies and applications.

Prof. Chang leads multimedia research in several cross-disciplinary projects, including Columbia's Health Care Digital Library supported by NSF's DLI Phase II initiative, a DAVIC Video on Demand Interoperability Test project, and a K-12 multimedia education project funded by AT&T foundation.

He has served as a general co-chair of ACM 8th Multimedia Conference 2000, an associate editor for several journals, and a consultant in several new media companies including Eastman Kodak and PictureTel.

Conference Chairperson

Hwa-Nien Yu
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BIOGRAPHY

Dr. Hwa-Nien Yu was born in Shanghai, China. He received his B.S., M.S., and PhD degrees all in Electrical Engineering from the University of Illinois. During his graduate study at the University of Illinois, he participated in the design of the ILLIAC-II computer at the Digital Computer Laboratory.

Since the early 1960s, he has been engaged in advanced MOSFET, bipolar, and VLSI technology research at IBM Research. Dr. Yu is one of the world's leading experts in semiconductor device technology and VLSI design. His technical contributions and leadership has had profound influences in IBM product technology development. For his technical contributions, Dr. Yu was elected IEEE Fellow in 1986 and was recognized by IEEE as a co-recipient of the Jack Morton Award in 1991. He was elected an Academician of Academia Sinica and an Academician of the International Eurasian Academy of Sciences.

Since late 1970s, Dr. Yu has been an advisor to Industrial Technology Research Institute (ITRI) to help nurturing technology research and development for Taiwan's semiconductor and information technology industry development. He also served as advisors to National Science Counsel, National Chiao Tung University, a Director of Institute for Information Industry, Member/Executive Secretary of Technology Review Board (TRB) of the Executive Yuan, Member of IBM Supervisory Committee to National Center for High Speed Computing (NCHC).

Dr. Yu was actively involved in many academic and professional society activities. He was Director of CIE-USA, Director, President, and Chairman of Chinese American Academic and Professional Society (CAAPS). He was a member of IEEE Engineering Excellence Award Committee and IEEE Award Planning Committee. Dr. Yu served as an alternate Member of Joint Engineering Society's John Fritz Medal Board of Award. He was Program Chairman and Chairman of the VLSI Symposium on Technology, Systems and Applications in Taiwan. He also served in Technical Program Committees of a number of international technical conferences including International Electronic Devices Meeting, Conference on Solid State Device and Materials in Japan, Chinese Institute of Engineers (CIE-USA) Chinese American Academic and Professional Convention in North America, etc.

Since retirement from IBM Research, he has been a Research Staff Member Emeritus at IBM Research. He is currently serving as Senior Advisor to ITRI, Chairman of Technical Advisory Committee (TAC) for ITRI, and Chairman of Advanced R&D Steering Committee for ITRI. He is on the Board of Directors of several companies.

Conference Chairperson

Dr. Ya-Qin Zhang
Managing Director
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BIOGRAPHY

Ya-Qin Zhang is currently the Managing Director of Microsoft Research in China. He was previously the Director of Multimedia Technology Laboratory at Sarnoff Corporation in Princeton, NJ. He has been engaged in research and commercialization of MPEG2/DTV, MPEG4/VLBR, and multimedia information technologies. He was with GTE Laboratories Inc. in Waltham, MA from 1989 to 1994. He has authored and co-authored over 200-refereed papers in leading international conferences and journals. He has been granted over 40 US patents in digital video, Internet, multimedia, wireless and satellite communications. Many of the technologies he and his team developed have become the basis for start-up ventures, commercial products, and international standards. He serves on the Board of Directors of five high-tech IT companies. Ya-Qin served as the Editor-In-Chief for the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY from July 1997 to July 1999. He serves on the Editorial boards of seven other professional journals and over a dozen conference committees. He has been a key contributor to the ISO/MPEG and ITU standardization efforts in digital video and multimedia. Ya-Qin is a Fellow of IEEE. He received his B.S. and M.S. in Electrical Engineering from the University of Science and Technology of China (USTC) in 1983 and 1985. He received his Ph.D in Electrical Engineering from George Washington University, Washington D.C. in 1989. He had executive business training from Harvard University.

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BIOGRAPHY

Jeane Chen is Executive Vice President of Engineering at Kintera, Inc., an Internet marketing service provider for non-profits. Prior to assuming her current position in July 2000, she was with IBM since 1982, where she held various positions in research, technical marketing, and product development. She was Program Director of Interactive Media in the IBM Software Group, where she was in charge of software development for Internet Media and Digital TV applications. Dr. Chen has authored and patented extensively in the areas of networking, multimedia, and e-commerce. She was awarded five IBM Invention Achievement Awards and numerous IBM Outstanding Technical Achievement Awards for her contributions. Her software team received the "Best of PC Expo" award for new software at PC Expo 2000 in New York. Dr. Chen received her Ph.D. in Electrical Engineering from Columbia University.

Program Chairperson

Dr. Kent H. Cheng
Attorney
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BIOGRAPHY

Dr. Kent H. Cheng is a patent attorney with the law firm of Cohen, Pontani, Lieberman & Pavane in New York City. His practice of more than ten years includes client counseling, patent prosecution, opinion work, licensing and litigation in various areas including pharmaceuticals, medical devices, chemical processing and semiconductor fabrication.

Dr. Cheng received his B.A. in Chemical Physics in 1974 from Columbia University; Ph.D. in Chemistry in 1978 from Brandeis University; and J.D. in 1991 from Pace University School of Law. After his postdoctoral fellowship at Exxon Corporate Research Center, Dr. Cheng worked as a Research Chemist at Mobil Research and Development Corporation, followed by an eight year tenure with Stauffer Chemical Company where he participated in research and environmental regulatory projects.

Dr. Cheng is registered to practice before the U.S. Patent and Trademark Office since 1989 and is admitted to practice law in New York, Connecticut and the District of Columbia.

Program Coordinator

Zon-Yin Shae
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BIOGRAPHY

Zon-Yin Shae received the B.S. and M.S. degrees in electronic engineering from the National Chiao-Tung University, Taiwan, in 1976 and 1978 respectively, and the Ph.D. degree in electrical engineering from the University of Pennsylvania, Philadelphia, USA, in 1989. From 1980 to 1984, before he pursued his Ph.D. degree, he worked as an engineer in the areas of communication system and microprogramming CPU design for signal processing. Since March 1989, he has been with IBM Watson Research Center, New York. Dr. Shae has published tens of technical papers and holds several U.S. patents. His research interests include neural network, optical signal processing, multimedia signal processing, multimedia communication and networking, video server, multimedia in e-commerce, immersive collaboration, multimedia indexing and searching, and multimedia standards.

Program Coordinator

Chia-jer Tsai, Ph.D.
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BIOGRAPHY

Dr. Chia-jer Tsai is a member of the User Experience Engineering Division in AT&T Consumer IP Services Lab. Dr. Tsai's current project role is customer care systems engineer for AT&T WorldNet® Service. He develops feature requirements and designs graphical user interface for the Service's help desk system and member services Web site. Dr. Tsai's earlier project roles in AT&T included systems engineer for one of the company's first extranet services and project manager for developing a large-scale, network-based voice mailbox service. Prior to joining AT&T Bell Labs in 1995, Dr. Tsai worked for the Training Systems and Simulators Department of Southwest Research Institute (SwRI), a leading not-for-profit institution providing contract R&D services. At SwRI he designed and developed technical documentation, computer-based multimedia training, and electronic performance support systems for various clients such as the U.S. Air Force, Ford Motor Company and Westinghouse. Dr. Tsai holds a B.S. in electrical engineering and an M.S. and a Ph.D. in instructional systems technology.

Opening Remarks

Perspectives of Information Industry in Taiwan

Chintay Shih, Ph.D.
President
Industrial Technology Research Institute

BIOGRAPHY

Dr. Chintay Shih is presently the president of the Industrial Technology Research Institute (ITRI). ITRI is an R&D institution founded under the auspices of the government to serve the technological needs of Taiwan's industry. ITRI research activities include electronics, computers, communication, optoelectronics, metrology to biotechnology, machinery, materials (nano technology), chemicals, aerospace, energy resource and industrial safety.

Dr. Shih joined the Electronics Research and Services Organization (ERSO) of ITRI as an engineer manager in 1976 and became its general director and an ITRI vice president in 1984. Dr. Shih has played a key role in the founding of several milestone ventures including the United Microelectronics Corporation (UMC) and the Taiwan Semiconductor Manufacturing Company (TSMC). He was appointed an executive vice president of ITRI in 1989, and the president in 1994.

Dr. Shih is a Fellow of the IEEE. Among the many awards he received is the Engineering Medal of the Chinese Institute of Engineers, the highest honor in the profession. He has been an active industrial leader, serving at various times as the chairman of the Chinese Institute of Electrical Engineering, managing director of the Taiwan Electrical and Electronics Manufacturers' Association, chairman of the Asia Pacific Intellectual Property Association, and the chairman of the Taiwan Semiconductor Industrial Association. He is also a frequent consultant to the government. Currently he is a member of Science & Technology Advisor of Executive Yuan .

Dr. Shih received his undergraduate degree in electrical engineering from the National Taiwan University in 1968, and a Ph.D. degree in electrical engineering from the Princeton University in 1975. He also received a Master's degree of management from the Stanford University in 1985.

P1 - Plenary Session I: Emerging Information Technologies: Trends and Opportunities
Session Chairperson

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BIOGRAPHY

Jeane Chen is Executive Vice President of Engineering at Kintera, Inc., an Internet marketing service provider for non-profits. Prior to assuming her current position in July 2000, she was with IBM since 1982, where she held various positions in research, technical marketing, and product development. She was Program Director of Interactive Media in the IBM Software Group, where she was in charge of software development for Internet Media and Digital TV applications. Dr. Chen has authored and patented extensively in the areas of networking, multimedia, and e-commerce. She was awarded five IBM Invention Achievement Awards and numerous IBM Outstanding Technical Achievement Awards for her contributions. Her software team received the "Best of PC Expo" award for new software at PC Expo 2000 in New York. Dr. Chen received her Ph.D. in Electrical Engineering from Columbia University.

P1 – Plenary Session I: Emerging Information Technologies: Trends and Opportunities
Session Organizer

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BIOGRAPHY

Dr. Kevin W. Lu is Executive Director of Integrated Access and Operations for Telcordia Technologies in Morristown, New Jersey. He is responsible for leading a Department in Applied Research toward the following directions:

- Heterogeneous network access to office, home, and auto with middleware-controlled content distribution and adaptive real-time quality of service management
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- Virtual home networks for in-home broadband networking, network-based provisioning and services control
- Single-ended broadband loop testing and spectral compatibility

Kevin joined Telcordia Technologies, formerly Bellcore, on August 20, 1984. He has conducted technical and economic analyses of various wireline or wireless networks to advise clients on the timeframe, application, and life-cycle economics that are important for their strategic or product planning. He has authored more than 50 journal or conference publications in this field.

Kevin received the B.S. degree in control engineering from National Chiao Tung University, Taiwan, in 1979, and the M.S. and D.Sc. degrees in systems science and mathematics from Washington University, St. Louis, Missouri, in 1981 and 1984, respectively. He was Adjunct Professor at Rutgers Graduate School of Management, Newark, NJ, and Special Lecturer with the Department of Electrical Engineering at Columbia University, New York, NY, in 1989.

P1 - Plenary Session I: Emerging Information Technologies: Trends and Opportunities

Business Opportunity for the 3G Wireless and Mobile Internet Systems

David M. Poticny
Senior Vice President
Lucent Technologies
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BIOGRAPHY

Mr. David M. Poticny is Mobility Sector Vice President in the Mobility Solutions Organization of Lucent Technologies. His office is located at Bell Laboratories in Whippany, New Jersey, USA.

Mr. Poticny graduated from the University of Michigan with an Electrical Engineering degree. He is a registered professional engineer in the State of Illinois, USA. He also has a Master of Business degree from Loyola University of Chicago.

Mr. Poticny began working for AT&T in 1970. He worked in development and support of all digital public switching products including the 4ESS and 5ESS and the 3B computer products. He was responsible for the first product introductions of these products into commercial service.

From 1983 to 1991 Mr. Poticny was responsible for a joint venture between AT&T/Philips located in The Netherlands. He was responsible for technology transfer and implementation of public switching, transmission and operational support products. He lived in The Netherlands from 1987 to 1991 and was responsible for implementation of products throughout Europe, the Middle East, Africa, and Asia.

Mr. Poticny returned to the USA in 1991, and joined the Wireless Business Unit. He has been responsible for all new product introductions including AMPS Intelligent Base Stations, Universal Micro Cells, TDMA-CDMA (AMPS Digital), Wireless Subscriber Systems (Wireless Local Loop), Japan Amplifiers, GSM, Intelligent Networks, and the use of 5ESS on wireless. His responsibilities have included systems engineering, development, marketing, product management, and customer support. He is currently responsible for Wireless Global Strategy for all wireless infrastructure products.

Lucent Technologies was created in 1996 as part of AT&T's decision to split into three separate companies. Lucent Technologies combines the systems and technology units that were formerly a part of AT&T with the research and development capabilities of Bell Laboratories.

P1 - Plenary Session I: Emerging Information Technologies: Trends and Opportunities

The Emerging Optical Internet

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ABSTRACT

The phenomenal advances in Dense Wavelength Division Multiplexing (DWDM) technologies have greatly transformed the deployment of the core Internet infrastructure. In this new Optical Internet, IP packets are transported directly over the optical layer, with or without the traditional technology layers involving SDH/SONET, ATM, and Gigabit Ethernet (GE). IP over DWDM includes a family of technologies that have the potential of significantly simplifying the architecture of future data networks, with enhanced survivability and reduced costs for their deployment.

This talk provides a review of recent research and development activities in the Optical Internet. We will start with an overview of high-speed Internet technologies and new approaches to terabit routers and switches. This is followed by novel techniques to implement IP over DWDM networks, including the recently proposed burst mode switching techniques and rapidly re-configurable optical links. We will also address some of the signaling and network management issues for these emerging optical networks.

