

SMPTE SEES INCREASED ATTENDANCE AT SAN FRANCISCO CONFERENCE

Society Officials Cite Enhanced Technical Program for the Rise

Almost 450 people came to San Francisco to attend the 1995 SMPTE Advanced Television and Electronic Imaging Conference, where they were treated to two days of informative paper presentations, an all-day pre-conference seminar on communications technology, and various social activities. The conference, held at the Westin St. Francis Hotel, February 9 to 11, 1995, is being touted as one of the most successful SMPTE winter events in recent years.

"This conference was one of the best I've seen," said Conference Vice-President Ed Hobson, Graham-Patten Systems. "It was extremely successful both in terms of the technical presentations and the networking opportunities. I can't praise the San Francisco Section enough for their efforts under the leadership of Glen Pensinger and Rick Le Forge."

"We were very pleased with the number of people who attended and with the favorable comments we received," remarked Local Arrangements Co-Chair Glen Pensinger, San Jose State University. "The mix of papers on compression, networking, and video fundamentals seemed right on target."

Program Co-Chair Peter Symes, Grass Valley Group, agreed. "The mood of the conference indicated that the attendees enjoyed the conference very much. We had great authors who did a wonderful job."

Technical Sessions

Nearly 30 papers were presented on February 10 and 11 as part of four technical sessions: "Transport and Compression," "HDTV," "Video Fundamentals," and "Future Directions." Among the titles were "Video: For Here or To Go? Using Compression and Packetization in Television Production Facilities," "Switching Facilities in MPEG-2: Necessary But Not Sufficient," "The Transport Layer of the Grand Alliance ATV System,"



Charles Poynton addresses the audience at the all-day seminar.

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Charles A. Poynton, Sun Microsystems

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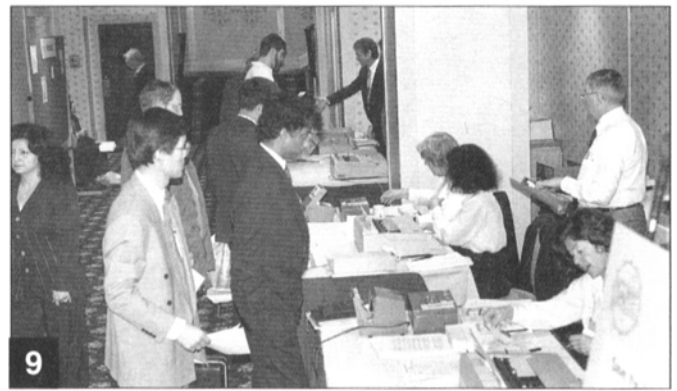
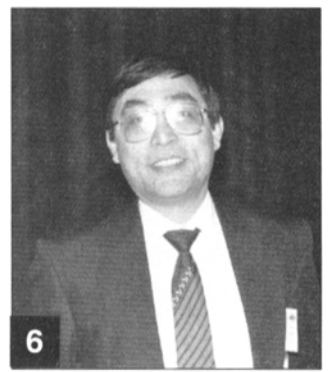
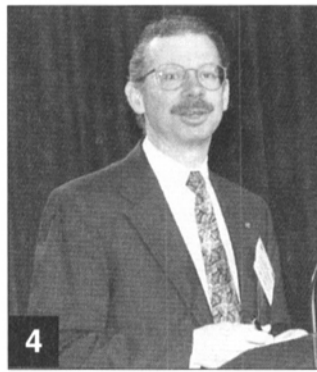
Gary Vann, Napa Valley College

Seminar Arrangements Liaison

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- 1) Nearly 400 people attended the Thursday seminar on communications technology.
- 2) David Bancroft presented the first paper of the technical program.
- 3) Charles Poynton makes a point at the seminar.
- 4) Conference Vice-President Ed Hobson addresses the audience at the beginning of the technical program.
- 5) Program Co-Chair Peter Symes at the opening session.
- 6) Seminar organizer Shenze Chen.
- 7) Al Kovalick presented a paper at the tutorial.
- 8) Registration Chair Charles Hintz.
- 9) More than 100 people registered on-site for the conference.
- 10) Financial Vice-President Charles Jablonski (L) and Ed Hobson.



