

## The 10 Hottest Technologies in Telecom

The May 1996 issue of *Telecommunications*®, the “technology and business monthly for communications professionals,” features on its cover “Hot Technologies, Our Picks for 1996.” One article, “The 10 Hottest Technologies in Telecom,” by Patrick Flanagan, tells us what’s on the horizon and in development. It’s well worth a look by motion picture and television engineers. Like it or not, much of our future is determined through developments in the telecommunications industries. As a side note, the SMPTE Internet World Wide Web site receives over 20,000 requests each month, providing information to both members and nonmembers, our industries, students, and the world at large.

*Telecommunications* magazine’s 10 hottest technologies include:

1. Java Programming Language
2. Voice Over Frame Relay
3. Virtual LANs
4. Cable Modems
5. Gigabit LANs
6. Internet Appliances
7. Personal Satellite Phones
8. The Intranet
9. Automated Network Management
10. Data Mining

This is one “top 10” list. Yours may be different, but SMPTE staff thinks you should look into and be aware of these...

1. Java Programming Language was developed by Sun Microsystems and made available on the Internet to anyone who wanted to download it. Java is used on the World Wide Web and has been included in the Netscape Navigator 2.0 browser package. It provides animation, moving text, and interactive games. (A sample can be seen in the crawling

script on the SMPTE Toronto Section page at <http://www.smpte.org/sections/yyz/yyz.html> when viewed with a Netscape Navigator 2.0 browser.)

2. Voice Over Frame Relay. Telephone companies now offer frame relay data services. New packet assemblers/disassemblers support data compression, voice compression, and protocol conversions. Pulse code modulation is used to convert analog voice signals into 8-bit words with a gross bit rate of 64 kbits/sec. The processed data is packaged into standard frame relay data frames that are transported across the public network. Cost savings as high as 25 to 35% are claimed. The technology is worth a look.

3. Virtual LANs. Network managers can use virtual local area networks (VLANs) to gain flexibility in designing and modifying local area networks (LANs). They can create logical LANs with arbitrarily assigned nodes in defined logical network segments without regard to geographical location.

4. Cable Modems. This technology that offers significant improvements over telephone modems and integrated services digital network (ISDN). Throughputs of 40 Mbits/sec downstream for downloading files and 2.5 Mbits/sec and higher for the other direction provide a competitive edge over telcos for Internet access, especially for World Wide Web and telecommuters who require access to LANs via dial-up connections.

5. Gigabit LANs may have an edge over asynchronous transfer mode (ATM) for high-speed networking to the desktop. IEEE committees are working on Gigabit Ethernet and 1G-AnyLAN. A major advantage is that applications don’t

have to be rewritten, as may be required with ATM switching.

6. Internet Appliances include the \$500 “network computer” for viewing the World Wide Web and Internet telephone voice devices.

7. Personal Satellite Phones, such as the Comsat Planet 1 with Inmarsat satellites, are expected to provide the business traveler with practical voice, fax, paging, and data communications services anywhere, anytime.

8. The Intranet uses World Wide Web technology to facilitate secure internal communications within a firm.

9. Automated Network Management aims toward the goals of a network management system that thinks for itself and is self-healing.

10. Data Mining is a technology to analyze the data warehouses that enterprises are building. These analyses can answer questions about a business that haven’t been asked or discover information that queries and reports can’t reveal. The payoff is new ways of doing business. The rapid emergence of the technology can be seen in survey results showing that 95% of the companies surveyed are planning to build data warehouses.

We hope this article is of interest and causes you to think about telecommunications technologies for your business.

These excerpts have been printed with the permission of the Editor-in-Chief of *Telecommunications*, Tom Valovic. For the full article, please see “The 10 Hottest Technologies in Telecom,” by Patrick Flanagan, *Telecommunications*, 30:29-38, May 1996.

— Carlos V. Girod, Jr., P.E.  
SMPTE Director of Engineering