BIOGRAPHY

Dr. Nim Cheung is Vice President of Applied Research Government Program in Telcordia Technologies, a subsidiary of Science Applications International Corporation. He has assumed different research and management positions in Bell Laboratories and Bellcore from 1976 to 1999, and has been a principal investigator for several gigabit and optical networking testbeds sponsored by the U.S. Government. Dr. Cheung received his B.Sc. degree from the University of Hong Kong in 1970, M.S. and Ph.D. degrees in physics from California Institute of Technology in 1972 and 1976, respectively. He is a Telcordia Fellow, and a Fellow of the IEEE. He has held numerous leadership positions in the IEEE Communications Society, serving as Vice President of Technical Affairs for the IEEE Communications Society from 1996-97, and Distinguished Lecturer for the Society in 2001-2002.

P1 - Plenary Session I: Emerging Information Technologies: Trends and Opportunities

Atoms ⇒ Bits ⇒ Services: The New Ecosystem for Service Providers and the Technologies Required to Support It

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ABSTRACT

The irreversible change from atoms to bits is erasing the boundary between goods and services. As a result, many traditional product companies are evolving into service companies (ASP, AIP, HSP, CSP, etc.). Such transformation has major impact to the existing ecosystem of vendors and service providers, and calls for new technologies to support the new ecosystems. The speaker will examine such trends and opportunities, and discuss the relevance of technologies such as XML, EAI, B2B and web services to the required service platform.

BIOGRAPHY

Dr. Yin received his Ph.D. in Mathematics from University of Virginia. He taught at Pennsylvania State University before joining IBM where he held various leadership positions. Before founding PartnerCommunity, he was chief technology officer at Daleen Technologies Inc. He has been an active advocate for value based pricing and billing (VBPB), proactive customer management (PCM), the ASP business model and B2B commerce. He has written or co-authored numerous articles. He has also spoken at leading industry conferences on both technical and business topics.

P2 - Plenary Session II: Emerging Information Technologies: Trends and Opportunities
Session Chairperson

Dr. Ya-Qin Zhang
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BIOGRAPHY

Ya-Qin Zhang is currently the Managing Director of Microsoft Research in China. He was previously the Director of Multimedia Technology Laboratory at Sarnoff Corporation in Princeton, NJ. He has been engaged in research and commercialization of MPEG2/DTV, MPEG4/VLBR, and multimedia information technologies. He was with GTE Laboratories Inc. in Waltham, MA from 1989 to 1994. He has authored and co-authored over 200-refereed papers in leading international conferences and journals. He has been granted over 40 US patents in digital video, Internet, multimedia, wireless and satellite communications. Many of the technologies he and his team developed have become the basis for start-up ventures, commercial products, and international standards. He serves on the Board of Directors of five high-tech IT companies. Ya-Qin served as the Editor-In-Chief for the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY from July 1997 to July 1999. He serves on the Editorial boards of seven other professional journals and over a dozen conference committees. He has been a key contributor to the ISO/MPEG and ITU standardization efforts in digital video and multimedia. Ya-Qin is a Fellow of IEEE. He received his B.S. and M.S. in Electrical Engineering from the University of Science and Technology of China (USTC) in 1983 and 1985. He received his Ph.D in Electrical Engineering from George Washington University, Washington D.C. in 1989. He had executive business training from Harvard University.

P2 - Plenary Session II: Emerging Information Technologies: Trends and Opportunities
Session Organizer

Shih-Fu Chang
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BIOGRAPHY

Prof. Chang joined Columbia University Electrical Engineering Department in 1993. He is currently directing Columbia's Digital Video/Multimedia Research Group, and ADVENT University-Industry Research Consortium.

His group conduct research of new technologies for processing, indexing, coding, protecting, and transmitting multimedia data. We actively participate in international standard MPEG-7. Some highlight systems from his group include a novel personalized filtering system for sports video, a large-scale search engine for web images/videos (WebSEEk), and a unique object-based video search engine (VideoQ).

Prof. Chang received an ACM Recognition of Service Award in 2000, a Navy ONR Young Investigator Award in 1998, a Faculty Development Award from IBM in 1995, a CAREER Award from the National Science Foundation in 1995 and three best paper awards from IEEE, ACM, and SPIE in the areas of video processing and searching. He is currently a Distinguished Lecturer of IEEE Circuits and Systems Society in the area of multimedia technologies and applications.

Prof. Chang leads multimedia research in several cross-disciplinary projects, including Columbia's Health Care Digital Library supported by NSF's DLI Phase II initiative, a DAVIC Video on Demand Interoperability Test project, and a K-12 multimedia education project funded by AT&T foundation.

He has served as a general co-chair of ACM 8th Multimedia Conference 2000, an associate editor for several journals, and a consultant in several new media companies including Eastman Kodak and PictureTel.

P2 - Plenary Session II: Emerging Information Technologies: Trends and Opportunities

Designing Security into the Core Hardware of Information Appliances and Servers

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ABSTRACT

We discuss the emerging computing and communications landscape and its need for pervasive secure information processing. In today's hardware and software systems, security is implemented as an after-thought; in tomorrow's systems, security should be designed into core hardware and software systems from the beginning. Processor architecture can be designed to have the flexibility of general-purpose computing, the very high performance needed for pervasive public key and secret key cryptographic algorithms, and the low cost and power needed for mobile interconnected information appliances. Our research also investigates if processor and platform architectural features in information appliances can enhance the security of web sites and services. For example, can architectural features in core hardware prevent or mitigate the unwanted use of our information appliances in mounting distributed denial of service attacks?

BIOGRAPHY

Ruby B. Lee is the Forrest G. Hamrick Professor of Engineering at Princeton and a Professor of Electrical Engineering with an affiliated appointment in the Computer Science Department. Her research interests are in computer architecture, multimedia architecture, and security architecture. She directs the Princeton Architecture Laboratory for Multimedia and Security (PALMS). Her current research interests revolve around architectures for pervasive secure multimedia information processing. She is also the founder and chairman of the board for Teleputers, a technology design and licensing company.

Prior to joining the Princeton faculty in September 1998, she was chief architect of the cross-divisional security architecture team for e-commerce and extended enterprise security in Hewlett-Packard's Enterprise Systems Group in California. Lee also led HP's cross-functional multimedia architecture team as its chief architect. She pioneered the introduction of multimedia instructions into general-purpose microprocessors, providing highly parallel subword operations at minimal incremental cost. This enabled demanding, real-time multimedia applications to be achieved for the first time with software on low-cost computers. She designed MAX (Multimedia Acceleration eXtensions) for PA-RISC, and HP introduced multimedia workstations with real-time software MPEG video players based on this in January 1994, three years before Intel microprocessors with similar MMX technology. Subsequently, every major microprocessor company has added multimedia instructions to its processor architecture. Lee was also one of the original architects for Hewlett-Packard's PA-RISC architecture and was instrumental in its evolution through several generations of server and workstation systems. She was also co-leader of an HP-Intel architecture team in the definition of the multimedia and parallelism features in IA-64 EPIC (Explicitly Parallel Instruction Computer) architecture for 64-bit Intel microprocessors.

While at HP, Lee also held a concurrent appointment as Consulting Professor of Electrical Engineering ('95-'98) at Stanford University. She has an A.B. with distinction from Cornell University, an M.S. in Computer Science and Computer Engineering, and a Ph.D. in Electrical Engineering from Stanford University. Her memberships include Phi Beta Kappa, IEEE, ACM, and SPIE. She has been granted 88 U.S and international patents.

P2 - Plenary Session II: Emerging Information Technologies: Trends and Opportunities

Directions and Achievements of Networked Multimedia Technologies Research Activities in Taiwan

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ABSTRACT

Networked multimedia technologies are strategic direction for Taiwan's research and development activities. There are several government sponsored task forces to promote them. Several R&D teams devoted to this area and a lot of results have transferred to the local industry. This report will describe the strategic direction, research topics, and related promotion programs about this technology in Taiwan.

BIOGRAPHY

Pao-hsu Shih received his M.S. and Ph.D. in Electric Engineering from National Taiwan University of Taiwan in 1985 and 1991 respectively. In 1991, he joined the Institute for Information Industry (III) for the first time to lead a project about the development of geographic information systems. In 1997, he built up the Multimedia Laboratory in III to group up the related research and development activities. After about 3 years of staying with Mitac group for system integration business, Dr. Shih went back to III to lead the Multimedia Technologies Laboratory at 2001. The research directions of his laboratory include audio/video media processing, 3D graphics and networked virtual reality.

P2 - Plenary Session II: Emerging Information Technologies: Trends and Opportunities

Silicon Technology Development in the New Millennium

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ABSTRACT

Silicon technology development is at a crossroad, after progressing at an exponential rate for more than thirty years. It is now clear that CMOS devices, which have been the backbone of information technology, are fast approaching their limits. New materials and novel device structures are being explored to extend CMOS as far as possible. Beyond that, silicon technology will develop in diverse and application-specific directions. System-on-chip and system-on-package are the high-level themes. BiCMOS, particularly SiGe-base SOI BiCMOS, will emerge as an important technology platform for the growing market of mixed-signal systems.

BIOGRAPHY

Tak H. Ning received his Ph. D. degree in physics from the University of Illinois at Urbana-Champaign in 1971. He joined IBM Thomas J. Watson Research Center at Yorktown Heights, New York in 1973. He has made significant contributions to silicon device physics, and to bipolar, CMOS, and DRAM technologies. He managed the advanced silicon device technology research in IBM Research between 1981 and 1991. Since 1991, he has been an IBM Fellow, focusing on VLSI industry directions, technology trends, and opportunities beyond CMOS scaling. He is a member of the National Academy of Engineering, and a fellow of the IEEE and the American Physical Society.

T1 - Technical Session I: Web Services and Collaborative Commerce
Session Chairperson

Hung-Yang (Henry) Chang
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BIOGRAPHY

Henry Chang is the manager of B2B Service Infrastructure in the e-Commerce research department in IBM T.J. Watson Research Center. His recent focus include Dynamic web services framework, Collaborative e-hub infrastructure, and distributed web process management. From 1999-2000, he was the lead architect of the IBM enterprise extranet for large enterprise customers, focusing on end-to-end content management for a large B2B procurement. Before joining ibm.com, he conducted research mobile application infrastructure, data replication, and web database transaction management. He has lead research projects that focus on mobile access to enterprise information sources such as remote file systems, World-wide Web, and transactional databases. His previous projects include adaptiving MACH microkernel to large scale multiprocessors, distributed simulation and distributed scheduling algorithms. He taught "distributed object computing" at Polytech of New York. He is the co-chair of the Data Synchronization workgroup of Mobile NC Reference Specification. Henry holds a Ph.D. in Computer Sciences from U. Wisconsin-Madison at 1987 and a B.S. in Electric Engineering from National Taiwan University. He is a member of ACM.

T1 – Technical Session I: Web Services and Collaborative Commerce
Session Organizer

Subrina S. P. Chang
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BIOGRAPHY

Subrina S. P. Chang received the B.S. degree in computer science from National Chiao-Tung University, Hsinchu, Taiwan, R.O.C. in 1984 , and the M.S. degree in computer science from Pennsylvania State University, University Park, in 1987. She has worked on various projects in the areas of networking, video decoding & encoding technology, and Internet multimedia within IBM. She is currently a Senior Manager at Kintera, Inc., San Diego, CA, a marketing infrastructure service provider for nonprofits.

T1 – Technical Session I*: Web Services and Collaborative Commerce*

Natural User Interface for Web Services

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ABSTRACT

Natural user interface is an evolution of traditional GUI for the internet and next generation web services and distributed applications. The interface provides end user with a consistent user experience of various web services anywhere and anytime on any devices. Key components of natural user interface include speech computing, search, pen and ink computing and vision-related technologies. My presentation will give a brief introduction to natural human-computer interface for web services and recent research work of pen and ink computing as a key piece of natural user interface at Microsoft Research China.

BIOGRAPHY

Jian Wang is currently the researcher manager of user interface group at Microsoft Research China. He received his Ph.D. in engineering psychology from Department of Psychology, Hanghzhou University. He worked as professor at Zhejiang University before he joined Microsoft Research China. His research interests include natural user interface, usability, pen interaction and multi-modal human-computer interaction.

T1 – Technical Session I: Web Services and Collaborative Commerce

Kintera Sphere – Internet Marketing for Nonprofits

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ABSTRACT

Kintera Sphere is a business operations platform that enables nonprofit organizations to utilize the advanced marketing power of the Internet. It is designed to capture the workflow and facilitate the management of a nonprofit organization's day-to-day activities. It is comprised of two integrated components: front-end interactive modules, and the backend business control center. The modules are interactive websites where donors, event participants, friends and family members support fundraising events or contribute to affinity communities. The modules are designed to affect users both informatively and emotionally, thereby increasing the likelihood of wider participation and larger donations. The control center conducts various facets of the nonprofit's business including management of events, contacts, content and mail campaigns, and advanced reporting.

In this talk, I will present the Kintera Sphere architecture and discuss various design and implementation issues. I will also discuss the challenge of offering comprehensive applications as an ASP service, and the tradeoffs between providing generic functions and customized features.

BIOGRAPHY

Jeane Chen is Executive Vice President of Engineering at Kintera, Inc., an Internet marketing service provider for non-profits. Prior to assuming her current position in July 2000, she was with IBM since 1982, where she held various positions in research, technical marketing, and product development. She was Program Director of Interactive Media in the IBM Software Group, where she was in charge of software development for Internet Media and Digital TV applications. Dr. Chen has authored and patented extensively in the areas of networking, multimedia, and e-commerce. She was awarded five IBM Invention Achievement Awards and numerous IBM Outstanding Technical Achievement Awards for her contributions. Her software team received the "Best of PC Expo" award for new software at PC Expo 2000 in New York. Dr. Chen received her Ph.D. in Electrical Engineering from Columbia University.

