

*20<sup>th</sup> Annual E. Leonard Arnoff Memorial Lecture  
on the Practice of Management Science*

*“A Brief History of the Internet and  
its Dynamic Future”*

*Leonard Kleinrock  
University of California Los Angeles*

*7:30 P.M., Thursday, May 5, 2011  
Fealy Auditorium, Room 112, UC College of Business*

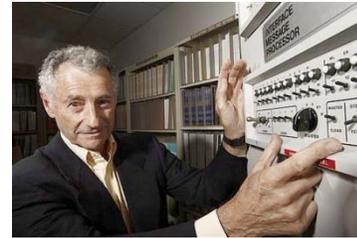
In this presentation we discuss the history and future of the Internet. The early work on packet switching is traced and then a brief description of the critical events in the growth of the Internet is given. We then present a vision of where the Internet is heading with a focus on the edge where user participation, flexible applications and services, and innovation are appearing.

*Reception at 5:30 PM, 6<sup>th</sup> Floor, College of Business.*

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# Leonard Kleinrock



Professor Leonard Kleinrock is Distinguished Professor of Computer Science at [UCLA](#). Known as a "Father of the Internet", he developed the mathematical theory of packet networks, the technology underpinning the Internet, while a graduate student at [MIT](#). This was in the period 1960-1962, nearly a decade before the birth of the Internet which occurred in his laboratory 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 ever 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". He was also listed as among the 33 most influential living Americans in the December 2006 *Atlantic Monthly*. Kleinrock's work was further recognized when he received the 2007 National Medal of Science, the highest honor for achievement in science bestowed by the President of the United States. This Medal was awarded "*for fundamental contributions to the mathematical theory of modern data networks, for the functional specification of packet switching which is the foundation of the Internet Technology, for mentoring generations of students and for leading the commercialization of technologies that have transformed the world.*"

Leonard Kleinrock received his Ph.D. from [MIT](#) in 1963. He 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 and his MS degree from MIT in 1959. He is also the recipient of a number of Honorary Doctorates across the world. He was the first President and Co-founder of Linkabit Corporation, the co-founder of Nomadix, Inc., and Founder and Chairman of TTI/Vanguard, an advanced technology forum organization. He has published over 250 papers and authored six books on a wide array of subjects, including packet switching networks, packet radio networks, local area networks, broadband networks, gigabit networks, nomadic computing, performance evaluation, and peer-to-peer networks. During his tenure at UCLA, Dr. Kleinrock has supervised the research for 47 Ph.D. students and numerous M.S. students. These former students now form a core group of the world's most advanced networking experts.

Dr. Kleinrock is a member of the [National Academy of Engineering](#), a member of the [American Academy of Arts and Sciences](#), an [IEEE](#) fellow, an [ACM](#) fellow, an [INFORMS](#) fellow, an [IEC](#) fellow a [Guggenheim](#) 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 L.M. Ericsson Prize, the NAE Charles Stark Draper Prize, the Marconi International Fellowship Award, the Okawa Prize, the IEEE Internet Millennium Award, the ORSA Lanchester Prize, the ACM SIGCOMM Award, the NEC Computer and Communications Award, the Sigma Xi Monie A. Ferst Award, the CCNY Townsend Harris Medal, the CCNY Electrical Engineering Award, the UCLA Outstanding Faculty Member Award, the UCLA Distinguished Teaching Award, the UCLA Faculty Research Lecturer, the INFORMS President's Award, the ICC Prize Paper Award, the IEEE Leonard G. Abraham Prize Paper Award, and the IEEE Harry M. Goode Award.