THE OPEN STUDIO DEVELOPERS CONFERENCE:

THE OPEN STUDIO EFFORT CONTINUES

BY CHRIS ALLAIN

In the wake of an historic agreement about the future of Digital Television (DTV) and last summer's VIDOEGRAPHY Open Studio Roundtable during SIGGRAPH '96, it becomes increasingly clear that we're on the cusp of a new era in mass media. The Open Studio Roundtable, in New Orleans, brought together a record number of digital video developers and users working to understand and influence evolving technologies. The event, once a sort of desktop video user's group, has become a forum for the digital media production industry.

Broadcasters see a rapacious computer industry trying to elbow its way into the family room. What they need to understand, however, is that the production and delivery of digital media represent a much bigger universe than that of broadcasting. The labor of those working for open, extensible digital media standards is not part of an effort to steal an industry. Instead, proponents of open digital media standards are looking for optimum production and delivery solutions. Tool builders such as Avid Technology or Matrox want to deliver better tools to digital media producers. Producers—from project studios to Paramount Pictures—want to use diverse tool sets that work together to deliver the best possible content to consumers. And consumers want choices, ease of use, and compatibility. If we can deliver optimum quality and compatible solutions, consumers and the entire industry will benefit—and that includes broadcasters, many of whom could soon find themselves in the datacasting business.

The computer industry, broadcasters, and receiver manufacturers reached an agreement on November 25, 1996(see Headline News, 12/96). This agreement allows the marketplace to determine the

Impossible dream? (l-r) Mircrosoft's Jason White, Panasonic's Michael Brinkman, Truvision's Laurin Herr, Videoics' Wojciech Majewski, and Apple Computer's Mitchell Weinstock find common ground at VIDEOGRAPHY'S Open Studio Developers Conference last month.

path to a new broadcast digital media infrastructure.

The opening session was capped by a visit from representatives of the SMPTE/EBU Task Force for Harmonized Standards for the Exchange of Television Program Material as Bit Streams. Bill Miller, SMPTE VP of Engineering and Merrill Weiss Task Force Co-Chair, described their activities and the need for harmonization of efforts to develop an infrastructure interchange of digital media assets in an open studio production environment.

Conference participants were also afforded the opportunity to learn about the implications of the recent Washington DC DTV agreement. We heard from two members of the team that represented the Computer Industry Coalition on Advanced Television Services (CICATS) in the negotiations: Steve Gabriel, Architect, Video & Graphics, Microsoft; and Don Norman, VP & Apple Fellow, Apple Research Laboratories.

This agreement, sent a strong signal to every stakeholder with an interest in the future of DTV. Based on this agreement, the FCC gave its approval to a new standard for DTV broadcasting on December 24, 1996.We are definitely entering a new era in mass media.

The OSDC Agenda

If you, like many others, have waited to study the issue of advanced TV until it became directly relevant to your daily life, it's time to start paying attention. The production and distribution scenarios that unfold between now and the turn of the century will likely set the stage for the next several decades.

The convergence of video and computing technologies leaves developers of digital media content with two major areas of concern: The platforms and tools that we use to create digital media content, and the platforms and distribution media that customers use to view this content.

Although there is a great deal

of commonalty in the underlying technology for computer-based digital media creation and delivery platforms, the two areas have significantly different user requirements. As the traditional linear television and interactive multimedia computing experiences begin to converge, new forms of content will emerge to serve diverse applications, including:

•linear television entertainment programming;

•media-rich interactive entertainment and information services;

•new forms of advertising that may combine traditional linear advertising with interactive experiences.

Content developers want to work in an open production environment where robust competition among manufacturers produces ever-improving products. They want an environment in which they can easily incorporate the best tool for the job without herculean efforts to get systems to work together. They also want to establish standards that will

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let them bring new delivery platforms and content to consumers that will fully exploit available technology.

OSDC participants produced two major initiatives:

•to develop target specifications for the delivery platforms of the future;

•to enable interoperability across digital media production platforms and products.

