Multimedia Information Networking in the 90's – The Evolving Information Infrastructures

Maurizio DECINA, CEFRIEL/Politecnico di Milano, ITALY

At dawn of the Information Age, the first objective is to provide a Global Information Infrastructure. This term describes the coming world wide interoperability of high speed networks that support a wide range of computer-based personal and professional multimedia applications. The technical foundations of the global infrastructure, the world wide Information Superhighway, are going to emerge from interactions among all players of the voice, computer data, and video information business. The global information business scenario includes a wide range of services and products:

- of the business and entertainment information industry: newspapers, books, movies, television programs, advertising, on-line data services, etc.,
- of the computer industry, both hardware and software products,
- of the consumer electronics industry, both hardware and software products: television sets, CATV set-tops, video game sets, smart phones, wireless sets, etc., and finally
- of the information networking industry, where 3 major players can be identified: Telecommunications, Cable TV and Internet. The underlying technology assumption beyond all elements of the construction of the Infohighway is the staggering spread of digital technologies for processing multimedia signals and data. The presentation focuses on the 3 players in the networking arena, and gives a snapshot on their evolving network protocols, architectures and interactive multimedia services provision during this decade. In particular, the following topics are briefly reviewed:
 - current features and services of Internet, together with the ongoing work to enhance IP [Inter networking Protocol] protocol performance: addressing, routing, real time (voice & video) reservation protocols (ST II [Stream Protocol II], and RSVP [ReSe-rVation Protocol]), security, etc.;

- telecommunication networks evolution towards the provisioning of multimedia transport capabilities (narrowband ISDN [Integrated Services Digital Network], and broadband ATM [Asynchronous Transfer Mode]), and of signaling & control capabilities to support customer mobility, intelligent network services, and personal communications services. Recent developments to offer interactive broadband services, such as Video on Demand, on hybrid fiber-coaxial cable distribution networks.
- CATV networks evolution towards the provisioning of telephony and interactive digital broadband services. Emphasis is given to respective competitive role of these 3 participants of the networking industry during this decade, in the forthcoming process for selecting the technical pillars of the world wide platform needed to enter the Information Age.