



Internet 0: Past, Present, and Future

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SPEAKER BIOGRAPHIES

Bob Briscoe

Bob Briscoe joined BT in 1980 and now directs the research programme of BT's Networks Research Centre. In the late-1980s he managed the transition to IP of many of BT's R&D networks and systems. In the mid-1990s he represented BT on the HTTP working group of the IETF and in the ANSA distributed systems research consortium, which led to the creation of the OMG and CORBA. In 2000 he initiated and was technical director of the Market Managed Multi-service Internet (M3I) consortium, a successful European collaborative project investigating the feasibility and user acceptability of controlling Internet quality on fast time-scales through pricing. His published research, standards contributions and patent filings are in the fields of loosely coupled distributed systems, scalable network charging and security solutions (esp. multicast), managing fixed and wireless network loading using pricing and on the structure of communications markets. He is also studying part-time for a PhD at University College London.

Mung Chiang

Mung Chiang is an Assistant Professor of Electrical Engineering at Princeton University. He received the B.S. (Honors) in Electrical Engineering and Mathematics, M.S. and Ph.D. degrees in Electrical Engineering from Stanford University, and was a technical consultant at three telecom startup companies and a Principal Member of Technical Staff in Network Systems Engineering at SBC Communications.

Professor Chiang conducts research in the areas of nonlinear optimization of communication systems, architectures and algorithms for broadband access networks, and information theoretic limits of data transmission and compression. He has been awarded as a Hertz Foundation Fellow, Stanford Graduate Fellow, NSF Graduate Fellow, and received Stanford University School of Engineering Terman Award and SBC Communications New Technology Introduction Contribution Award. Professor Chiang is the Lead Guest Editor of the Special Issue of IEEE Journal of Selected Areas in Communications on "Nonlinear Optimization of Communication Systems", a Guest Editor of the Joint Special Issue of IEEE Transactions on Information Theory and IEEE/ACM Transactions on Networking on "Networking and Information Theory", and the Program Co-Chair of the 38th Conference on Information Sciences and Systems.

Danny Cohen

Danny is a distinguished engineer at SUN, since 2001. He received his PhD from Ivan Sutherland at Harvard University. He pioneered realtime applications of packet switching networks, by developing applications of the ARPAnet first (and the Internet later) for interactive visual flight simulation, interactive packet-voice which lead to Voice-over-IP (VoIP), interactive packet-video, interactive simulations, and more.

Danny also started the MOSIS system for VLSI fabrication, and one of the earliest e-commerce systems. Danny's project ATOMIC at ISI was the forerunner of Myrinet, a very popular System Area Networks, used in more than the third of the TOP-500 clusters. Danny is a bona fide member of the Flat Earth Society.

Neil Gershenfeld

Prof. Neil Gershenfeld is the Director of MIT's Center for Bits and Atoms. His unique laboratory investigates the relationship between the content of information and its physical representation, from molecular quantum computers to virtuosic musical instruments. Technology from his lab has been seen and used in settings including New York's Museum of Modern Art and rural Indian villages, the White House/Smithsonian Millennium celebration and automobile safety systems, Las Vegas shows and Sami reindeer herds. He is the author of numerous technical publications, patents, and books including "When Things Start To Think," "The Nature of Mathematical Modeling," and "The Physics of Information Technology," and has been featured in media such as The New York Times, The Economist, CNN, and the McNeil/Lehrer News Hour. Dr. Gershenfeld has a BA in Physics with High Honors from Swarthmore College, a Ph.D. from Cornell University, was a Junior Fellow of the Harvard University Society of Fellows, and a member of the research staff at Bell Labs.

Robert Kahn

Robert E. Kahn is Chairman, CEO and President of the Corporation for National Research Initiatives (CNRI), which he founded in 1986 after a thirteen year term at the U.S. Defense Advanced Research Projects Agency (DARPA). CNRI was created as a not-for-profit organization to provide leadership and funding for research and development of the National Information Infrastructure. After receiving a B.E.E. from the City College of New York in 1960, Dr. Kahn earned M.A. and Ph.D. degrees from Princeton University in 1962 and 1964 respectively. He worked on the Technical Staff at Bell Laboratories and then became an Assistant Professor of Electrical Engineering at MIT. He took a leave of absence from MIT to join Bolt Beranek and Newman, where he was responsible for the system design of the Arpanet, the first packet-switched network. In 1972 he moved to DARPA and subsequently became Director of DARPA's Information Processing Techniques Office (IPTO). While Director of IPTO he initiated the United States government's billion dollar Strategic Computing Program, the largest computer research and development program ever undertaken by the federal government.

