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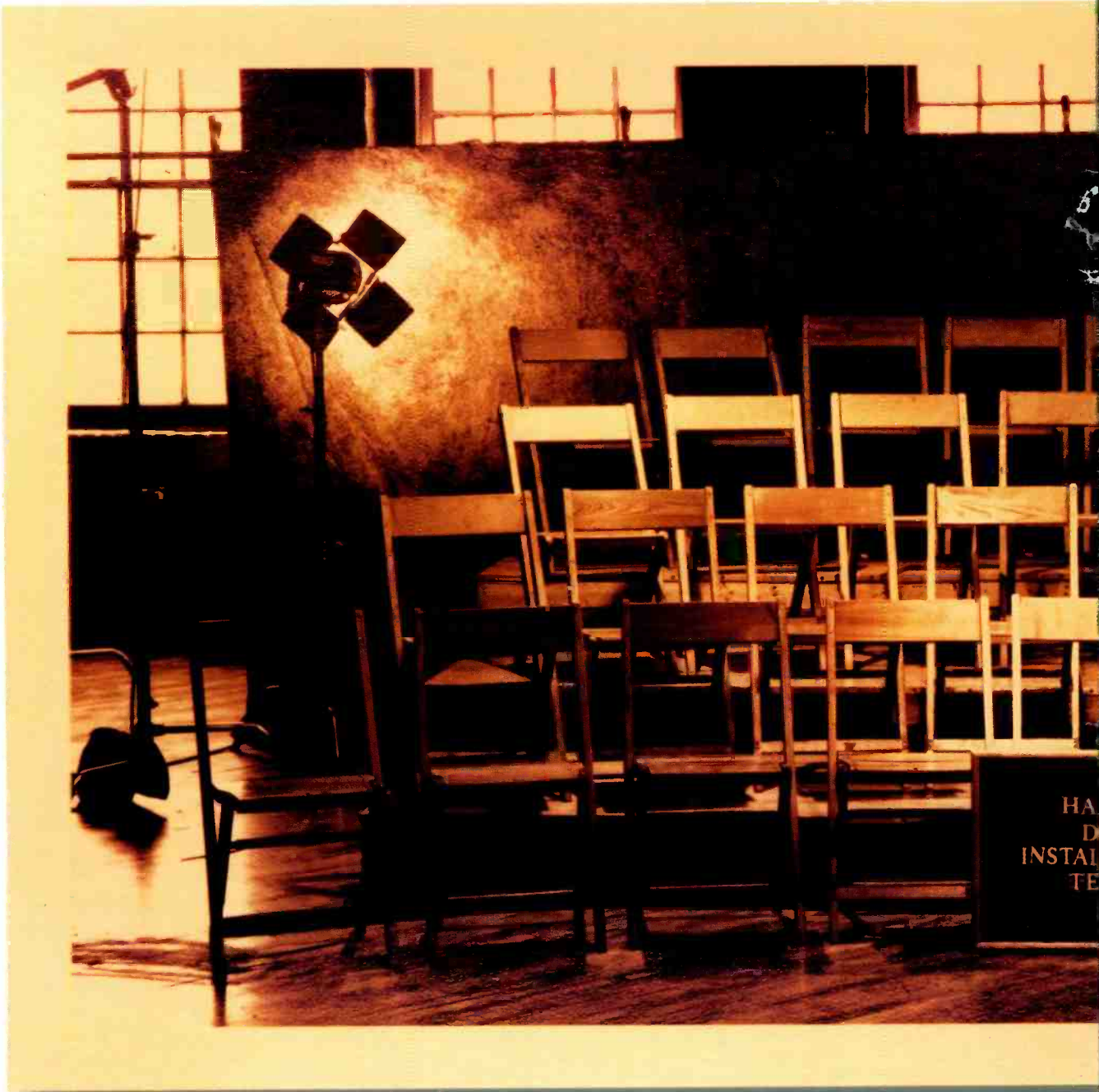
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Fritts: Forward on sat TV reform