T1 – Technical Session I: Web Services and Collaborative Commerce

Enhanced Web Services for Dynamic B2B Integration

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ABSTRACT

Web Services are a set of open standards that facilitate program-to-program interaction by specifying a programmatic means to describe, publish, discover and bind application interfaces. Web services can provide an essential building block for the realization of dynamic e-Business - the automation of end-to-end business-to-business process spanning inter and intra enterprises. As with any new technology, Web Services present challenges for applications that want to exploit their capabilities, including comprehensive integration within the end-to-end processes they support. This talk examines a range of issues affecting the integrating of Web Services into middleware that enables the creation and hosting of business-to-business processes. This work has exposed new functional requirements leading to the implementation of enhanced Web Services and computational intelligence for dynamic e-business integration.

Enhanced Web Services are used to support new functions delivered through reliable, secure and robust messages across business processes. To accomplish this, Web Services must be applied to all levels of the business application, including: publication and syndication; search and identification; binding and program interaction. An advanced search engine is proposed for efficiently search Web Service registries using a UDDI Search Markup Language (USML) and enhanced mechanisms for business-level search. Finally, an e-logistics process integration framework based on Web Services is proposed by introducing a common alliance interface to support service-provider process adaptation and dynamic XML data binding mechanism. A transportation planning in the purchase order management process in a B2B solution is taken as an example to illustrate the use of this framework by encapsulating United Parcel Service (UPS) on-line XML tools as a Web Services. This talk concludes by presenting a working business-to-business system that demonstrates the feasibility of the enhanced Web Services and computational intelligence for dynamic B2B integration.

BIOGRAPHY

Dr. Liang-Jie Zhang is a Research Staff Member in B2B Services Infrastructure Group at IBM T.J. Watson Research Center. He is actively working on the enhanced Web Services and computational intelligences for novel B2B services infrastructure and integrations. Before this position, he was an architect of the following IBM rich media products: HotVideo, HotAudio and HotMedia. Then he became an architect of Interactive TV commerce solution in IBM Software Group. HotMedia was part of the IBM WebSphere Commerce Suite for creating rich media enabled catalogs and transactions. He has filed more than 20 patent applications in the area of e-commerce, Web Services, rich media, data management and information appliances. He has published more than 40 technical papers in the Journals and Conference Proceedings. He was presented the Best Paper Award of International Conference on Neural Networks and Signal Processing in 1995 and IBM Outstanding Technical Achievement Award for HotMedia Architecture in 1999. IBM HotMedia was awarded the CNET/PC Expo's Best of Show Software Award in 2000.

T1 – Technical Session I: Web Services and Collaborative Commerce

A Framework for Model Specification and Coordination of Business Processes

Ying Huang
IBM T.J. Watson Research Center

ABSTRACT

The Business Decision Markup Language (BDML) is a framework that captures methods of problem understanding and consistency checking among many business process steps in a complex environment independent of the actual solution techniques, algorithms or implementation method used. In this talk, we will describe the framework and its potential usages as well as its relationships with ebXML and other relevant standards.

BIOGRAPHY

Currently Research Staff Member in the e-Commerce Research Department at IBM T.J. Watson Research Center. Research interests include business-to-business and enterprise business application integration. Have worked on supply chain management modeling and implementation with a Ph.D. in Operations Research.

B1 – Business Session 1: Partnering Opportunities
Session Chairperson

Chih-Lin I
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BIOGRAPHY

Chih-Lin I is the Director of Wireless & Access Technologies of AT&T IP Architecture. Her present responsibilities include leading and coordinating the AT&T/BT/Concert cross alliance's global seamless wireless and wireline IP mobility. She reports to the President of IP Technology and Development, and leads the Alliance IP Mobility Architecture Team. Her team addresses conflicting strategic interests and culminates in joint mobility management technology developments among wireless, cable/DSL, and IP architecture organizations of the Alliance.

She received a Ph.D. degree in Electrical Engineering from Stanford University, and joined the Communications Science Research Lab of AT&T Bell Laboratories, Holmdel, NJ in 1987. She led work on satellite communications, self-healing networks and diversity coding, ATM switch architecture, and HDTV/EDTV DSP techniques. Yet, her research focus has been on wireless communications. She led the invention of Local Packing DCA, Polite Aggressive DCA, Tree RAMA, global paging with reverse call setup, Multi-Code CDMA, Load and Interference based CDMA Demand Assignment, MC-CDMA Receivers, Pilot Interference Cancellation, and Co-Existence DCA for autonomous cellular overlay. Her main contributions are in the areas of DCA and CDMA, both on the infrastructure and the mobile terminal aspects. Her work on MC-CDMA and LIDA was adopted by the TIA as the CDMA high-speed data standards, IS-95B.

From mid '96 to '98, Chih-Lin was the Director of Broadband Access Technology/Infrastructure at AT&T's Corporate Headquarters. She was responsible for coordinating AT&T's internal strategy needs and external policy and advocacy in wireless and broadband access technologies. She led the Broadband Technology Team to formulate strategic positions of AT&T regarding HFC, Fixed Wireless, MMDS, and DSL. She championed and articulated advocacy/policy positions for AT&T to BUs, advocates, FCC, Congress, States, and industry/technology fora.

In 1994 she accompanied the Bell Labs President to China where she presented Wireless Technology Seminars to delegates of the industry, academic, and the government. She met with key telecommunications ministries (SPC, SSTC, MPT, and MEI), and led the Bell Labs Workshop on wireless Technology for AT&T China. Moreover, she met with the President of China at his residence for the establishment of Bell Labs China. In 1997 she lead the AT&T Labs technology presentation on wireless, optical, and Internet technologies to the President of China during his visit with AT&T Chairman/CEO at AT&T Headquarters.

She is on the Board of Governors of the IEEE Communications Society. She chairs the IEEE Wireless Communications and Networking Communications (WCNC) Steering Committee. She is on the Strategic Planning Committee of IEEE ComSoc and the Steering Committees of IEEE Personal, Indoor, Mobile, and Radio Communications (PIMRC). She is co-chairing the Asian Pacific Optical and Wireless Conference (APOC 2002) Technical Program on Wireless. She has served as the Editor for Wireless Networks of IEEE/ACM Transactions on Networking and on the editorial boards of the Wireless Networks Journal and of the Wireless Personal Communications Journal. She has numerous publications and holds 29 granted or pending patents in the aforementioned fields. She chaired the Wireless and Optical Communications Conference (WOCC) Advisory Board. She also served as the TP Chair of WOCC'98, Organizer of WOCC'99, TP Chair of ISCOM'99, TP Vice Chair of GLOBECOM'99 Future Wireless Comm Symposium, and the Co-Chair of TIA 3G Wireless AHG Task Group II. She has organized and chaired technical sessions

and executive panels on wireless networks in numerous IEEE conferences. She has been repeatedly an invited speaker and presenter at various technical and business forums. She was on the first Board of Directors at the CIE-NCTU Chapter. In addition to various academic awards, she received the IEEE Communications Society's S. O. Rice 1995 Prize Paper Award.

B1 – Business Session 1: Partnering Opportunities
Session Organizer

Hong (Henry) Shi, Ph.D.
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BIOGRAPHY

Henry is CEO and co-founder of Fashion River Co., a B2B e-commerce first mover that uses latest J2EE/XML in the fashion industry. The sustainable click-and-mortar business model that he developed long before the dot com bubble burst, now proves to be a Wall Street's favourite. He has grown the company's business from zero to a revenue of 10 millions. He was CEO and Co-founder of ClickSafe, an Internet filtering software company that received highly favourable press coverage in *New York Times, New York Post, Catholic New York*, CBS Radio, Fox National TV News, and CNN-fn. Prior to that he was partner and VP of business development at Virtual Avenue, a web hosting start-up. His business insight and strategy helped to grow the company's customer base to 85,000 within six months. His wisdom also avoided the company's early equity dilution and led to Virtual Avenue's successful acquisition by a Microsoft co-founder's company. Henry is a dynamic entrepreneur with vision and creativity, which can trace back to his pre-college days when he designed several TV sets in his high-school and textile machine electronic controllers in Beijing Silk Factory.

Before that he was with Lucent/Bell Labs as ASIC designer, system architect, and product manager in the area of ATM switch, MPEG2 based VOD, HDLC for wireless base-station, and IP over ATM/SONET/DWDM. He also represented Lucent to participate in and contribute to DAVIC and ANSI T1E1 broadband transmission and access standards. (Currently he is still very active in the IEEE standard activities as voting member of IEEE 802.3). He had been with Center for Telecommunications Research of Columbia University and Nortel Networks (formerly BNR) working on a joint IBM/Nortel/MCI/NYNEX broadband project. He was recommended by the President of Chinese Academy of Sciences and invited by Nobel Laureate T. D. Lee of Columbia University to work on an Intel sponsored super computer project. Before that he was with Institute of Computing Technology, Chinese Academy of Sciences.

He has been frequently invited as speaker, paper reviewer, program chair, session chair, and committee member for the following journals/conferences: IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications, IEEE INFOCOM, IEEE International Conference on Computer Communications and Networks, IEEE International Conference on Computer Design/VLSI, Symposium of Multimedia Technology, Symposium of Wireless/Optical Communications Technology, US-China Network Symposium, and US-China Conference on High-tech Industry Development and Business Opportunities. He is a member of IEEE, Visiting Research Fellow of Chinese Academy of Sciences, and Visiting Professor of Beijing Broadcasting Institute. He is currently President-elect of Chinese Association for Science and Technology (CAST-USA, the most influential mainland Chinese professional organizations in US) and President of e-Business Society of CAST-USA. He is a Board Member of Jiangsu Zongyi Co. (one of the largest public companies in China).

Henry completed Northeastern University MBA PowerPak Program in 1999 and Georgia Tech (DuPree School of Management) Program for High-Potential Managers in 1997. He received his Ph.D. in Electrical Engineering from Columbia University in 1994, MS in Computer Engineering from Chinese Academy of Sciences in 1984, and BS in Computer Science with straight A and University Medal from Northern Jiaotong University in 1982.

B1 – Business Session I: Partnering Opportunities

New Wireless Technologies and Products Center in Hangzhou

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ABSTRACT

Having strong local partners is the key to success for international companies to do business in China. One of the most successful partnership examples in China between Motorola and Eastcom will be described. The first wireless product focused industrial park developed by Eastcom will be presented. The partnership opportunities of the wireless product chain in China will be discussed.

BIOGRAPHY

David T. Sun joined Eastern Telecommunications Company in Hongzhou, China in September 2001, as the Chief Technical Officer. His team is responsible for developing and manufacturing the 3G wireless systems and handsets. Previously, Dr. Sun had worked for Bell Labs Lucent Technologies in Wireless Systems (AMPS, TDMA, GSM and 2G & 3G CDMA) from 1985 to 2001. He had been assigned to Beijing, China as the Technical Director from 1993 to 2000, where he built up the Lucent Wireless Technical Center for conducting new product introduction, network design and project implementation in the China market. David received his bachelor degree from the Electrical Engineering department of National Taiwan University, and he was awarded his Masters and Ph.D degrees in Electrical Engineering by the University of Texas.

B1 – Business Session I: Partnering Opportunities

3G WCDMA Mobile Device Baseband & Total Solution

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ABSTRACT

The dominant standard of 3G wireless, WCDMA, has been actively promoted and accepted as the future of cellular wireless. 3G License winners are pushing the equipment and mobile device vendors to develop low-cost but feature-rich products and to deploy products sooner. However, high entry barrier of baseband module from 2G to 3G presents a critical factor for 3G products. Especially in the WCDMA standard, many advanced communications techniques as well as many intelligent processes are moved into mobile devices and that makes the engineering life much more challenging than those of 2G systems. Wiscom Technologies, founded May, 2000, is positioned to give the optimal solution on baseband for mobile device vendors. Wiscom has aggregated a world-class technical team and has developed a WCDMA mobile device prototype to prove the concept of low-cost and feature-rich products. With more lab tests and field trials, ASIC ready FPGA designs will then be converted into real chips. For a successful mobile device in the WCDMA domain, an optimal total solution is the key and Wiscom is open to partner with more players in the WCDMA domain including RF chip vendors, reference design houses, semiconductor companies, software houses, mobile device developers, infrastructure vendors and mobile service operators.

BIOGRAPHY

Dr. Kuo is the founder and CTO of Wiscom Technologies. He currently leads the R&D for 3G WCDMA core technology development and the baseband chip design for 3G WCDMA mobile terminals. He has accumulated expertise in mobile communications, especially, fading channel modeling, synchronization, receiver design, radio resource control and deployment optimization. He holds 8 US patents and has another 35 patents pending. He is an Editor for IEEE Journal on Selective Area in Communications (JSAC) - Wireless Series. He is a member of Telecomm Advisory Board, Ministry of Traffic and Communications, Taiwan and an Associated Director of Monte Jade East Coast Board. He receives the IEEE Leonard G. Abraham Prize Paper Award of 2001.

From 1/95 to 4/99, he was with Radio Performance and Optimization Dept and then with Wireless Systems Core Technologies Dept. of Bell Labs, Lucent Technologies working on 2G and 3G CDMA performance analysis, algorithms, system engineering, and deployment study. He led a team performing research and system requirements on Burst Control Function of high speed data for cdma2000-3X. He was the key engineer in projects of soft handoff, inter-frequency handoff, power control, loading control, radio resource allocation, access and paging. He was the principal investigator of CDMA using CATV network (for Cox Communications), NYSE CDMA system planning (for Bell Atlantic), In-building CDMA enhancement (for Sprint PCS), mobile location estimation (for FCC requirement), and extended coverage off the shore (for Australia). While at Lucent, he was liaison for Taiwan wireless industry survey and liaison on university grants in Taiwan. He was also involved in the CDG (CDMA Development Group) and TIA/TR45 activities in establishing CDMA standards of IS-95A/B and cdma2000. During 4/99 to 5/2000, Dr. Kuo was with Wireless Communications Research Dept of AT&T Labs-Research and led WCDMA investigations on spectrum efficiency, packet data simulation and radio resource management.

He was an adjunct professor at New Jersey Institute of Technology in 1998. Dr. Kuo is a senior member of IEEE and has organized/chaired sessions in several prestigious conferences including IEEE ICC97, IEEE WCNC99, IEEE Globecom99, IEEE WCNC2000, IEEE ICC2001 and WOCC (96-2001). Dr. Kuo received

BS from National Chiao-Tung University, Taiwan, MSEE from National Taiwan University, and Ph.D. in E.E. from Purdue University.

