

The switching centers in Zurich, Geneva, and Lugano are currently equipped with routing switchers in composite form. As a transitional solution, hybrid switching systems are being used (the combination of an analogous composite crossbar and a digital component crossbar).

Adaptation of the Production Equipment to the 16:9 Picture Aspect Ratio

The most important factor in the production of the new picture format is the camera, which has to be equipped with a 16:9 CCD chip. All cameras obtained within the last two years can be adapted to the new 16:9 format — some are even able to switch between the 16:9 and 4:3 formats. The new picture aspect ratio has to be taken into account in all production equipment having a direct influence on the geometry of the picture,

i.e., with electronic graphic systems as well as effect and video mixers. In most of the equipment the adaptation occurs through a software update.

On-Air Studio

The on-air studios all use PAL technology. The first on-air studio totally using component techniques is scheduled to become available in autumn 1995. Therefore, for the introduction of PALplus, a solution had to be found that was somehow isolated from the rest of the equipment.

Link Network

In the outside broadcast (OB) and link networks, the signals are usually transmitted in composite technology according to the PAL standard. A solution is the new digital 34 Mbit/sec transmission system for the contribution of video signals in component form. The transmission links present no problem, as they are conceived in

composite technology and are therefore transparent for PALplus signals.

Signaling of the Picture Ratio

For optimal reception of the picture signal, in the first half of line 23, four data packets are transmitted that contain information on the picture width to height ratio (4:3; letterbox; 16:9) and on the positioning of the subtitles (within the picture or teletext).

Summary

The introduction of component technology within the SRG studio started in August 1994, with the introduction of the PALplus encoding format for the German-language TV program SIFDRS. The French program TSR and the Italian program TSI will begin utilizing PALplus in 1995. The full conversion of the studio equipment, however, will be a gradual process taking place within the limits of the SRG studio replacement program.



HOPE REPORTS

Media Overview

Video/Film

Motion media (videotape and film) represent one-quarter of the non-broadcast, nontheatrical media industry, accounting for \$7.8 billion spent in 1994. This does not include a probable \$1.5 billion spent for national and regional television commercials, in addition to several more billions for television programs and Hollywood feature films for theatrical exhibition. In this particular market, video accounts for 96% of the total, and film the remaining 4%. Actually, film plays a growing role in the production phase, while videotape accounts for 98 or 99% of the final presentation or exhibition format. An overview of the presentation media is shown in Fig. HR-1.

The video segment has been on a plateau for several years and actually has declined slightly over the past five years. Two factors are probably at the heart of the problem.

The first is that the corporate world, especially over the past 15 years, and

particularly the last five, has cut down on its video production as a part of the downsizing trend. During 1994, Hope Reports found that almost every month at least one of the Fortune 1,000 companies either reduced its video unit or entirely eliminated it.

The other factor presents a true dichotomy. As new technology

explodes into the production marketplace, the cost of post-production equipment has dropped sharply. This, in turn, holds down the overall production costs. One important supplier has advertised that the cost of equipping an off-line edit suite, formerly about \$500,000, can now be as low as one-tenth the price, or \$50,000.

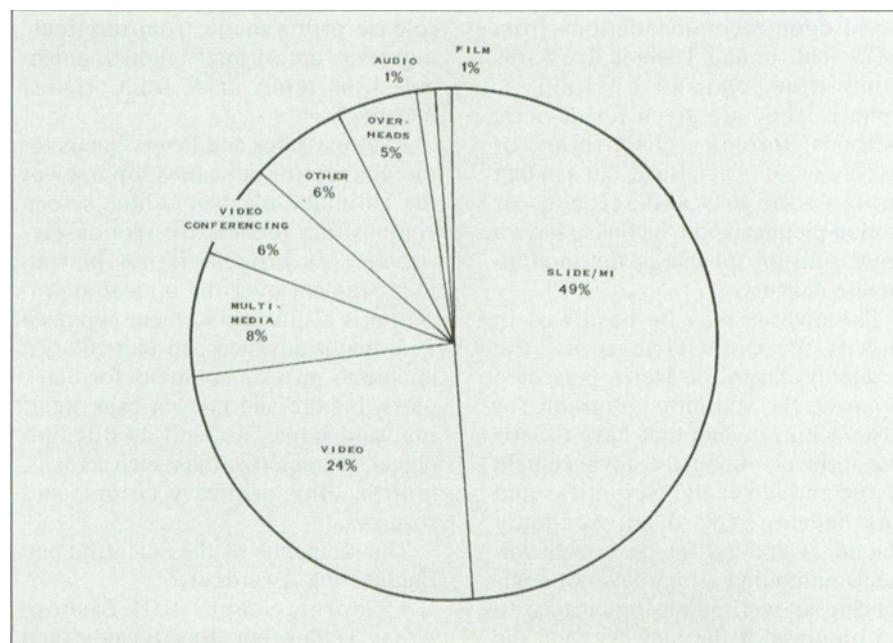


Figure HR-1. Presentation media — 1994.