"Digital to Analog Conversion — Data and Filter Requirements," and "Noncompressed NTSC Digital Video Disk Recorder."

"Enjoyment of the presentations was noticeable throughout the entire three-day period," said Peter Symes. "There was very little in-and-out traffic during the papers sessions."

All-Day Seminar

On February 9, Program Co-Chair Charles Poynton, Sun Microsystems, chaired an all-day tutorial featuring presentations on the various aspects of communications technology. Shenze Chen, Hewlett-Packard Co., was responsible for organizing the seminar, which boasted an attendance of

nearly 400 people.

"The seminar was very successful," said Poynton. "It prompted vigorous discussions among people from the television, computing, and telecom-

munications industries — industries once considered very distinct from one another. This may be an indication of the convergence of technologies we have been discussing."

- 11) Gary Demos shows that "One Size Does *Not* Fit All" at the private press briefing Thursday evening.
- 12) Reporters from some of the top trade publications covered the demonstration.
- 13) Craig Birkmaier elaborates on the demonstration.
- 14) Charles Poynton shows how easy it is to "Surf the 'Net."
- 15) Gary Demos.
- 16) Ed Hobson speaks to reporters.
- 17) Engineering Vice-President Ken Davies comments on the demonstration.
- 18) Craig Birkmaier.



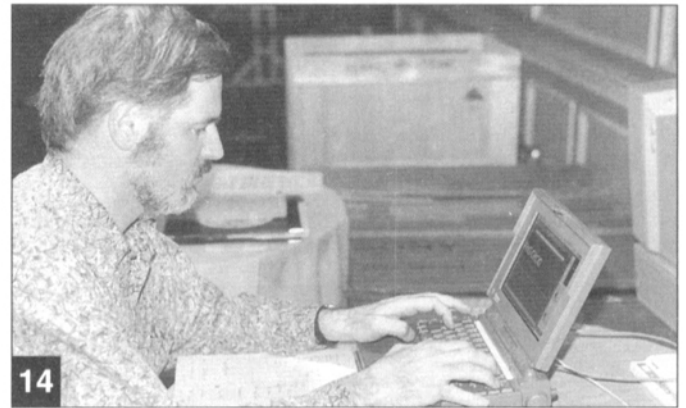
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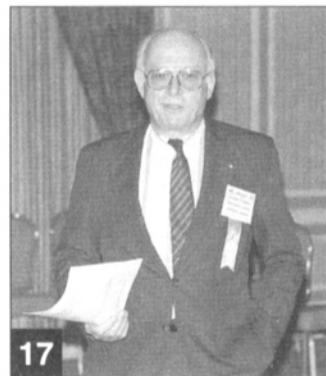
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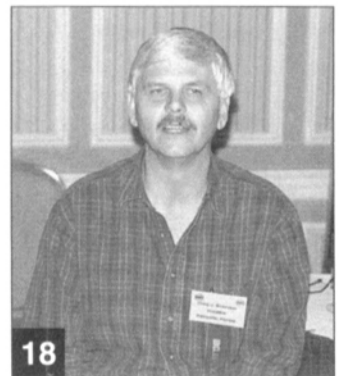
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"The subject matter presented at the tutorial raised many practical and pragmatic issues in terms of the television industry adopting computer technology," agreed Editorial Vice-President Peter Dare, Sony Corp. "While the industry has predicted for years that there will be a merging of these technologies, it now seems that there are practical implementations in many areas covering the convergence.

"The information imparted in the seminar clearly put on the table the issues at hand. Although the current problems were not necessarily solved, the areas where work needs to be done by the engineering communities were clearly identified. I believe as SMPTE ventures into future conferences, these issues will again be raised and further debated, perhaps with more and more solutions being presented as time goes on."

A total of six presentations were made: "Internet Video Support" by Don Hoffman, Sun Microsystems; "Digital Video Transport Over ATM Networks" by Mayer Schwartz, Tektronix, Inc.; "Digital Multiprogram Television System for Cable Distribution" by Richard Prodan, Cable Labs; "Studio Packet Video" by Editorial Vice-President Peter Dare, Sony Electronics, Inc.; "Video Storage Architectures" by Kumar Sreekanthi, Micropolis Corp.; and "The Fundamental Concepts of Media Servers" by Al Kovalick, Hewlett-Packard Co. A question-and-answer period concluded the session.