B1 – Business Session I: Partnering Opportunities

Impact of Language-Computer-Interface on National Economy and Productivity

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ABSTRACT

The Japanese economic power was number one in the whole world in the 1980s. However, in the 1990s and beyond, the relative economic powers of Japan and the USA were reversed. The Japanese economy has slumped for more than a decade and still has not recovered. Paul Krugman, an MIT Professor in Economics, pointed out that the combined effect of language and the Internet revolution started in the 1990s is one of several important factors causing such a dramatic reversal of economic power. This paper focuses on the language-computer-interface issues and provides more detailed information and examples to illustrate the serious impact of Asian language-computer-interface problems on the national economy and productivity in the modern Internet and pervasive computing environment. These language-computer-interface problems put the Asian industries and economies at a great disadvantage to compete at the Internet speed in the Information Age with those highly developed countries with alphabet-based languages. This paper also points to the Phonetic Chinese Language (PCL) invented by Dr. Victor C. Yeh as an effective solution to eliminate the language-computer-interface problems for Chinese industry and its economy. Adoption of PCL can eliminate such language-computer-interface obstacles and provides the necessary condition for Chinese industry and its economy to advance into the very elite group of highly developed countries competing on high-profit-margin type of Hi-Tech and intellectual based industries.

BIOGRAPHY

Dr. Sing Lin has been a member of the US Delegation to ITU developing the global standards for the Third Generation (3G) IMT-2000 wireless systems and beyond. In the 1998-1999 timeframe, Dr. Lin was a District Manager for Wireless Standards Management in AT&T Laboratories. From 1984 to 1998, he was the Director for Wireless Technologies in Telcordia (formerly Bellcore). He received the Ph.D. degree in Electrical Engineering from the University of California at Berkeley in 1969 and the B.S.E.E. degree from the National Taiwan University in Taipei, Taiwan in 1963. Dr. Lin is the recipient of Bellcore Award of Excellence, IBM Fellowship at the University of California and Institution Service Award of the Chinese Institute of Engineers – USA. Dr. Lin was the President of the Chinese Institute of Engineers – USA/Greater New York Chapter (CIE-USA/GNYC) in 1998 and 1999.

B1 – Business Session 1

The Future of Chinese Information Technology (CIT) - Natural Language Processing

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ABSTRACT

A Chinese Computer Natural Language - The Tonal Spelling for Ideograms

A tonal *spelling natural language uniquely mapped* to the Chinese language, both in speech and in writing, has been established. Its name is *Phonetic Chinese Language (PCL),* 文中普拼. *Phonetic Chinese Language (PCL)* is the only *natural language interface* that is capable of linking *Chinese ideograms* to computers through an ingenious ***tonal spelling***. In PCL each *Phonetic Chinese Word (PCW)* is u*niquely defined* for a given ideogram. The set of 10,000 ***PCW/Ideogram*** unique pairs is the foundation of the PCL System - a new software platform.

For the first time in the history of Chinese language, *alphabetic sorting, listing, searching, matching, merging, information retrieval, database management, etc.* are readily available to support the Chinese Information Technology (CIT). PCL works equally well in simplified script and traditional script unifying computer input and natural language interface. *Most important, PCL is capable of spelling representation of Chinese personal names without ambiguity.*

The key to this success is a *working alphabet* - the Phonetic Chinese Alphabet (PCA) - for the *tonal-homonymic* Chinese language. PCA is a four-dimensional alphabet (consonant, vowel, tone and icon) 聲韻調形. The 85-letter *Phonetic Chinese Alphabet (PCA)* offers two extra dimensions beyond the usual consonant and vowel. These two extra dimensions are *tone* and *icon*. They jointly provide a total of 340 (4x85) tone and homonym resolutions to each and every sound syllable in the Mandarin Chinese (Putonghua or Guoyu). The greatest obstacles for Chinese language to embark on the road to a *world class* spelling natural language - tones in speech and homonyms in writing - have both found an intelligent and an elegant solution.

BIOGRAPHY

The Invention: The Phonetic Chinese Language (PCL) System

A 20-year research effort enabled Dr. Victor C. Yeh to overcome the greatest deficiency in the existing Chinese information technology (CIT), which is the lack of a natural language computer interface for Chinese ideograms. The Phonetic Chinese Language (PCL) System is created as an ideal solution to this challenge. PCL, based on tonal spelling for ideograms (in one-byte format), is the most efficient Language-Computer Interface. A complete alphabetic accountability for Chinese language has been achieved.

From the Massachusetts Institute of Technology (MIT), Mechanical Engineering Department (minor in System Engineering), he received his Doctor of Science degree (Sc.D) in 1952, MS in 1950, BS in 1948. In 1945 he attended the University of California, Berkeley. Graduated from Nankai Middle School, Chongqing, China in 1944.

T2 – Technical Session II: Component Techonology (I)
Session Chairperson

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BIOGRAPHY

Yuan-Chi Chang is currently a Research Staff Member at the IBM Thomas J. Watson Research Center in Hawthorne, NY. He received his Ph.D. and M.S. in Electrical Engineering from University of California, Berkeley, in 1998 and 1996, respectively. He received his B.S. in Electrical Engineering from National Taiwan University in 1991. His research interest includes multimedia database, multimedia communications, and their applications to electronic commerce.

T2 – Technical Session II: Component Techonology (I)
Session Organizer

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BIOGRAPHY

Lih Y. Lin received Ph.D. degrees in electrical engineering from UCLA in 1996. She then joined AT&T Labs-Research, where she conducted researches on micromachined technologies for optical switching and lightwave systems, as well as WDM network architectures. In March 2000, she joined Tellium, Inc. as Director of Optical Technologies. She has over 110 publications in the areas of optical MEMS, high-speed photodetectors, and network architectures. She holds 8 US patents, and has 13 patents pending. Dr. Lin is a member of IEEE, Optical Society of America, and Photonics Society of Chinese-Americans. She has served on the technical program committee of the International Optical MEMS Conference, IEEE LEOS Annual Meeting, OSA Annual Meeting, OSA Photonics in Switching Topical Meeting, and SPIE meetings. She is now on the steering committee of the International Optical MEMS Conference, and is co-chairing the Optical MEMS 2001 conference.

T2 – Technical Session II: Component Techonology (I)

MPEG-7 Multimedia Content Description Standard

John R. Smith
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ABSTRACT

With the tremendous growth in the amount of digital multimedia information, it is becoming increasingly important to effectively search and retrieve such information. The Moving Picture Experts Group (MPEG) is developing a new standard called the "Multimedia Content Description Interface," also known as MPEG-7. The goal of MPEG-7 is to enable interoperable searching, indexing, filtering, and retrieval of multimedia. The effort is being driven by requirements from a large number of applications related to multimedia databases, interactive media services (music, TV programs), video libraries, and so forth. MPEG-7 is achieving this goal by developing an XML-Schema metadata system for describing the features, structure, and semantics of multimedia content. Since MPEG-7 standardizes only the metadata system (Descriptors, Description Schemes, and the Description Definition Language), industry will compete on the methods for extracting, searching, and filtering MPEG-7 descriptions. For one, new methods are needed for automatically analyzing and labeling multimedia content at the semantic level. In addition, specialized indexing and access methods are needed because of the high-dimensionality of MPEG-7 Descriptors. Lastly, new methods are needed for similarity matching with fuzzy constraints across the different types of multimedia content description. In this talk, we review the emerging MPEG-7 standard and examine the new challenges for supporting MPEG-7 in multimedia applications.

BIOGRAPHY

John R. Smith received his M. Phil and PhD. degrees in Electrical Engineering from Columbia University in 1994 and 1997, respectively. He is currently Manager of the Pervasive Media Management Group at IBM T. J. Watson Research Center. He is also Chair of the MPEG Multimedia Description Schemes (MDS) group. Dr. Smith's research interests include multimedia databases, content analysis, compression, indexing, and retrieval. At Columbia he received the Eliahu I. Jury award for outstanding achievement as a graduate student in the areas of systems communication or signal processing. Dr. Smith is an Adjunct Professor at Columbia University and a member of IEEE.

T2 – Technical Session II: Component Techonology (I)

Computational Biology: From Life Science to Deep Computing

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ABSTRACT

The life sciences are receiving special attention from many companies because the field is demonstrating explosive growth, and the life sciences are creating what will become one of the most significant industries of the new century. Computing, storage, database technology, and visualization are essential building blocks of knowledge and analysis infrastructure for the emerging life science market. Indeed, with advances in bioinformatics and genomics, high-throughput screening of drug candidates, and ready access to information on the Internet, the life sciences have benefited from computational capabilities and will be driving the requirements for data, network, and computational capabilities in the future.

A recognized “grand challenge problem” of great interest to the life sciences is to understand the mechanisms behind protein folding. On December 6, 1999, IBM announced a $100 million research initiative to build the world's fastest supercomputer, "Blue Gene", to tackle fundamental problems in computational biology. The mission of the Blue Gene scientific program is to use large-scale biomolecular simulation to advance our understanding of biologically important processes, in particular our understanding of the mechanisms behind protein folding. In this talk, I will discuss how life sciences influence IT market and give a brief review on the IBM Blue Gene project.

BIOGRAPHY

Dr. Lurng-Kuo Liu received the M.S. degree in control engineering from National Chiao-Tung University, Taiwan, in 1987, and the Ph.D. degree in electrical engineering from University of Maryland at College Park in 1993. In 1993, he joined the High Performance Computing and Communications (HPCC) department at IBM T.J. Watson Research Center as a Research Staff Member, where he was involved in the algorithmic development and architecture design of a multi-points and multi-standards capable video conferencing system. Dr. Liu is currently a program manager in the Exploratory Server System department at IBM T.J. Watson Research Center where he is involved in the IBM Blue Gene project – A supercomputer for protein folding and life science applications. Dr. Liu has worked on broadband e-commerce, interactive TV, pervasive video streaming, Set-Top Box, MP3 audio, system architectures for H.324 video conferencing, very low bit rate video coding, motion estimation, low delay MPEG-2 video coding, MPEG-4 system multiplexing, immersion computer game systems, and vision-enhanced human computer user interface (HCI) system. Dr. Liu also participated in both H.324 and MPEG-4 standards activities. His research interests include digital video compression technology, digital signal and image processing, computer vision, interactive games, multimedia communications, broadband e-business, mobile computing, deep computing, and neural networks.

T2 – Technical Session II: Component Techonology (I)

MEMS Technology and Its Application to Optical Cross Connects

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BIOGRAPHY

He received the B.S. and M.Eng. degrees in electrical engineering from Cornell University in 1993 and 1994, respectively. From 1994 to 2000, he has worked at Rockwell Science Center, Thousand Oaks, CA, where he has engaged in research and development work of various MEMS devices. Some of his major works have been on 2D optical scanner, current sensor, and tunable capacitor for RF applications. Currently, he is working at Tellium, Oceanport, NJ, where he has been focusing on developing large port count optical cross-connect switch.

B2 – Business Session II: Venture Business Success Stories
Session Chairperson

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BIOGRAPHY

Dr. Hsing, a Fellow of the IEEE and the SPIE-The International Society of Optical Engineering, is the Executive Director of Wireless Technology and Networking Systems Research and Internet Information Infrastructure Research at Telcordia Technologies (formerly Bellcore). A graduate of National Chiao-Tung University (in Taiwan) and the University of Rhode Island (1974, 1977), Dr. Hsing received his B.S. in Electrophysics in 1970, and his M.S and Ph.D degrees in Electrical Engineering in 1974 and 1977, respectively. He was selected by Bellcore to be a member of the Pipeline Development Program (PDP) in 1995 . Through this future leadership-training program, he has finished Executive Courses from the Stanford Business Graduate School, MIT Sloan School, the University of Texas at Austion, and the University of Illinois from 1995 through 2000.

Prior to joining Bellcore in 1986, he accumulated a wealth of research & development and product management & development experiences through affiliations with Burroughs, Xerox, GTE Labs, Telco Systems Fiber Optics Corporation, and TASC. In addition to manage two research departments, Dr. Hsing has also pioneered the commercialization of Telecom technologies for Bellcore in the Asia-Pacific region through a joint venture and business alliances with strategically positioned and well financed local companies. These business and academic achievements, and more than twenty-four years of telecommunications experience have earned him a position as an adjunct professor of Management and as an Advisory Council Member of the International Business Research & Education Committee at the Salem International University in Salem, West Virginia. Since 1990, he has been a member of the Technical Advisory Committee for the Computer & Communication Laboratories (CCL) of ITRI in Taiwan. He was invited to be a member of the Strategic Review Board (SRB) for The Executive Yuan of Taiwan's Government in 1997 and 1998. He has led Telcordia's team of representatives to join the US Delegation (led by William Daley, Secretary of Commerce) to attend the China-United States Telecom Summit in Guangzhou, China from March 31 through April 2, 1999. He is now also an Adjunct Professor with the Center of Telecom Research and the Electrical Engineering Department to involve with the gigabit wireless research initiative at Arizona State University.