Target Specs For Future Delivery Platforms

Based on the discussions that took place during the OSDC, participants determined that it would be in their best interest to develop target specifications for the delivery platforms

for which digital media content will be developed in the coming decade. It is believed that two emerging technologies will be key components of the infrastructure for the next generation of digital media content authoring and delivery: the DV tape format, which will permit a new generation of more flexible image acquisition devices; and DVD-ROM, which will provide a mass-media distribution platform for integrated digital media that includes video, audio, graphics, 3D, and interactivity.

These technologies provide an immediate target for the content-authoring and distribution environments that the conference participants serve. Participants concluded that an appropriate performance target for the next generation of digital media platforms would lead to the harmonization of requirements for computer-based digital media applications and DTV broadcasting.

A break-out group of participants who were involved in the development of CICATS proposals for a "base-lay-

er" DTV met on Wednsday afternoon (December 4), and developed a unified performance specification from the "prior art" incorporated in the base-layer concepts. The specification sets a target at approximately one half the performance level established by the MPEG-2 Main Profile at High Level (MP@HL). This level of performance provides full support for 480-line progressive-scan video formats in a range of aspect ratios and frame rates, and for the presentation of 24 frame per second film at one million pixel resolution up to 1,440 x 720.

The specification also provides a list of requirements for data broadcasting that will allow the harmonization of the architecture of future multimedia computer and television receivers. These specifications provide a framework for the composition of multiple streams of information that represent the objects that make up a television program or interactive media title. This vastly improves the capabilities of a DTV television receiver, making it possible to deliver the same types of digital media via an interactive DVD-ROM or a broadcast DTV channel.

The recommendations developed by the group were delivered to the SMPTE/EBU task force meeting, held December 7-8, in San Jose CA.

Enabling Interoperability

The second action item rom the OSDC grew from a consensus that the industry overall could benefit from standards that would improve compatibility among diverse software and hardware products and platforms. We agreed that the entire industry benefits from better tools that are easier to use. We're all working with similar problems and have common interests that may benefit from harmonization of our efforts.

Participants agreed that the pace of change calls for a different approach to interoperability. The focus shifted away from an effort to pick "technology winners" by standardizing on a few things. OSDC participants instead emphasized how standards plug into each other. This approach eliminates one of the biggest roadblocks to the success of any standards organization: the ability to develop consensus. Participants begin to concentrate on defining the interoperable center, a "Digital Media Switzerland," to fully enable their technologies and standards.

A standards organization of some

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sort takes over the task of maintaining any intellectual property that resides within the center, and becomes a registry for all the standards that plug into it. Individual companies can protect their intellectual property by writing to a common interchange abstraction layer, and can differentiate their products by keeping proprietary technologies and features on their side of the interface. This approach represents a refreshing alternative to competitive isolationism that has often characterized our industry.

The breakout group focusing on interoperability spent much of its time discussing compatibility between Apple's QuickTime and Microsoft's ActiveMovie. The group resolved to deliver a list of the ten to 15 most important requirements for interchange of digital media assets between systems using Apple's QuickTime and Microsoft's Active Movie digital media architectures.

The list is being developed by engineering representatives of interested companies. It will be presented to Apple and Microsoft at a meeting in Santa Clara CA this month.

Several participants suggested that Avid's OMF (Open Media Framework) be incorporated into an abstraction layer into which QuickTime and ActiveMovie can be plugged. Avid seems to be receptive to spinning off the OMF effort into an independent organization. For competitors to buy into it, it must be a "game neutral" organization. The framework we develop will describe components including file formats, EDL formats, composite descriptors, and effects descriptors. The framework would contain an accounting of resolution, frame rate, bit depth, aspect ratio, and other asset-management issues. Production tools that support the framework would allow users to share files across applications and platforms.

Stay tuned as fellow VIDEOGRAPHY Contributing Editor Craig Birkmaier, my partner in the "Open Studio Effort," and I report on its development. We should soon see a draft of the interoperable features list produced by the engineering group. We'll look forward to reporting on this work and the response from the developers' digital media production tools. The Open Studio Roundtable began as an effort to "knock down walls," between companies; now it has evolved into an effort to build bridges. □