Demonstration

"One Size Does Not Fit All: Scalability, Compression, and Other Choices in Digital Imaging for the Information Age," a series of real-time demonstrations setting out some of the difficult choices for future image systems and their consequences, was featured in the Westin St. Francis Hotel's Georgian Room throughout the technical program. This event, presented by Gary Demos, DemoGraFX, and Craig J. Birkmaier, PCUBED, was designed to cover a broad range of spatial and temporal parameter values and show how the choices affect convertibility and picture quality. Eighteen reporters from the country's most popular trade journals were treated to a preview of the demonstrations at a private viewing on Thursday, February 9.

Internet Demo

The Thursday evening press event



- 19) Pacific Bell sponsored the Welcoming Reception, which featured a demonstration on "Cinema of the Future."
- 20) Reception guests were engrossed by "Cinema of the Future," sponsored by Pacific Bell.
- 21) Executive Vice-President David George makes a few remarks at the reception.
- 22) Pacific Bell's Larry Kunke.
- 23) Peter Fannon of the Advanced TV Test Center.



24) David George (L) after the Get-Together Luncheon with guest speaker Philip Dodds.
 25) Philip Dodds with reporters at the post-luncheon press conference.
 26) Almost 20 popular industry publications provided complimentary copies of their magazines to conference attendees.
 27) Partners make plans to enjoy San Francisco.
 28) SMPTE members Frank Haney and Joseph Flaherty enjoy the conference.
 29) Motion-Picture Engineering Director Rami Mina with Secretary/Treasurer Richard Thomas.

was also the first occasion for a demonstration of the Internet given by Charles Poynton. Poynton, who offered the demo on the spur of the moment, gave it again on a number of times throughout the conference, with as many as 35 interested onlookers hovering around his computer at once. The success of this unexpected event spurred the program planners for the 137th Technical Conference and World Media Expo to include a professional seminar focusing on the Internet as part of the technical program in New Orleans this coming September.

Get-Together Luncheon

Philip Dodds, executive director of the Interactive Multimedia Association (IMA), was the guest speaker at the Get-Together Luncheon, held on Friday, February 10. In an illustrated presentation entitled, "How to Add the 'I' in Interactive Video: If It Was Easy, Everyone Would Be Doing It," Dodds addressed three facets of interactive media: the real meaning of interactivity, the conversion from analog to digital media streams, and the so-called convergence of industries and technologies.

Press Conference

Following the luncheon, Dodds addressed representatives from ten trade journals, as well as several local San Francisco newspapers, at a press conference in the hotel's Presidential Suite. He held their attention for over an hour, providing information and fielding questions on video interactivity. Dodds was joined by a number of SMPTE Board members, including Linda Young, who briefed the reporters on "Pixels, Pictures, and Perception: The Differences and Similarities



SMPTE Board of Editors Chair LeRoy DeMarsh.

between Computer Imagery, Film, and Video," the joint SMPTE/NAB seminar planned for Saturday, April 8, 1995, preceding the NAB's 73rd Annual Convention in Las Vegas, Nev.

Welcoming Reception

Pacific Bell hosted a Welcoming Reception on Friday evening, February 10. Included in this event was a demonstration entitled "Cinema of the Future," which described the

transmission of high-definition television (HDTV) over fiber-optic ATM/SONET telephone networks.

"The high-definition video demonstration was spectacular," said Ed Hobson. "The features definitely showed the potential for what lies ahead for us."

Sponsors

The SMPTE would like to thank the following sponsors whose generosity helped contribute to the resounding success of the 1995 Advanced Television and Electronic Imaging Conference: Abekas Video Systems, ABM Security Services, Ampex Recording Media Group, Barco, BTS, Dan Dugan Sound Designs, Dolby Labs, Eastman Kodak Co., Fujinon, Grass Valley Group, Merlin Engineering, Pacific Bell, Panasonic Broadcast Systems, Silicon Graphics, Snell & Wilcox, Sony Electronics, Tektronix, and Vinten.

Information Booths

Both the International Broadcasting Convention (IBC) and the International Television Symposium (Mon-

treux) were on hand to provide information to members interested in either of these events.