Dr. Hsing has accumulated over 24 years in the telecommunications industry. He has been working in the areas of video communications, digital communications, VLSI communications circuits and systems, ISDN/HDSL/ADSL, and most recently wireless & mobile networking technologies. Since 1995, he has been involved in a number of diverse research projects spanning from theoretical work to product development, all in the Internet information, and Wireless Technology and Networking Systems areas. He is now managing two research departments in the area of Wireless Networking and Internet Information Infrastructure with 30 members of technical staff to work on projects which are sponsored by both commercial and government clients. He is now leading the efforts on Wireless Networking Security, Wireless Call Agent, NGN Transition and Economics, Strategic Analyses and Communications Business of The Future. He also lead the technical work on Broadband Wireless Access to Home and Business initiative

to address the technical challenge of achieving 200 Mbps wireless access at MMDS and UNII spectrum for wireless Internet and NGN (Next Generation Networks) applications. Dr. Hsing has been championing, leading, and contributing to research and development on all aspects of evolving the low-power wireless personal communications entitled Personal Access Communication System (PACS) specifications into a complete end-to-end (from ASIC chips to handset, base station, base station controller and programmable switch) commercially available system. He has also led R&D efforts and made contributions to design and demonstrate the first sign language telephone over ordinary telephone lines for the deaf community in 1984; to create and demo the world's first DCT VLSI chip (CMOS technology with 2um resolution) with other research groups in 1987; to design and demo the world's first QAM-based working ADSL system at T1E1's ADSL "Olympics" in 1993. In addition to his responsibility on PACS system development, he is now also leading the wireless effort on the next generation network (Wireless NGN) applications, Wireless ATM, and broadband wireless technologies and networking systems in the future. His experience and interests are in the areas of Communications Signal Processing, VLSI System, Video Coding and Image/Speech Communications, ATM Network, Broadband Wireless Networking and Technologies, Wireless Access Technology and Personal Communications Services. He has served as a Guest Editor of special issues on "Wireless ATM" (January 1997) and "High Speed Digital Subscriber Lines" (August 1991) for the IEEE Journal of Selected Areas in Communications.

He is now the Editor of the Academic Press Telecommunications Book Series, and was a Co-Editor-in-Chief (with Professor Y.Y. Zeevi of Technion, Israel) of the Journal of Visual Communication and Image Processing from 1990 through 1997. He also was an associated editor for the IEEE Transactions on Circuit and System (1989-1991). He will be the General Chair of the 10th Annual Wireless and Optical Communications Conference which will be held in Newark, New Jersey, USA on April 20 and 21, 2001.He was the founding chair of SPIE's Annual Conference on Visual Communications and Image Processing (VCIP) since 1986. He has been lectured for the "Packet Video: Video Communications over ATM-based Broadband Networks" course in Boston, Chicago, Lausanne, Taipei, the University of California at Irvine, and Columbia University. He is the author and a co-author of over 67 technical papers, three book chapters, and four patents. Dr. Hsing has also co-edited a book titled "Visual Communication: Technology and Application." with Dr. Andrew Tescher (Optical Engineering Press, 1990)

B2 – Business Session II: Venture Business Success Stories
Session Organizer

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BIOGRAPHY

Dah-Weih Duan received his Ph.D. degree in Electrical Engineering from the University of California, Los Angeles in 1992 where he received the Outstanding Ph.D. Award from School of Engineering and Applied Sciences for his works on high-frequency diffraction analysis and synthesis of reflector antenna systems. He joined IBM Thomas J. Watson Research Center in 1993 where he first worked on the Radio Frequency Identification (RFID) project, and focused on tag antenna design, RF front-end of field-powered integrated circuits, measurement techniques for RFIC and low-gain antennas, and full-wave electromagnetic analysis programs. Dr. Duan received an IBM Outstanding Innovation Award for this work, and the RFID system was later commercialized and being sold at large quantities. In 1999, he performed electromagnetic analysis on electrical interconnect and packaging structures for high-speed, high-frequency circuits, and provided design guidelines. In January 2000, he joined InfoValue Computing Inc. where he is currently working on the architecture and software design for scalable multimedia distribution and broadband video streaming. Dr. Duan has authored more than 40 technical papers, and received 20 issued US patents.

B2 – Business Session II: Venture Business Success Stories

Gee-Kung Chang
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BIOGRAPHY

Gee-Kung Chang is currently VP of technology in charge of strategy and planning at OpNext Inc. He was elected as a Telcordia Fellow in 1999. He served as Chief Scientist and Executive Director of Optical Internet Research at Telcordia Technologies between May 2000 and October 2001. He was the principal investigator of Internet Protocol directly over WDM systems using Optical-Label Switching techniques for DARPA sponsored Next Generation Internet project. He was also in charge of WDM optical networking element design, system testing, integration, and interoperability of multi-vendors optical network rings for the MONET Washington DC Network field trials. The MONET Washington DC network was successfully completed in November 1999. He led a team to deliver a wide variety of software controlled and managed WDM optical networking crossconnects in local exchange carrier (LEC) network testbed and provided high bandwidth real-time services and applications for the MONET New Jersey Area Network that demonstrated a national-scale reconfigurable transport WDM network. The MONET testbed result was demonstrated at OFC'97 in Dallas. He led a team that designed and demonstrated the first reconfigurable, multiwavelength all-optical network testbed for the Optical Networks Technology Consortium in 1994. The ONTC testbed was delivered for world-first live wavelength reconfiguration demonstration of WDM rings using five Optical Add/Drop Multiplexers at OFC'95 in San Diego and subsequently to Northern Virginia for Bellcore's Customer Solution Forum in 1995.

Gee-Kung Chang received his Ph. D. degree in Physics from the University of California, Riverside and a B. S. degree in Physics from National Tsing Hua University in Hsinchu, Taiwan. He joined Bell Laboratories as a Member of Technical Staff in Murray Hill, New Jersey in 1979. He was in charge of design, development, and construction of high performance prototype electronic switching fabric systems for 5ESS using high voltage silicon Bipolar Integrated Circuit, Gated Diode Switch, and CMOS IC technologies.

He has been granted twenty-eight patents and twenty-seven more are pending in the area of optoelectronic devices, high speed integrated circuits, telecommunication switching components and systems, WDM optical networking elements and systems, multiwavelength optical networks, optical network security, and optical label switching routers. He has co-authored over 130 Journal and Conference papers. GK won Bellcore's President Award in 1994 for his pioneer work in WDM optical networking. He received R&D 100 award in 1996 for his contribution in optical networking add-drop module. He was elected to the Fellow of Photonic Society of Chinese American in 2000. He was a co-chair of IEEE LEOS Topical Conference on Broadband Optical Networks, and the chair of Networks Committee of 2000 Optical Fiber Communications Conference for Network Switching, Access, and Routing. He was the principal guest editor of a special issue on Optical Networks for IEEE Journal of Lightwave Technologies, published in December 2000. He and his team have won the best Technical Paper Award of SAIC/Telcordia Technologies in 2001 on Design and Implementation of Optical Label Switching Network Element. He was the Program Chair of 2001 Photonics in Switching Conference sponsored by OSA in June 2001 in Monterey California.

B2 – Business Session II: Venture Business Success Stories

Kevin K.W. Whang
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BIOGRAPHY

With 14 years of industry experience at AT&T, Bell Laboratories, Lucent Technologies and Siemens &Fujitsu Joint Venture in Taiwan, Kevin Whang has introduced the global marketplace to some of the industry's leading new technologies for carrier infrastructures. Responsible for leading Village Networks' marketing, product management and business development teams, Kevin is spearheading the productization of the industry's first optical packet node, the iOPN2000, and its global introduction. Additionally, he is leading Village Networks' business development and sales.

Kevin's industry accomplishments include spearheading the outbound marketing efforts for Lucent's highly successful PacketStar product line. Credited with pioneering the first high-density, carrier-class packet voice gateway product and architecture, Kevin worked closely with service providers to define market requirements and create the product specifications to respond to these needs. Prior to his work at Lucent, Kevin led the Siemens and Fujitsu joint venture in its pioneering efforts to introduce its SDH and SONET product line to the Asian telecom market. Kevin defined the parameters of the joint venture, executed the business development strategy, and led the localization of the product definitions.

Kevin has published over 30 papers on voice and data architecture, packet-circuit inter-working and management systems, and holds several patents in these areas. Kevin received his M.S. and Doctor of Science degrees from Washington University in St. Louis.

Opening Remarks (Day 2)

Dr. Ya-Qin Zhang
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BIOGRAPHY

Ya-Qin Zhang is currently the Managing Director of Microsoft Research in China. He was previously the Director of Multimedia Technology Laboratory at Sarnoff Corporation in Princeton, NJ. He has been engaged in research and commercialization of MPEG2/DTV, MPEG4/VLBR, and multimedia information technologies. He was with GTE Laboratories Inc. in Waltham, MA from 1989 to 1994. He has authored and co-authored over 200-refereed papers in leading international conferences and journals. He has been granted over 40 US patents in digital video, Internet, multimedia, wireless and satellite communications. Many of the technologies he and his team developed have become the basis for start-up ventures, commercial products, and international standards. He serves on the Board of Directors of five high-tech IT companies. Ya-Qin served as the Editor-In-Chief for the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY from July 1997 to July 1999. He serves on the Editorial boards of seven other professional journals and over a dozen conference committees. He has been a key contributor to the ISO/MPEG and ITU standardization efforts in digital video and multimedia. Ya-Qin is a Fellow of IEEE. He received his B.S. and M.S. in Electrical Engineering from the University of Science and Technology of China (USTC) in 1983 and 1985. He received his Ph.D in Electrical Engineering from George Washington University, Washington D.C. in 1989. He had executive business training from Harvard University.

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

Session Chairperson

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BIOGRAPHY

Ms Diana Liu is the President of Cansbridge Capital Corp., which invests and incubates high technology companies in the Pacific North West areas. Prior to founding Cansbridge Capital, Ms. Liu was the Executive Vice President of Polaris Securities from 1994 to 1998 responsible for its North American operations. Ms. Liu was also a director of International Banking at Royal Trust from 1991 – 1994 in charge of global private banking business. Ms. Liu is the current vice chair of Monte Jade Science and Technology Association (Global) and immediate past chair for Monte Jade's Western Canada Chapter, and serves as an advisor to a number of Canadian based high tech as well as venture capital firms.

Having graduated from the University of British Columbia in Economics in 1986, Ms. Liu has served as Investment Advisor at CIBC Securities in Canada. Ms. Liu has successfully bridged the gap between high technology companies and venture capital firms on both sides of the Pacific Ocean. She has been instrumental in helping a number of Canadian based high tech start-ups in building presence in Asia. Some of Ms. Liu's flagship investments include: Intrinsyc Software, a Toronto Stock Exchange listed company, which provides embedded solutions to create, link and manage networks of Internet devices; NCompass Labs, which develops web content management solutions for the Microsoft Platform, and was recently acquired by Microsoft Corp. as part of Microsoft's .NET strategy; fSONA Communications, a British Telecom investee company, has developed a series of low-cost, high-performance laser products for telecommunications and data networking services providers; and BaySpec, Inc., a Silicon Valley based fiber-optic components company, which manufactures photonics devices for the rapidly expanding fiber optics networking & telecommunications market.

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

Session Organizer

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BIOGRAPHY

Lance M. Lan received his B.S. in Electrical Eng. from National Taiwan Univ. in 1974, and his Ph.D. in Computer Architecture from UCLA in 1985. Between 1978 and 1985, he was involved in several U.S. Dept of Defense projects in companies in Los Angeles and at UCLA. His Ph.D. dissertation was on task assignment to parallel processors.

Dr. Lan joined AT&T Bell Labs in 1985 as a Member of Technical Staff, working on base station architecture of AMPS cellular telecom systems. He was Deputy Country Manager for AT&T China (at Beijing) between 1988 and 1991, coordinating AT&T's multiple-business-unit efforts in China. He fostered AT&T's relation with Chinese government and business entities. He ran a 3-year Senior Management Development Program to select & train 50 senior Chinese officials in U.S. universities & within AT&T; they became AT&T's friends in China.

Dr. Lan returned to Taiwan in 1992, as an Executive Assistant to General Director of Computer & Comm Research Labs (CCL) in the Industrial Technology Research Institute, and later held a simultaneous 2nd position as the Director of CCL's Strategy & Development Division. In 1995 he joined Cirrus Logic as General Manager of its Greater China Regional Office (based in Taiwan), selling over US$200M / year of IC products (VGA, sound chips, fax/modem chips, etc).

In 1997 he became President of a small ISP – Acer Internet Services, Inc (Acer.Net), which developed several Internet-based systems including AcerMall (Taiwan's first online shopping), online newspapers, games, etc. In early1999, he spun off the ISP division from Acer.Net, to form a new ISP company - Pacific-Acer Global Internet Corp (Pagic.Net), a joint venture between Pacific Telecom Group and Acer Group.

Later, he joined KG Telecom (a GSM service carrier in Taiwan) as the Director of Product Development Div, responsible for developing value-added services including setting up its WAP and GPRS systems.

Dr. Lan was enlisted in mid 2000 by his former colleague Dr. Lance Wu and have since been the Senior VP & CTO for Vista Incubation Technology Corp – Taiwan's sole VC with incubator activities. The two Lance's (Lance Wu & Lance Lan) are striving to grow Vista into a global company.

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

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ABSTRACT

In industry, we have learned that producing a good idea is just a very first step towards a successful product. With the burst of the dot com bubble, we have also faced the reality that it is easy to dream, but it needs real hard work and a lot of support to turn a dream into a start-up company. Have recognized this need from entrepreneurs, Siemens established Siemens Technology-To-Business Center (TTB) in Berkeley, California in March, 1999. TTB is a dynamic and flexible interdisciplinary R&D&B (Research &Develop & Business) organization which serves as a technology-to-business factory. The mission of TTB is to add in significant value (domain know-how, complementary technologies, business opportunities, seed money) to bring internal/external high risk/high return technology/business opportunities quickly into the market via start-up companies or Siemens business units.

TTB is specialized in identifying the nascent technologies in the areas of industrial automation, information, and communication, and then incubating them into high potential businesses with the support of Siemens extensive business domain know-how and world wide sales and marketing strength.

With in 5 minutes walking distance to UC Berkeley campus. TTB works closely with UC Berkeley engineering and business schools as well as the venture and business community in the Bay area.

BIOGRAPHY

Arding Hsu is the President & CEO of Siemens Technology-To-Business Center (TTB) in Berkeley. He has 17 years industrial experience with a proven track record to bring unique technologies into successful products. Prior to TTB, he was the department head of Multimedia/Video Technology in Siemens Corporate Research. He had the responsibility to provide Siemens worldwide business divisions with innovative multimedia technologies and to work with them to transfer innovations into real businesses. He has published more than 30 papers and holds many patents. Arding Hsu holds a Ph.D. in Computer Science from Rutgers, the State University of New Jersey.