Dr. Kahn conceived the idea of open-architecture networking. He is a co-inventor of the TCP/IP protocols and was responsible for originating DARPA's Internet Program. CNRI provides the Secretariat for the Internet Engineering Task Force (IETF).

Dr. Kahn also coined the term National Information Infrastructure (NII) in the mid 1980s which later became more widely known as the Information Super Highway.

In his recent work, Dr. Kahn has been developing the concept of a digital object architecture as a key middleware component of the NII. This notion is providing a framework for interoperability of heterogeneous information systems and is being used in several applications such as the Digital Object Identifier (DOI). He is a co-inventor of Knowbot programs, mobile software agents in the network environment.

Dr. Kahn is a member of the National Academy of Engineering and a former member of its Computer Science and Technology Board, a Fellow of the IEEE, a Fellow of AAAI, a fellow of ACM. He is a former member of the President's Information Technology Advisory Committee, a former member of the Board of Regents of the National Library of Medicine and the President's Advisory Council on the National Information Infrastructure. He is a recipient of the AFIPS Harry Goode Memorial Award, the Marconi Award, the ACM SIGCOMM Award, the President's Award from ACM, the IEEE Koji Kobayashi Computer and Communications Award, the IEEE Alexander Graham Bell Medal, the IEEE Third Millennium Medal, the ACM Software Systems Award, the Computerworld/Smithsonian Award, the ASIS Special Award and the Public Service Award from the Computing Research Board. He has twice received the Secretary of Defense Civilian Service Award. He is a recipient of the 1997 National Medal of Technology, the 2001 Charles Stark Draper Prize from the National Academy of Engineering, and the 2002 Prince of Asturias Award. He has received honorary degrees from Princeton University, University of Pavia, ETH Zurich, University of Maryland, George Mason University, and the University of Central Florida.

Raffi Krikorian

Raffi Krikorian is a British Telecom fellow in the Physics and Media Group of the MIT Center for Bits and Atoms/MIT Media Laboratory where he broadly studies "organic" systems of extreme scales. Previously, he has helped develop decentralized systems for mobile and autonomous agents as well as distributed computational engines for massively parallel computation. Krikorian currently holds a S.B. and a M.Eng. in EE/CS as well as a S.M. in Media Arts in Sciences from MIT.

Leonard Kleinrock

Dr. Leonard Kleinrock created the basic principles of packet switching, the technology underpinning the Internet, while a graduate student at MIT. This was a decade before the birth of the Internet which occurred when his host computer at UCLA became the first node of the Internet in September 1969. He wrote the first paper and published the first book on the subject; he also directed the transmission of the first message to pass over the Internet. He was listed by the Los Angeles Times in 1999 as among the "50 People Who Most Influenced Business This Century".

Dr. Kleinrock received his Ph.D. from MIT in 1963 and has served as a professor of computer science at the University of California, Los Angeles since then, serving as chairman of the department from 1991-1995. He received his BEE degree from CCNY in 1957 (also an Honorary Doctor of Science from CCNY in 1997, and an Honorary Doctor of Science from the University of Massachusetts, Amherst in 2000). He has published more than 240 papers and authored six books on a wide array of subjects including queueing theory, packet switching networks, packet radio networks, local area networks, broadband networks, gigabit networks and nomadic computing.