Magazine Displays

In addition to free copies of the *Technical Proceedings* and the *SMPTE Journal*, complimentary copies of a number of trade publications were made available to conference attendees. The SMPTE would like to thank the following magazines for their support: *Advanced Imaging*, *Broadcasting & Cable*, *Broadcast Engineering*, *BT Broadcast + Technology*, *Computer Video*, *Film & Video*, *In-Motion*, *In-Sync*, *Mac World*, *Me!dea Magazine*, *Post*, *Screen Magazine*, *Television Broadcast*, *TV Technology*, *Video Age*, *Videomaker*, and *Videography*.

Plan for Next Year!

Mark your calendar! The 1996 SMPTE Advanced Television and Electronic Imaging Conference will be held at the Sheraton Seattle Hotel and Towers, Seattle, Wash., February 2-3, 1996.

— Aileen Moroney
Photography by Jeffrey Friedman

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How to Add the "I" in Interactive Multimedia: If It Was Easy, Everyone Would Be Doing It!

Keynote Address — Advanced Television and Electronic Imaging Conference
San Francisco, Calif., February 9 to 11, 1995

By Philip V. W. Dodds

Good afternoon ladies and gentlemen. It is a pleasure and an honor to have been asked here today. Through my discussion with Stan Baron and others over the years, I have come to believe that the Interactive Multimedia Association and the Society of Motion Picture and Television Engineers have common genetic material and common destinies. It's great to finally start exploring some of that commonality.

Text of speech delivered at the Get-Together Luncheon on February 10, 1995, during the 1995 SMPTE Advanced Television and Electronic Imaging Conference in San Francisco, Calif. Philip V. W. Dodds is the Executive Director of the Interactive Multimedia Association, Annapolis, MD 21401-1933.



Three Topics

Today I am going to address three facets of interactive media: the "real"

meaning of interactivity, the conversion from analog to digital media streams, and the so-called convergence of industries and technologies. These three elements, I believe, are the basis for all of the excitement, the hype, and the furious boiling surrounding new media technologies.

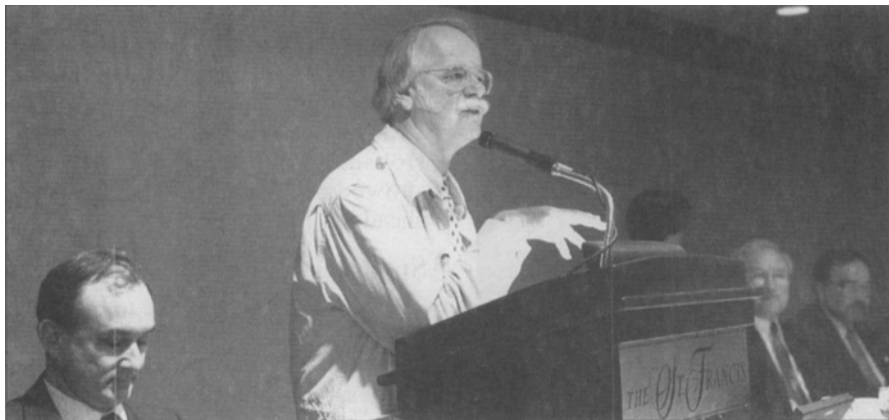
What is interactive multimedia? This is a question we get everyday. Those who contact us know it's really cool and that they want some — several if possible. Big ones too. Today you can go to the store and buy it. It's on the shelf there. And real soon now it will come through television sets, and all the big companies (particularly computer companies) are building billion-dollar empires that will stamp it out in volume. Right?

The reality is that interactive multimedia is not well understood as an art form. It is a very complex fusion of personal computing and multimedia data types. Certainly the most coherent form of the art form today is CD-ROM, and that form is barely able to fulfill the promise and expectations for the true potential of the medium. Interactivity is not well understood; it is not a defined medium. It is, in fact, control over media streams. As an art form, interactivity is poorly understood and not well exploited by the artistic community. This is because the degree of interactivity and the artistic range of capabilities vary considerably from system to system. The creative community is shooting at a moving target, never knowing what is really possible. There are reasons for this that pose specific challenges to the technical community that I want to discuss today.