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

Corporate Development and Alternative Financing Strategies in a Tough Market

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ABSTRACT

Almost no technology companies can avoid adverse impacts of recent economic downturns, therefore how to continue growing a business with corporate development and alternative financing strategies, as opposed to traditional IPO, M&A and Private Placement, becomes a critical lesson. The presentation will analyze the strategies from investment banking and corporate perspectives. Topics will focus on how domestic and international companies should strategize their Alternative Public Offering, M&A/Private Equity Capital Raising, and other corporate development activities; as well as some important factors they would come across when structuring the transactions.

BIOGRAPHY

Mr. Sung has extensive experience in corporate finance, corporate development and investment banking within the high growth technology sectors. Mr. Sung is the founder of AccroLynch Capital, LLC, a New York based investment banking firm providing corporate finance advisory services on public offering, private placement and M&A transactions. In both consulting and operational roles, he has assisted numerous companies with the development of strategic plans, debt and equity financing and mergers and acquisitions, including substantial transactions over the past several years involving companies in the software, media, communications, E-commerce and manufacturing industries. He was the Vice President at Terremark Worldwide, Inc., a public company that develops and operates Network Access Point (NAP) telecommunications data centers in the US, Latin America and the Far East. He led the company's financing efforts with the Wall Street Investment Banking firms and was also responsible for all the merger and acquisition activities. Mr. Sung's corporate finance experience also includes his tenure as CFO at SpaceLogix, Inc., a telecommunications network and Internet infrastructure company involving a wide range of communications business and managed services. His investment banking foundation was formed and polished while he held a position as Investment Director at Rahill Capital, LLC, a private equity and merchant banking firm focusing on technology sectors. Mr. Sung has also worked extensively in other technology and high growth sectors, including his tenure as senior management at Market Technology Semiconductor International, where he was responsible for the development of joint ventures and strategic alliances throughout Asia. Mr. Sung received a BS in Mechanical Engineering from National Cheng Kung University and a MBA in Finance from Columbia Business School.

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

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BIOGRAPHY

Through a wide ranging network of investment bankers, venture capitalists, merchant bankers, and asset and non-asset based lenders, Steve Nagler assists clients of the firm in arranging financing to accomplish their goals. Both private and public financings as well as mergers and acquisitions have been accomplished through his efforts. His clients include biotechnology, health services, medical devices, entertainment and media, software and consumer products companies. Mr. Nagler's activities focus on the introduction of clients to financing contacts and the active negotiation of financing terms and conditions.

Mr. Nagler previously served as General Counsel of Patlex Corporation where he structured the successful licensing program on which the success of the company was based. He also established contacts throughout the corporate world which enable him to assist his corporate clients with the development of corporate partnering arrangements. He understands the needs of his clients to form such alliances as a means of expanding their ability to secure financing as well as in the manufacturing and marketing of their products.

Mr. Nagler's ability to arrange and structure financings meshes with the entrepreneurial capabilities of his partners and their ability to complete the corporate and securities documentation needed to close transactions.

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

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BIOGRAPHY

PROFESSIONAL SPECIALTIES:

+ **Software Development Management:** Specialize in End-to-end Large-scaled Carrier-grade Telecom Software Development (from Requirement, Design, Coding, Testing to Field Deployment and Customer Support).

+ **Organization Strategist and Change Agent**: Specialize in creating high performance Hi-tech software organization and project either from creating a new org from ground up or taking over a legacy low performance organization and turn the org around.

PAST EXPERIENCE

- Executive Director – NGN Softswitch Development
- Director – NGN Softswitch Development, Surveillance Database Technology Development, Computing Platform Development
- Principle Customer Consultant
- Senior Software Quality Assurance Specialist
- Senior Communication Software Engineer
- Communication Protocol Software Development Consultant

HONOR AND ACHIEVEMENT

1. Bellcore Pipeline Development Programs (Executive MBA program)
   + Center for Management of Excellent – Class 1996
   + Leadership Institute – Class 1997
2. Certified Project Management Professional (PMP) from Project Management Institute (PMI) – 1999 (Certification #11172)

EDUCATION

M.S. in Computer Science, University of Wisconsin - Madison, 1981
M.S. in Operations Research, University of Wisconsin - Madison, 1980
B.S. in Computer and Control Engineering, National Chiao-Tung University, Taiwan, 1975

BETTER HALF: Lynn Hsu

P3 - Plenary Session III (Panel): Entrepreneurship: How to Turn Ideas into Products, and Dreams into Companies

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BIOGRAPHY

James C. M. Hwang graduated from National Taiwan University with a B. S. degree in Physics in 1970. He completed his M. S. and Ph. D. in Materials Science and Engineering from Cornell University in 1973 and 1976, respectively. He had twelve years of industrial experience working at IBM, AT&T, GE and GAIN. In 1988, he joined Lehigh University as Professor of Electrical Engineering and Director of Compound Semiconductor Technology Laboratory. In addition, he currently holds a part-time appointment as Nanyang Professor at Nanyang Technological University, Singapore and dabbles in as a business angel. He has been a consultant for the U. S. Government and many electronic companies, in the area of RF/microwave devices and integrated circuits. He co-founded GAIN and QED and saw the former go bankrupt while the latter become a public company (IQE). He has published about 150 technical papers and has been granted four U. S. patents. He is a Fellow of the Institute of Electrical and Electronic Engineers.

P 4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes
Session Chairperson

Dr. Kent H. Cheng
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BIOGRAPHY

Dr. Kent H. Cheng is a patent attorney with the law firm of Cohen, Pontani, Lieberman & Pavane in New York City. His practice of more than ten years includes client counseling, patent prosecution, opinion work, licensing and litigation in various areas including pharmaceuticals, medical devices, chemical processing and semiconductor fabrication.

Dr. Cheng received his B.A. in Chemical Physics in 1974 from Columbia University; Ph.D. in Chemistry in 1978 from Brandeis University; and J.D. in 1991 from Pace University School of Law. After his postdoctoral fellowship at Exxon Corporate Research Center, Dr. Cheng worked as a Research Chemist at Mobil Research and Development Corporation, followed by an eight year tenure with Stauffer Chemical Company where he participated in research and environmental regulatory projects.

Dr. Cheng is registered to practice before the U.S. Patent and Trademark Office since 1989 and is admitted to practice law in New York, Connecticut and the District of Columbia.

P 4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes
Session Organizer

Albert H. Wang, ESQ
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BIOGRAPHY

Albert H. Wang is a senior attorney in the Corporate Department of Phillips Nizer Benjamin Krim & Ballon LLP. Mr. Wang concentrates his practice in the area of corporate and financial transactions, including securities transactions, mergers and acquisitions, international and domestic joint ventures, acquisitions of distressed assets, broker-dealer regulation, and aircraft finance and leasing transactions.

Mr. Wang graduated from the University of California, Los Angeles, Phi Beta Kappa with a B.A. in Business Economics and an M.A., Magna Cum Laude, in Economics in 1990. He received his J.D. from Cornell University, School of Law in 1994, where he was a member of the Niagara International Moot Court Team from 1992 - 1994.

Mr. Wang is the legal counsel and an advisory member of the Asian American Business Development Center, and a member of the Chinese Finance Society, the American Bar Association and the New York State Bar Association. Prior to joining the firm, Mr. Wang was a senior associate at Schulte Roth & Zabel LLP. He is admitted to practice in the State of New York. Mr. Wang is fluent in Mandarin Chinese and Taiwanese, and conversational in Spanish.

P 4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes

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BIOGRAPHY

Mr. Cohen is the founding partner of the law firm of Cohen Pontani Lieberman & Pavane in New York City. He has extensive experience in counseling and representing technology companies in patent licensing and litigation. He is an Adjunct Professor of Law at the New York Law School, and a former instructor and lecturer at the Practicing Law Institute. He is presently a regular visiting lecturer on U.S. intellectual property law at the Peking University, Beijing, China. Mr. Cohen is admitted to the New York bar, U.S. District Courts: Southern, Eastern, Northern and Western Districts of New York, and Western District of Wisconsin, Eastern District of North Carolina; U.S. Courts of Appeal: Second, Ninth and Federal Circuits; U.S. Supreme Court, 1977; and is registered to practice before U.S. Patent and Trademark Office since 1953.

P 4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes

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BIOGRAPHY

Sonny Whang is a partner in the Corporate Department at Phillips Nizer Benjamin Krim & Ballon LLP.

Mr. Whang concentrates his practice in the areas of general corporate counseling and transactional work, representing private and publicly-held companies in securities law, corporate financing (including venture capital transactions) and mergers and acquisitions transactions. Mr. Whang also actively counsels clients in the day-to-day aspects of organizing, operating and expanding their businesses.

Mr. Whang is also legal counsel to the U.S. Taekwondo Union, the national governing body of Taekwondo and a Class A member of the U.S. Olympic Committee. Mr. Whang is the co-author of "Taekwondo - The State of the Art" published in 1999 by Random House.

Prior to joining the Firm, Mr. Whang was an associate attorney with Fulbright & Jaworski LLP in New York and Bingham Dana LLP in Boston. Mr. Whang received his A.B. degree in East Asian Studies from Dartmouth College in 1986, his J.D. from Cornell Law School in 1989, and his Master of Laws (LL.M.) degree from New York University School Law in 1990.

As the son of a career diplomat for the Korean government, Mr. Whang grew up in Japan, the Philippines, Argentina, Korea and the United States, and studied and traveled extensively through Western Europe. Mr. Whang speaks Korean, Spanish and French with varying degrees of proficiency, and is conversational in Japanese.

P 4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes

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BIOGRAPHY

Dr. Kent H. Cheng is a patent attorney with the law firm of Cohen, Pontani, Lieberman & Pavane in New York City. His practice of more than ten years includes client counseling, patent prosecution, opinion work, licensing and litigation in various areas including pharmaceuticals, medical devices, chemical processing and semiconductor fabrication.

Dr. Cheng received his B.A. in Chemical Physics in 1974 from Columbia University; Ph.D. in Chemistry in 1978 from Brandeis University; and J.D. in 1991 from Pace University School of Law. After his postdoctoral fellowship at Exxon Corporate Research Center, Dr. Cheng worked as a Research Chemist at Mobil Research and Development Corporation, followed by an eight year tenure with Stauffer Chemical Company where he participated in research and environmental regulatory projects.

Dr. Cheng is registered to practice before the U.S. Patent and Trademark Office since 1989 and is admitted to practice law in New York, Connecticut and the District of Columbia.

P 4 – Plenary Session IV (Panel): Legal Basics for IT Entrepreneurs and Investors: How to Protect Your Rights and Prevent Disputes

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BIOGRAPHY

Albert H. Wang is a senior attorney in the Corporate Department of Phillips Nizer Benjamin Krim & Ballon LLP. Mr. Wang concentrates his practice in the area of corporate and financial transactions, including securities transactions, mergers and acquisitions, international and domestic joint ventures, acquisitions of distressed assets, broker-dealer regulation, and aircraft finance and leasing transactions.

Mr. Wang graduated from the University of California, Los Angeles, Phi Beta Kappa with a B.A. in Business Economics and an M.A., Magna Cum Laude, in Economics in 1990. He received his J.D. from Cornell University, School of Law in 1994, where he was a member of the Niagara International Moot Court Team from 1992 - 1994.

Mr. Wang is the legal counsel and an advisory member of the Asian American Business Development Center, and a member of the Chinese Finance Society, the American Bar Association and the New York State Bar Association. Prior to joining the firm, Mr. Wang was a senior associate at Schulte Roth & Zabel LLP. He is admitted to practice in the State of New York. Mr. Wang is fluent in Mandarin Chinese and Taiwanese, and conversational in Spanish.

Luncheon Keynote

Economic Development Strategies for the Era of Knowledge-based Economy

Po-Chih Chen
Chairman
Council for Economic Planning and Development
Executive Yuan, Republic of China

BIOGRAPHY

Birth : February 1, 1949

Education: Ph.D. in Economics, National Taiwan University (1979)

Current Occupation:

Chairman, Council for Economic Planning and Development
Executive Yuan, Republic of China
Since May 20, 2000

Experiences:

Instructor, Department of Economics
National Taiwan University, 1976-1979

Associate professor, Department of Economics
National Taiwan University, 1979-1985

Visiting associate professor, Brown University, 1982-1983

Professor, Department of Economics
National Taiwan University, 1985-2000

Director, Department and Graduate School of Economics
National Taiwan University, 1988-1990

Secretary General, Chinese Economic Association, 1990-1993

Director, Board of Directors, Central Bank, 1998-2000

T3 - Technical Session III: Networking Technology
Session Chairperson

David T. Sun
Chief Technical Officer
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BIOGRAPHY

David T. Sun joined Eastern Telecommunications Company in Hongzhou, China in September 2001, as the Chief Technical Officer. His team is responsible for developing and manufacturing the 3G wireless systems and handsets. Previously, Dr. Sun had worked for Bell Labs Lucent Technologies in Wireless Systems (AMPS, TDMA, GSM and 2G & 3G CDMA) from 1985 to 2001. He had been assigned to Beijing, China as the Technical Director from 1993 to 2000, where he built up the Lucent Wireless Technical Center for conducting new product introduction, network design and project implementation in the China market. David received his bachelor degree from the Electrical Engineering department of National Taiwan University, and he was awarded his Masters and Ph.D degrees in Electrical Engineering by the University of Texas.

T3 - Technical Session III: Networking Technology
Session Organizer

Fuchun Joseph Lin
Chief Scientist, Applied Research
Telcordia Technologies
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BIOGRAPHY

Dr. Fuchun Joseph Lin is a Chief Scientist in Applied Research of Telcordia Technologies (Formerly Bellcore). He has thirteen years of experience in both Bell Labs and Telcordia Technologies. He received his Ph.D. in Computer Science from the Ohio State University in Columbus, Ohio and his BS and MS in Computer Science from National Chiao-Tung University in Hsinchu, Taiwan. He joined Applied Research of Telcordia Technologies in 1992 after four years of work experience at Bell Labs in the 5ESS Switching Division. He was promoted from a Research Scientist to a Senior Research Scientist in 1996, then a Director in 1997, and a Chief Scientist in 2000. He currently serves as a project manager and technical director at Telcordia Applied Research, managing Telcordia External Research Programs on VoIP and Next Generation Networks and Telcordia Internal Research Programs on 3G Wireless Call Agent and IP-based Content Delivery. He is a member of the IEEE Communications and Computer Societies, and also a member of the ACM. He serves in the program committees of several international conferences and has won two patents and published two dozens of technical papers in professional conferences and journals.