This material contributed by Hope Reports, a market research organization in Rochester, NY 14618.

Multimedia

The term "multimedia" has been around for decades, long before the personal computer became commonplace. In the early days it referred to several teaching media in a package to be used by an instructor. It was often a series of filmstrips, together with some audio tapes and possibly a workbook. Today it is the use of several media recorded in a CD-ROM so that motion, sound, and still pictures plus text can be used. It can be seen on a computer monitor and even projected on a large screen before an audience. The CD-ROM is in frequent use in libraries and regular

computer applications, and CD-I is increasingly utilized for instruction in schools and training functions.

Multimedia is so new that an accurate reading has not been possible. What appears to be the best estimate of the total spent for multimedia as a medium came to \$2.5 billion in 1994. This is the medium anticipated to have the greatest growth during the rest of this decade.

Video Conferencing

Video conferencing, business television, and distance learning essentially are very similar. In recent years technology has improved to the point where

the medium can perform a service in education, business, government, religious use, and elsewhere. The best estimates for total expenditure in the U.S. in 1994 are about \$2 billion.

Other Media

Audio, chiefly using the compact disc, has not yet been measured by Hope Reports. The tape format expenditure for 1994 is estimated at \$250 million.

Total spending on other media, such as filmstrips, opaque projection systems, maps, globes, models, and picture posters, came to approximately \$2.05 billion in 1994.

— Thomas W. Hope



AMPAS Presents Scientific and Technical Academy Awards for 1994

Arthur Hiller, president of the Academy of Motion Picture Arts and Sciences, has announced the recipients of the 1994 Awards for Scientific and Technical Achievements. The presentations were made on March 4, 1995, at the Regent Beverly Wilshire Hotel as part of the 67th Academy Awards.

The Scientific and Technical Awards were voted on by the Academy's Board of Governors, based upon recommendations from the Scientific and Technical Awards Committee, chaired by John A. Bonner. They are given for devices, methods, formulas, discoveries, or inventions of special and outstanding value to the arts and sciences of motion pictures and which also have a proven history of use in the motion-picture industry.

The awards may be bestowed in any of three classifications: the Academy Award of Merit, presented as an Oscar statuette, is given for basic achievements that have a definite influence upon the advancement of the industry; the Scientific and Engineering Award, an Academy plaque, is granted for those achievements exhibiting a high level of engineering as well as an importance to the progress of the industry; and the Technical Achievement Award, an

Academy certificate, is offered for those accomplishments that contribute to the progress of the industry.

Awards of Merit were given to:

- The Eastman Kodak Co. for the development of the Eastman EXR color intermediate film 5244. The improved color reproduction, tone reproduction, and image structure of this film allow seamless transition among titles, special effects, and original photography. With this product, release prints made from duplicate negatives are virtually indistinguishable from prints made from original negatives.

- Petro Vlahos and Peter Vlahos for the conception and development of the Ultimatte electronic blue-screen compositing process for motion pictures. This process is not just an improvement over the optical approach, it is also a replacement approach with major advances. In particular, it is able to provide solutions for black gloss, impure and uneven back lighting, and noise, as well as difficult object characterizations such as hair, motion blur, arbitrary colors, and shadows.

The recipients of the Scientific and Engineering Awards are:

- George Sauve, Bill Bishop, Arpag Dadourian, Ray Feeney, and Richard Patterson for the Cinefusion

software implementation of the Ultimatte blue-screen compositing technology. This computer-based implementation of the Ultimatte Cinefusion process uses intelligent matte-decision algorithms and a powerful graphical interface to create an intuitive blue-screen matte extraction tool.

- Lincoln Hu and Michael MacKenzie, Industrial Light & Magic, and Glenn Kennel and Mike Davis, Eastman Kodak, for their joint development work on a linear array charge-coupled device (CCD) film input scanning system. Film input scanning systems are utilized to convert motion-picture sequences into digital data used for post-production manipulation, enhancement, compositing, and visual effects with a quality level previously unmatched by conventional opticals.

- Ray Feeney, Will McCown, and Bill Bishop, RFX, Inc., and Les Dittert, Pacific Data Images, for their development work with area array CCD film input scanning systems.

- Gary Demos and Dan Cameron, Information International; David DiFrancesco and Gary Starkweather, Pixar; and Scott Squires, Industrial Light & Magic, for their pioneering work in the field of film input scanning.