The IMA started in the mid-1980s as the Interactive Video Industry Association. Back then, in the multimedia dark ages, the term multimedia had not, thankfully, yet been invented. Interactive video systems consisted of a videodisc player connected to a computer with the video and graphics combined using overlay cards. These systems worked very well indeed and with very high quality. Today, I know of no commercial delivery system (and certainly no CD-based system) that has the quality of video and the degree of control that those now-antiquated videodisc systems have.

The reason for this is several-fold. First, without realizing it, the designers of such systems (of which I was one in those days) unwittingly landed on an architecture that is key to the success of interactive multimedia. That is, the system was designed to separate control from media streams. In those systems, the video was relatively high-quality NTSC. The video was combined with computer graphics and then presented directly to the video monitor.

None of the video or its audio ever got near the CPU, and it was never required to navigate the system or data bases and never had to reside in any memory or had to be pulled through a graphics system knot-hole. The player was capable of fast searches to single still frames, interleaved frames, variable frame speeds, and normal play, independent of the CPU capability.



Local Arrangements Co-Chair Glen Pensinger at the Get-Together Luncheon.



David George (second from left) introduces guest speaker Philip Dodds (far left) while Ed Hobson and Sections Vice-President John Carlson (far right) look on.

Try that on your Pentium today!

The reason this worked so well is that the computer exerted only control over the media streams but did not process them directly. This, I assert, is the essence of interactivity. With a high degree of control over the medium, the artistic community rushed to embrace the capabilities of IVD systems and created some stunning and exciting examples for what is still destined to become a new art form and new industry. Unfortunately, we have stepped backwards in the process of creating this new art form in the past few years.

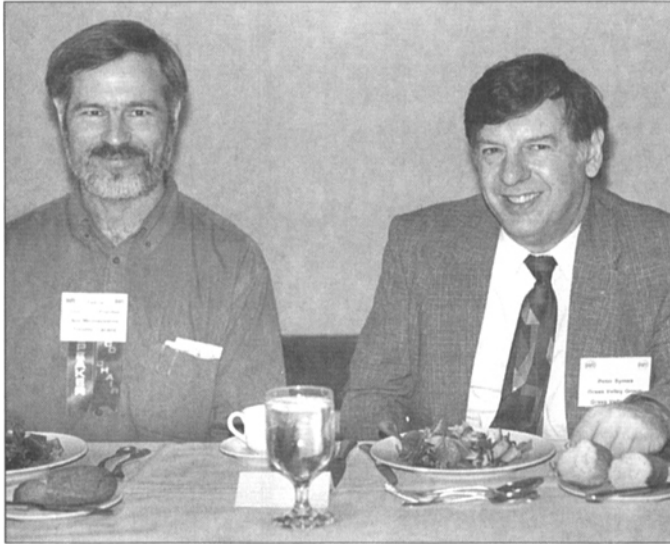
Analog to Digital Conversion

As you know, the computer world has declared the videodisc to be dead. This is because "analog" is a dirty word. Analog is a scourge upon the earth that must be eliminated, they say. If you can't compute it, it is inherently bad. This mentality has bled throughout the consumer electronics industry, fueled by the success of

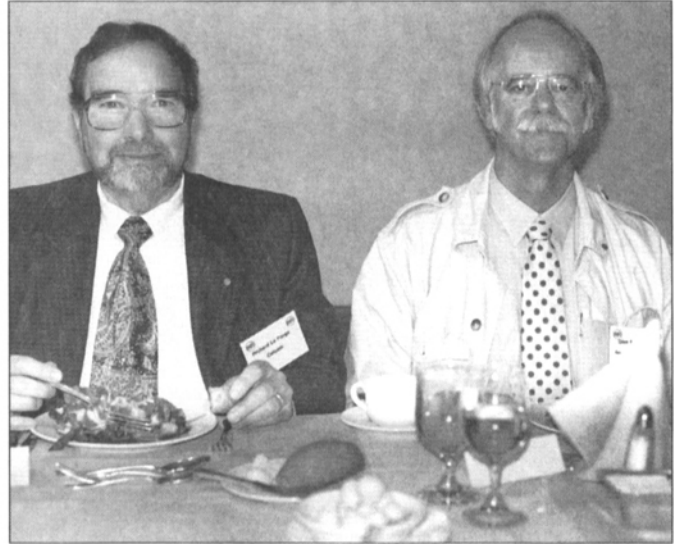
audio compact discs. Digital has been equated with high quality, and analog with scratchy, noisy, and short-lived storage media. So, like it or not, we all have begun the wholesale shift to computer-intensive, CPU cycle-sucking digital multimedia.