T3 - Technical Session III: Networking Technology

Mobile Internet

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ABSTRACT

High speed data capabilities (>40 kb/s) in the wireless environment are rapidly becoming a reality. With the increased access speeds and the "always on" characteristics of wireless packet data come opportunities for operators to provide new applications and services to mobile subscribers. At the same time, other new complimentary capabilities such as the ability to determine the location of wireless subscriber units, and the ability to provide enhanced billing capabilities (i.e. mobile commerce) are also becoming reality. These new capabilities, in conjunction with existing capabilities like short message services and voice mail, all play together to provide a suite of capabilities that together enable the "Mobile Internet". For subscribers to actually realize the potential of the Mobile Internet, the right mix of applications, services, and content – i.e. those capabilities that bring value to the end user in the form of entertainment, convenience, information, mobile commerce, etc., must be integrated and made available in an easy to access manner. Hence, the final piece necessary for the success of the Mobile Internet is the evolution of ever more powerful user devices that allow this information to be displayed and used in a simple fashion. All of this adds up to a time of great opportunity, great uncertainty, and great change for wireless operators and wireless equipment providers.

BIOGRAPHY

Patrick Li is currently the Director of the Base Station Systems Engineering Department in Whippany, NJ. His team is responsible for specifying requirements for Lucent's base station hardware, call processing, and OA&M, as well as characterizing the radio link performance with respect to coverage and capacity for voice and packet data. His team is currently involved in specifying requirements for the OneBTS platform, Flexent TDMA & CDMA product lines, and performance warrantees for UMTS, TDMA, and CDMA (2G, 3G1X, 3G1X-EV).

In his previous assignment, he was the Managing Director of Asia Pacific Wireless Technical Centre of Lucent Technologies providing support for the design and deployment of new cellular technologies in the Asia/Pacific Region (i.e. 2G & 3G CDMA). He worked with customers to educate them on new technologies (i.e. 3G systems and wireless data), to understand their business and technical needs, and put together turnkey network solutions. Patrick worked in A/P from 1993 to 2000.

Patrick Li was awarded his Masters and Bachelor degrees in Electrical Engineering by the Massachusetts Institute of Technology (MIT).

He joined AT&T Bell Laboratories in 1987 developing requirements for the design and provisioning of wireline networks. In 1991, he moved to base station systems engineering and architecture where he developed requirements for AT&T's next generation digital cellular systems.

T3 - Technical Session III: Networking Technology

IP-Based Content Distribution and Delivery

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ABSTRACT

In recent years, content distribution and delivery technologies have received lots of attention for their promises in improving Web performance from the viewpoints of both content providers and end users. Since the early enormous success of the Web, caching techniques was employed for Web accesses in the hope of reducing the perceived user response times. However, conventional Web caching only enables content distribution and delivery under passive mode in which origin servers have no control over where the contents are stored and when they are served to the requesting end users. In this talk, motivations that prompt the advancement of the content distribution and delivery technologies will be discussed, taxonomy of these technologies will be presented, current standardization effort in IETF will summarized, as well as challenges for advancing content distribution and delivery technologies will be identified. This talk will also be highlighted by the presentation of the ongoing effort at Telcordia Technologies to illustrate the concepts of content distribution and delivery, stress the potential importance such technologies may have in shaping the outlook of tomorrow's Web information retrieval model.

BIOGRAPHY

Cho-Yu Jason Chiang received his M.S. and Ph.D. degrees in Computer and Information Science from The Ohio State University at Columbus, Ohio in 1995 and 2000, respectively. Dr. Chiang joined Applied Research, Telcordia Technologies in 2000. Since joining Telcordia, he has actively participated in an array of projects and currently set his focus on the self-configuration of ad hoc networks and content distribution and delivery. Dr. Chiang has worked in the area of IP-based content distribution and delivery since conducting his Ph.D. research, which was summarized in his dissertation titled "On Building Dynamic Web Caching Hierarchies."

T3 - Technical Session III: Networking Technology

Business Infrastructure for the Next Generation Network

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ABSTRACT

New technologies & policy trends are opening up many avenues of commercial entry into the telecommunications industry, but both the new and the more traditional players are discovering that, in the new industry, there is a shortage of the 'business infrastructure' required for viable commercial relationships in a multi-provider environment. This challenge is emerging at many levels in the communications value chain, from physical interconnection to applications outsourcing. For instance, the "peering conflicts" between large & small ISPs in the late 1990's arose largely because the peering approach to service transactions (adopted among essentially symmetric players in the pre-commercial Internet) creates conflicting incentives among interconnected parties as traffic exchanges become asymmetric. Fortunately, the currently open nature of the industry is allowing players to establish new businesses based on providing solutions to such issues. Peering conflicts, for instance, are steadily being reduced by a variety of commercial interconnection solutions, such as 'private NAPs' and managed interconnection services. However, physical interconnection and interconnection management are only two of the necessary dimensions in inter-network service transactions. There is also the more 'virtual' connectivity represented by standardized service definitions, firm contracts, contract management and other business elements of multilateral commercial relationships. This presentation surveys the state of development in the new business infrastructure, including a discussion of the forces driving the new "market-makers" such as Enron, and it discusses the business & technical implications of these changes for the more traditional players in the industry.

BIOGRAPHY

Sanford Marble joined the Applied Research unit of Telcordia Technologies at Morristown, NJ in 1995, a few months before he received his Ph.D. in Economics from the University of Texas at Austin in 1996. At Telcordia he has worked on a range of problems in the economics of competitive network industries, including regulatory issues arising from the 1996 Telecoms Act, the economics of network interconnection (in both international telecommunications & the Internet), and the development of new product & service strategies. For the past few years, his interests in the market-driven development of network industries have led him to research in the industry dynamics represented by new phenomena such as the bandwidth exchanges and other new types players in the telecommunications industry. In the last two years he has made a number of presentations in this area at industry technical & policy conferences.

T3 - Technical Session III: Networking Technology

IP in Radio Access Network: Fact or Hypes

Mooi Choo Chuah
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ABSTRACT

Recently, various standard bodies like 3GPP, 3GPP2 and MWIF have been exploring on the possibilities of using IP in Radio Access Network. In this talk, we will explore the motivations that drive them towards this direction, discuss on the advantages of using IP and remove some misconceptions. We will also present some performance work we have done in this area.

BIOGRAPHY

Mooi Choo Chuah is a Technical Manager in Communications Technologies and Performance dept in Bell Laboratories, Lucent Technologies. She has a Phd in Communication Systems and Theory from U. C. San Diego. She has been with Lucent Technologies since 1991. She has worked on many aspects of wireless systems e.g. radio link protocols, CDMA power control algorithms, MAC design, architecture and protocol design. She has also worked on data networking protocols like MPLS, Diffserv etc. She has been awarded 4 patents and has 45 more pending.

B3 – Business Session III: Entrepreneurship Development Workshop: Entrepreneur Character Building

Session Chairperson

Frank W. Lee
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ABSTRACT

Dr. Lee is currently working at DuPont Pharmaceuticals Company as Director of Preclinical Drug Metabolism and Pharmacokinetics. He is also the Chairman and co-founder of Chinese Entrepreneur Association, a non-profit organization. Dr. Lee obtained his BS degree in chemistry from Chung-Yuan University in Taiwan in 1968 and completed his MS degree in organic chemistry in 1974 from California State University at Sacramento. Dr. Lee received his Ph.D. in Pharmaceutical Chemistry from the University of California at San Francisco in 1987. From 1975 to 1987 he worked in the Drug Metabolism Department at Syntex Research Institute involving pre-clinical and clinical pharmacokinetic and metabolism investigations of new chemical entities. He then worked for Glaxo, Inc. from 1987 to 1995 and subsequently Glaxo Wellcome Inc. from 1995 to 1997 in the Department of Drug Metabolism as Senior Research Investigator, Principal Research Scientist and Section Head.

Dr. Lee has been involved in the development of many drugs on the market including Cardene, Anaprox, Norinyl, Cytovene, Toradol, Cutivate, Flonase, Temovate, Zantac, Imitrex and Sustiva. He has served as a leader for numerous development and discovery project teams at Glaxo Wellcome Inc. and DuPont Pharmaceuticals Company. Dr. Lee was an Adjunct Assistant Professor in the School of Pharmacy at the University of North Carolina at Chapel Hill from 1989 to 1997. He is a member of AAPS, ISSX, ACS and SCBA.

B3 – Business Session III: Entrepreneurship Development Workshop: Entrepreneur Character Building

Session Organizer

Zhibin Lei
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BIOGRAPHY

Zhibin Lei received his B.S. from Beijing University, and M.S. and Ph.D. in Electrical Engineering from Brown University. He has many years of experience in telecommunications network development and management (including Bell Labs, Lucent Technologies, Panasonic, Walter Hunter, etc.), and has led wireless and multimedia network projects in full circles of research, development and deployment. He was the Meritorious Award winner of Mathematical Contest in Modeling, sponsored by SIAM, in 1989, and held a CRM-UBC Fellowship for Mathematical Biology Summer School at University of British Columbia, Vancouver, Canada, in 1993. He has published more than 60 technical papers, book chapters, books and reports in the area of computer and networking technologies. He has served as conference chair, journals and research proposal reviewer and been invited for keynote speeches and panel discussions in many technology conferences. He was the general conference chair for Emerging Internet and Computer Technologies Conference 1999, Piscataway, NJ, and E-Business in the New Century 2000, Newark, NJ. He is the Chairman of the Advisory Board for MicroSat Networks, Inc., the Presidents of Hi-Tech China Network, Inc. and Hua Sheng e-Incubator Project (Guang Zhou), and a member of ACM, IEEE, SPIE, and Sigma Xi. He was also the President of New Jersey Chinese Computer Professionals Society (1999-2001) and Director of Chinese Association of Science and Technology (CAST-USA). He was selected as a member of International Who's Who of Information Technology for year 2000.

B3 – Business Session III: Entrepreneurship Development Workshop: Entrepreneur Character Building

Unique Entrepreneurship: A Tortoise Mentality

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ABSTRACT

The recent fall of the DOT.COM companies is a good reflection of the disconnected, even vaporous nature of entrepreneurial dreams today. Many people claim that the marketplace is lacking; others believe the technology is not solid; others say greed is the problem. This talk is focused on the qualities such as endurance, patience, knowledge of the marketplace, trust, attitude, even love – old fashioned, anachronistic qualities to many entrepreneurs -- can make or break a new venture. Oddly enough, these qualities are often missing in a generation accustomed to doing business at warp speed, using information to create competitive advantage, relying on instant action and reaction and virtually limitless pots of investor gold. By contrast, the new entrepreneurs require enduring qualities, what I call, collectively, "the tortoise mentality." In the race to capture the 21st Century marketplace, entrepreneurs need something more than competitive "hare-like" determination and the urge to get rich quick to weather reversals of fortune. As Aesop tells it, the tortoise, not the hare, wins the race by focusing relentlessly on the far horizon, then the finishing line, combining benevolence, courage, direction, endurance, and a passion for the journey as much as the end goal.

BIOGRAPHY

Dr. Chris Pak is the President & CEO of Molecular Targeting Technology, Inc. He was formerly associated with Centocor in the Research and Development Department. Prior to this, he was associated with Mallinckrodt Inc. in St. Louis for two years. Dr. Pak's recent awards include the Distinguished Visiting Alumni Award from the State University of New York at Plattsburgh, SUNY Honor Roll of Alumni, and Ben Franklin Emerging Business Award. Dr. Pak is the former President of the Chinese American Society of Nuclear Medicine and Co-Chairman of the First World Chinese Nuclear Medicine Conference held at Wuxi, China in 1993. Dr. Pak was the President of Monte Jade Science and Technology Association of Mid-Atlantic from 1998-1999 and the Vice-Chairman of the National Monte Jade Science and Technology Association. Currently, Dr. Pak is a board member of CyberFone Inc., Monte Jade-Mid Atlantic and the President of the Chinese Entrepreneur Association-Delaware Chapter. Dr. Pak holds seven patents in the diagnostic imaging and therapy field and has published over 40 articles covering the use of antibodies for cancer and cardiovascular disease.

B3 – Business Session III: Entrepreneurship Development Workshop: Entrepreneur Character Building

Faith, Freedom and Entrepreneurship

Nelson Lou
Manager Director
China Partners Group

ABSTRACT

Essence of my talk is centering on the following:

- Nature and Nature Laws
- Pilgrims, US economic history and Elliott Wave
- Faith, Freedom and Entrepreneurship
- The Good News "Eternity in their heart" – where the first Golden Spiral is seen?

BIOGRAPHY

Mr. Lou has over 25 years experience in biopharmaceutical investments and nuclear engineering. He is the Managing Director of China Partners Group, and has held key positions with Paine Webber and Combustion Engineering. Mr. Lou has in-depth understanding and knowledge of the marketing and investment in biotechnology. He spent five years promoting Pastor S. Y. Kou evangelical tours in China, and finally got the approval from the Chinese State Council in 1992.

B3 – Business Session III: Entrepreneurship Development Workshop: Entrepreneur Character Building

Jeffrey Radov
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BIOGRAPHY

Mr. Radov is an entrepreneur and businessman whose twenty-five year career has focused mostly on media and communications endeavors. He currently is a Founder-in-Residence at Silicon Alley Seed Investors (SASI) in New York. SASI invests in seed- and early-stage technology companies in the New York metro area and is backed by Canaan Partners, Rho Management, and Sevin Rosen Funds, three of the country's largest and most prominent venture capital firms.

Previously, Mr. Radov was CEO and Co-Founder of VocaLoca, Inc., a California-based technology company that enables very simple creation of audio and visual micro-casts on the Internet. He earlier was Executive Vice President of Business Development for About, Inc. and was its Chief Financial Officer for its first two years. About created a network of hundreds of GuideSites that humanized the Internet and has become the sixth busiest Internet property. About went public in 1999 and recently merged with Primedia (Nasdaq: PRM).