Dr. Kleinrock is a member of the American Academy of Arts and Sciences, a member of the National Academy of Engineering, an IEEE fellow, an ACM fellow and a

founding member of the Computer Science and Telecommunications Board of the National Research Council. Among his many honors, he is the recipient of the CCNY Townsend Harris Medal, the CCNY Electrical Engineering Award, the Marconi Award, the L.M. Ericsson Prize, the NAE Charles Stark Draper Prize, the Okawa Prize, the IEEE Internet Millennium Award, the UCLA Outstanding Teacher Award, the Lanchester Prize, the ACM SIGCOMM Award, the Sigma Xi Monie Ferst Award, the INFORMS Presidents Award, and the IEEE Harry Goode Award.

Steven. H. Low

Steven. H. Low received his B.S. from Cornell University, and MS and PhD from Berkeley, in EE. He was with AT&T Bell Laboratories, Murray Hill, from 1992 to 1996 and with the University of Melbourne, Australia, from 1996 to 2000. He is now an Associate Professor at Caltech, where he leads the FAST Project, and a Senior Fellow of the University of Melbourne. He was a co-recipient of the IEEE William R. Bennett Prize Paper Award in 1997 and the 1996 R&D 100 Award. He is on the editorial boards of IEEE/ACM Transactions on Networking, Computer Networks Journal, and is a Senior Editor of IEEE Journal on Selected Areas in Communications. His research interests are in the control and optimization of networks and protocols. His home is netlab.caltech.edu.

David Reed

MIT Media Lab Adjunct Professor David P. Reed's research focuses on designing systems that manage, communicate, and manipulate information shared among people. He is best known for co-developing the Internet design principle known as the "end-to-end argument" (with MIT Professors J.H. Saltzer and David D. Clark), and "Reed's Law," which describes the economics of group formation in networks.

Reed is instrumental in developing the Lab's Viral Communications program, exploring the adaptive, scalable, and evolving wireless network architectures that have fascinated him for years. He has consulted widely to the computer industry, and has served as senior research scientist at Interval Research Corporation and as vice president and chief scientist for Lotus Development Corporation. Previously he was vice president of research and development and chief scientist at Software Arts.

Reed was a faculty member in MIT's Department of Electrical Engineering and Computer Science (EECS) from 1978 to 1983, working in the Laboratory for Computer Science (LCS). He also earned his BS, MS, EE, and PhD degrees in EECS while conducting research at LCS and its predecessor, Project MAC.

Jean-Jacques Quisquater

Jean-Jacques Quisquater is professor of cryptography and multimedia security at the Department of Electrical Engineering, University of Louvain, Louvain-la-Neuve, Belgium, where he is the leader of the so-called UCL Crypto Group (20 people including 4 postdocs)). He manages many research projects related to smart cards, to secure protocols for communications, digital signatures, payTV, protection of copyrights and security tools for electronic commerce. He is a director of the International Association for Cryptologic Research.

His research group includes people from (applied) mathematics, computer science, telecommunications and microelectronics: this diversity is the main strong point of the group able to study many views of the same problem. He is the main designer for the coprocessors for powerful smart cards from Philips. He holds 17 patents in the field of smart cards.

He was involved in the process of standardization of

-cryptographic tools:

- digital timestamping (ISO and IETF):

- digital signatures (ISO): he is the co-inventor of the first practical schemes proposed by ISO, based on factorization and RSA.

He is co-inventor of a very well used cryptographic scheme, the GQ scheme, used by about 100 millions clients by Novell (NDS, Netware). Long time ago he constructed a large part of the UUCP network in Belgium and was also involved in the international setting EUnet, UUnet with Rick Adams).

Barry Wessler

Dr. Wessler is an independent consultant in computers and communications. He was CEO of Plexsys International, a cellular telephone infrastructure manufacturer. Prior to joining Plexsys, he was founder and President of NetExpress, Inc., a market leader in international facsimile network products and services. In 1973, Dr. Wessler was a cofounder of Telenet Communications, a pioneering packet switch service company (now Sprint Data). In the late 1960s, he was a research program manager in the Advanced Research Projects Agency where he participated in the design and implementation of the ARPANet (the forerunner of today's Internet). Dr. Wessler serves on the Board of Directors for a number of high technology companies including: GEO-CENTERS, Online Resources (ORCC), LinkSpot and Akira Technologies. Dr. Wessler received his BSEE and MSEE from MIT and his Ph.D. in Computer Science from the University of Utah.