Eventually higher quality will spring from digital media, but along the way, the interactive part has been lost. In blending the media streams with the computer, the control elements have been mixed together with the data, creating a nightmarish event where the limitations — that is, those things you cannot do with multimedia — now exceed what you really would like to do artistically.

It used to be that a media definition defined the player device; now, the reverse is true. The player device (such as a multimedia PC) defines the media stream. How many multimedia CDs have you tried that don't work as advertised or at all? Also, the quality of video, images, and sound are now gated by what a particular player



Charles Poynton and Peter Symes enjoy their lunch.



Local Arrangements Co-Chairs Rick LeForge (L) and Glen Pensinger.



John Carlson (L) and Richard Thomas.



Ken Davies (L) with SMPTE Past-President Irwin Young.



SMPTE Executive Director Lynette Robinson speaking with Charles Jablonski.



David George (L) and Philip Dodds.



The Get-Together Luncheon was held Friday afternoon in the California Ballroom.

device can render. On a PC, it's going to be something like 15 frames/sec, quarter-screen with noisy audio for consumer titles. And let's face it, Windows 3.1 is not exactly an optimum video delivery environment. It's not a lot better in the game space either.

I am reminded of Apple's introduction of QuickTime 2.0 at NAB Multimedia World last year. In most respects Apple is ahead of the rest of the computer industry in providing quality multimedia support, but I was still amused by the reception at that conference. They announced: "We can do full-screen video, and we can do 30 frames/sec, and the sound almost synchronizes with the video!" Needless to say, the broadcast community was still waiting for the exciting new news at the end of the presentation.

Convergence?

The developments in the computer industry of multimedia capabilities has created a firestorm of speculation about how these technologies might unite previously isolated industries of media distribution. Once digital, these industry barriers ought to fall, creating a tidy and unified media universe. Not!

It has been true and continues to be true that one size does not fit all. For a host of reasons quality levels will vary according to the expectations of different consumer markets and their distri-

bution systems. Entertainment markets will always strive for high quality and low cost; business will strive for connectivity, productivity, and communications, and will sacrifice media quality to meet those objectives. For example, what consumers really want is the Enterprise holodeck for \$4.99 per experience, whereas we will all continue to accept noisy cellular phone service for which our company will pay a fortune. Often the end-user multimedia expectations across these markets are diametrically opposed to one another.

SMPTTE knows better than any organization that there are many media definitions that serve consumers and the artistic community. Seventy-millimeter film is different from 35mm, which is different from broadcast-quality video, etc. Each variant of motion imaging has qualities, trade-offs, and advantages that are routinely exploited by the artists and engineers in the arts and broadcast. MPEG-2 profiles, though digital, already have analogous quality levels tailored to meet the expected diversity of appliances and distribution systems.

But, in moving to digital, we face the challenge of how not to go backwards in capability. These new media streams don't yet translate smoothly (or in some cases at all) from one format to another. Control is sometimes extremely limited. For those contemplating the new interactive age, this is

worrisome. Right now I am not convinced that MPEG-2, or any of the higher-quality digital video formats for that matter, will be able to do what I can do with the old videodisc systems. That's moving backwards, I fear.

Conclusion

I believe the key to interactivity is to provide a high degree of control over media streams. Once armed with such control, the artistic community will be unleashed and the hype will transform into reality. Toward this end, the separation of control and media is crucial.

The inevitable conversion to all-digital media raises two issues: interoperability (or transcoding) among the various streams, and the proper matching of quality to purpose.

Convergence, to the degree it can really occur, will depend on the ability to exert control over multiple media stream types and to interleave them together for presentation through a variety of distribution systems. When I get my HDTV, I'm still going to want to see old videos, CD-ROM titles, broadcast news, and movies.

Finally, as Stan pointed out to me earlier this week, SMPTTE evolved from film to encompass television with the common thread of motion imaging technology. Is it time for SMPTIME (Society of Motion Picture, Television, and Interactive Multimedia Engineers)?