Mr. Radov's background includes both financial and operating roles in broadcasting, films, cable television and online services. He has worked at or with Prodigy, Bell Atlantic, Cablevision Systems Corporation, Sony's Columbia Pictures, and Merrill Lynch. He is a graduate of Cornell University and earned an M.B.A. from The Wharton School of the University of Pennsylvania.

T4 – Technical Session IV: Component Technology (II)
Session Chairperson

Zon-Yin Shae
IBM T.J. Watson Research Center
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BIOGRAPHY

Zon-Yin Shae received the B.S. and M.S. degrees in electronic engineering from the National Chiao-Tung University, Taiwan, in 1976 and 1978 respectively, and the Ph.D. degree in electrical engineering from the University of Pennsylvania, Philadelphia, USA, in 1989. From 1980 to 1984, before he pursued his Ph.D. degree, he worked as an engineer in the areas of communication system and microprogramming CPU design for signal processing. Since March 1989, he has been with IBM Watson Research Center, New York. Dr. Shae has published tens of technical papers and holds several U.S. patents. His research interests include neural network, optical signal processing, multimedia signal processing, multimedia communication and networking, video server, multimedia in e-commerce, immersive collaboration, multimedia indexing and searching, and multimedia standards.

T4 – Technical Session IV: Component Technology (II)
Session Organizer

Tsen-Hwang Lin
Prefer Venture
tsen_lin@hotmail.com

BIOGRAPHY

Tsen-Hwang Lin received his M.S. and Ph.D. degrees in Electrical Engineering from University of California, San Diego in 1988 and 1992 respectively, and received the 1992 In 1989 he joined Texas Instruments Central Research Lab, working on the Micromirror spatial light modulator. Dr. Lin was a Branch Manager of Microsystems Technology engaged in various of microelctromechnical systems (MEMS) devices for different applications, such as hard disk drive, Optical switches and RF switches. Dr Lin was awarded 18 patents, published 35 journal papers/presentations and contributed 4 book chapters He was awarded Senior Member of IEEE and Senior Member of Technical Staff of Texas Instruments in 1998. In May 2001, Dr. Lin joined Prefer Venture as a consultant. Dr. Lin also actively participate in professional Societies. He is the Chair, and was the Vice Chair, Administrator and Executive Secretary of Modern Engineering and Technology , 2002, 2000, 1998 and 1996 respectively, Taiwan. He will be the President, CIE/USA-DFW 2002. His name was listed in Marquis Who's Who in Science and Tech., Millennium Ed., Who's Who in the World, 2001.

T4 – Technical Session IV: Component Technology (II)

SOI Circuit Design for High-Performance CMOS Microprocessors

C. T. Chuang
IBM T. J. Watson Research Center, Yorktown Heights, NY 10598
IBM Microprocessor Development, Rochester, MN 55901

ABSTRACT

This presentation reviews the recent advance in SOI circuit design for high-performance CMOS microprocessor applications with particular emphasis on the design issues resulting from the unique SOI device structure. The technology/device requirements and design challenges are highlighted. Unique design aspects for partially-depleted SOI , such as parasitic bipolar effect, hysteretic Vt ariation, temperature dependence, and scaling implications, are addressed. Circuit techniques to improve the noise immunity and performance, and design methodology to handle and contain the hysteretic Vt variation are discussed.

BIOGRAPHY

Dr. C. T. Chuang received the B.S.E.E. from National Taiwan University, Taipei, Taiwan in 1975 and Ph.D. degree in Electrical Engineering from University of California, Berkeley, CA in 1982. He joined IBM T. J. Watson Research Center, Yorktown Heights, NY in 1982, and is currently Manager of High-Performance Circuit Design Group. He has worked on scaled bipolar devices/technology/circuits, BiCMOS logic and memory, and CMOS microprocessor circuit design. He has also been responsible for understanding/evaluating the design issues of SOI technology for high-performance CMOS logic and memory applications. Dr. Chuang is a Fellow of IEEE. He holds 9 U. S. patents and has authored or coauthored over 150 papers.

T4 – Technical Session IV: Component Technology (II)

Voice Portal and Voice ASP/Face Recognition: Technology and Reality

Augustine Tsai, Ph.D
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Bell Labs, Lucent Technologies

ABSTRACT 1

Voice portal service is for customers to use plain old phones to conduct transactions or retrieve information. The goal is to push Web-based services beyond the desktop, to enhance user experience, and to penetrate un-served market. Many companies are taking position as voice portal ASPs (application providers), such as BeVocal and HeyAnita.

In order to extend existed Web applications with voice interface. An international standard VoiceXML markup language has been developed recently and is now receiving broader industrial acceptance. It gives the interactive voice presentation, while the HTML markup language gives the text/graphics presentation. VoiceXML's main goal is to bring the full power of web development and content delivery to voice response applications, and free developers from low-level telephony interface and resource management. VoiceXML enables integration of the voice services with data services using the familiar client-server paradigm.

A VoiceXML –based dialogue manager platform will be presented. This platform allowed the integration of information retrieval (stocks, weathers), telephony, transaction, and messaging services. while providing persistent connections between speech engines and third party servers (database, email, voice mail). The design of the dialogue will be discussed. The dialogue consists of a series of dialogue turns that together form an overall dialogue session. The session is modeled by a collection of dialogue states with allowed transitions between them. The implications for the Enterprise level applications will also be addressed.

ABSTRACT 2

The aftermath of 911 attack has raised the new concerns of airport security. Face recognition technology is being touted as a powerful weapon in the war on terrorism since then. The recent stock soaring of Visionics (NADQ:VSNX) and Viisage (NASQ: VISG) also demonstrate the public interests in this technology. This talk will cover the current technologies and hypes. The 2000 US Army FERET face recognition vendor evaluation will be discussed as well.

BIOGRAPHY

Ph.D, Biomedical Engineering, Rutgers University, 1996
MS, Electrical Engineering, Rutgers University, 1991
MS, Systems Engineering, Case Western Reserve University, 1989

T4 – Technical Session IV: Component Technology (II)

Automation of Business Negotiation: Model and Architecture

Haifei Li
IBM Thomas J. Watson Research Center

ABSTRACT

Business negotiation is an important component of a business process. How to automate business negotiations is an important research issue of huge practical potentials. In this talk, we will consider techniques involved in automating business negotiation processes. A negotiation model is proposed to capture key elements of a business negotiation process. The talk will focus on the decision model, a key element of the negotiation model. The decision model links high-level business negotiation objectives to low-level tactics by defining two mappings. A negotiation policy is a mapping from a negotiation context to negotiation goal values. A negotiation strategy is a mapping from negotiation goal values to decision-action rules. A negotiation context is a Boolean expression that can be evaluated to true or false based on the relevant business negotiation information. Negotiation goal values are business objectives to be achieved. Decision-action rules are low-level tactic rules to drive the execution of an automated negotiation system. A system architecture based on the model is proposed and a prototype has been implemented.

BIOGRAPHY

Haifei Li joined IBM Thomas J. Watson Research Center on September 2001. His research interests are business negotiation, business process automation, B2B integration, and rule-based systems. He got a bachelor's degree in computer science from Xi'an Jiaotong University in 1990 and a master's degree in electrical and computer engineering from the University of Florida in 1998. He entered the doctoral program in computer science at the University of Florida in 1998. He has finished the Ph.D. defense and will get a Ph.D. degree on December 2001.

B4 - Business Session IV: Where Is the Money Going? Investment Trends and Strategies after the DotCom Meltdown and 911 Terror Attack

Session Chairperson

Kun Deng, CFA
Lazard Freres & Co, LLC

BIOGRAPHY

Mr. Deng is Director and Senior Portfolio Manager at Lazard Freres & Co, LLC, a global investment bank. Among the funds he manages are World Trust Fund, a closed-end investment company listed on the London Stock Exchange, Lazard Emerging World Fund, a Dublin-registered mutual fund, and Questor Global Opportunities Fund, an Australian mutual fund. Mr. Deng studied at, and holds degrees from, Beijing University, Columbia University and New York University. He is Chartered Financial Analyst, volunteers on the International Committee of the New York Society of Security Analysts, and serves on the International Advisory Board of the World Policy Institute. Mr. Deng was frequently quoted by The Wall Street Journal, The New York Times, Los Angeles Times, Barron's, etc.

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Session Organizer

Daniel Lou
New York Life Insurance Company
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BIOGRAPHY

Daniel Lou, co-founder and president of Chinese Investors Association, an not-for-profit group focused on investor's education and networking. Currently he's also a market management member for New York Life's Chinese market division.

Daniel Lou graduated from Columbia University Graduate School of Journalism with a Master's of Science degree in 1994. He has since worked as a reporter for World Journal, the largest Chinese language daily newspaper in the United States. He was born, grew up and educated in China before he came to the United States in 1993.

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Sally Mak
Corporate Vice President
New York Life Insurance Company

BIOGRAPHY

Sally Mak, a corporate vice president with New York Life Insurance Company, is in charge of the Company's Chinese Marketing Division. In this role, she has spearheaded a variety of innovative marketing and recruiting efforts, as well as has successfully led this market to continuous double-digit sales growth. Previously, Sally was associated with New York International, Inc., the international arm of New York Life, where she focused on new business development efforts, including the pursuit of a business license in China.

Before joining New York Life in 1994, Sally worked in New York as a media director and account executive with a large advertising agency for Asian-Americans. She also worked with Radio Television Hong King as a radio program producer in Hong Kong.

Sally was born in Guangzhou and grew up in Hong Kong. She earned her bachelor's degree with honors in English from Chinese University of Hong King and a master's degree in Communications from Columbia University in New York City. Sally serves on the board of the Business Advisory Council of the Organization of Chinese Americans and the China Insurance Education Fund. As a seasoned professional in the insurance industry and an effective speaker in Mandarin, Cantonese and English, Sally frequently gives presentations at various domestic and international conferences.

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Kun Deng, CFA
Lazard Freres & Co, LLC

BIOGRAPHY

Mr. Deng is Director and Senior Portfolio Manager at Lazard Freres & Co, LLC, a global investment bank. Among the funds he manages are World Trust Fund, a closed-end investment company listed on the London Stock Exchange, Lazard Emerging World Fund, a Dublin-registered mutual fund, and Questor Global Opportunities Fund, an Australian mutual fund. Mr. Deng studied at, and holds degrees from, Beijing University, Columbia University and New York University. He is Chartered Financial Analyst, volunteers on the International Committee of the New York Society of Security Analysts, and serves on the International Advisory Board of the World Policy Institute. Mr. Deng was frequently quoted by The Wall Street Journal, The New York Times, Los Angeles Times, Barron's, etc.

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Jonathan T. Lin
VP/CMT
Salomon Smith Barney

BIOGRAPHY

With Salomon Smith Barney since 1994, Jonathan T. Lin is a vice president at the firm's Technical Research department, the *Institutional Investor* poll's top technical research team for the past eight years. In his capacity as a senior research analyst, Jonathan contributes to the department's weekly research reports. He has been cited by the printed press, such as *BusinessWeek* and *USA Today*, and interviewed on several financial news programs, including "*Your World with Neil Cavuto*." Jonathan is also an instructor at the New York Institute of Finance.

Prior to joining Salomon Smith Barney, Jonathan spent six years with Merrill Lynch and one year with Price Waterhouse. He received his B.E. degree in electrical engineering and computer science from Stevens Institute of Technology, and his M.B.A. degree from Lubin Graduate School of Business, Pace University. Jonathan is a Chartered Market Technician, a registered Supervisory Analyst, and holds membership at the Market Technicians Association and New York Society of Security Analysts.

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Mark Tang
Biotech Analyst and Senior Financial Advisor
Morgan Stanley

ABSTRACT

Mark Tang will present Morgan Stanley Chief Investment Officer, Joseph McAlinden's research, which provides current economic analysis and his take on prevailing market conditions. It also offers his views on various investment strategies, as well as the returns investors might expect over the next decade and suggestions on achieving financial goals In the current environment.

BIOGRAPHY

Dr. Tang has a broad range of Wall Street investment experience, having spent over nine years engaged in capital market activities including research, technology merchant banking/venture capital, and private asset and investment management. His past private asset management experiences include top tier firms such as Morgan Stanley, and UBS PaineWebber Inc from 1998-2001. He was a Biotechnology Analyst, founding editor, and publisher of BMTS (Bio/Medical Technology Stock) Newsletter, a boutique biotech research firm, from 1994-1998. The Company was acquired by a Wall Street investment in 1996. Mr. Tang worked as a Vice President of merchant Banking/Venture Capital, at a boutique technology investment banking corp., in Wall Street from 1996-1998. From 1998-2000, he was also a co-founder, CFO and a director of Aegisoft Corp., a digital right management (DRM) technology company, recently acquired by RealNetworks Inc. Mr. Tang is a director of World Technology Investment Group Corp, a venture capital consulting company specializing in advising high tech and biotech start-ups. Dr. Tang is a frequent speaker at local, national and international conferences, and is an author of a number of financial articles and currently working on a *handbook on investing in biotech*, which expecting to be published in 2002.

Dr. Tang holds an MBA in Finance from New York University and a Ph.D. in Biochemistry and Molecular Biology from University of California. Mr. Tang is included in the 2002 edition of **Who's Who in America**. He is a resident of New Jersey.

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George Koo
President and CEO
Digital Systems Group
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BIOGRAPHY

George is a former investment banker, equity analyst, portfolio manager and entrepreneur. He has served in a variety of executive positions such as Chairman, Chief Executive Officer, President and Director for several technology companies in wireless and technology services. His experience has been focused on turnaround companies in industries such as: wireless communications, technology, supply chain management, hardware, retailing, distribution, food services, insurance, banking, etc. George is a Certified Public Accountant and holds a BS in Accounting and an MBA in Finance, both from St. John's University and an Advanced Professional Certificate in International Finance & Business from New York Stern Graduate School of Business. George is also a CFA Charterholder.