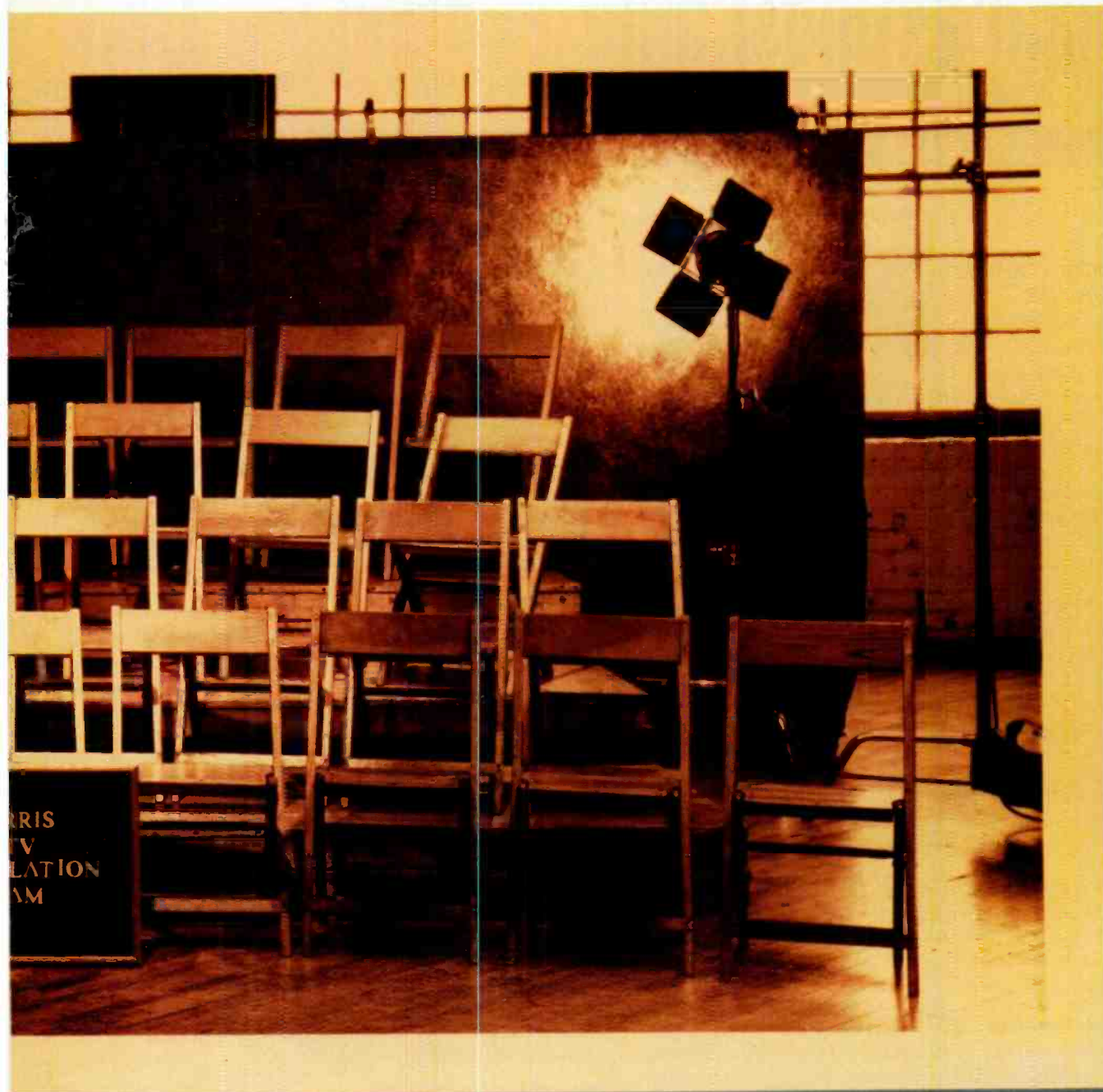
AT&T's Hindery says broadcast and cable can prosper together

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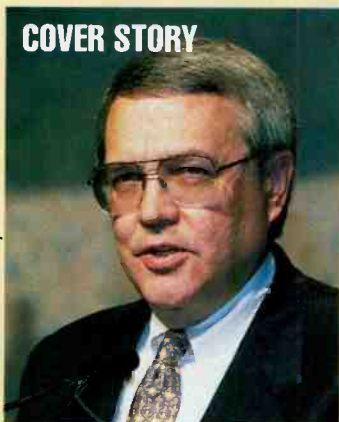
SPECIAL MIDWEEK NAB CONVENTION ISSUE

COVER STORY

Hindery comes a courtin'

AT&T's Leo Hindery says it's time for cable and broadcasting to stop battling each other and take on their real foe—print. / **8**

Cover: Craig T. Mathew/Mathew Photographic Services.



SPECIAL REPORT

May Day's OK

Most Big Four affiliates in the top 10 markets are on track to meet the FCC's May 1 deadline to launch digital broadcasting. A market-by-market status report updates their progress. / **20-34**



CBS eyes HDTV prime time in '99 CBS is seeking deals with major TV set manufacturers to underwrite a regular slate of prime time HDTV programming this fall, according to broadcast sources. CBS is offering to air filmed prime time shows in HDTV, if the manufacturers pay the cost of converting them to HDTV. The conversion costs about \$15,000 per hour. / **10**

Stop whining, says Stringer Sony CEO says broadcasters should lose their nostalgia for the good old days of analog TV and pursue digital with a passion. / **12**

Fritts says satellite TV is job one NAB president urges intensive lobbying effort by broadcasters to persuade Congress to mandate inclusion of TV stations by DBS in satellite TV reform legislation under consideration. / **13**

Turner trashes DTV multicasts "Another 40 channels we need like a hole in the head," is Ted Turner's take on digital multicasting. He's worried that such new channel will increase an already over-fragmented audience. / **16**

The Hill hits the FCC Congressional staff members criticize the commission for moving too slowly and spending too much time on issues such as increasing diversity in broadcasting. / **18**

Two sides to Y2K The good news is that radio looks to profit from millenium-themed advertising, boosting revenue 15%-16% this year, according to Radio Advertising Bureau President Gary Fries. The bad news, says FCC Commissioner Michael Powell, is that broadcasters need to do more to educate the public about the potential Y2K bug problems and consequences. / **35**

Panasonic previews the HD future It unveils its high-definition DVCPRO gear for 720p and 1080i formats. / **38**

Interactive demo EchoStar and WebTV showcase their new DISHPlayer interactive service that combines Internet access with satellite TV to distribute WebTV material via DBS. / **38**

Avid and Sony team up The companies want to offer nonlinear editing on MPEG-2 gear and let NewsCutter work on DVCAM. / **40**

Chyron, Pro-Bel ring up sales Deals announced at NAB include Duet graphics platform to Time Warner Cable, router system upgrade for DirecTV and Video Network Manager to NBC. / **41**

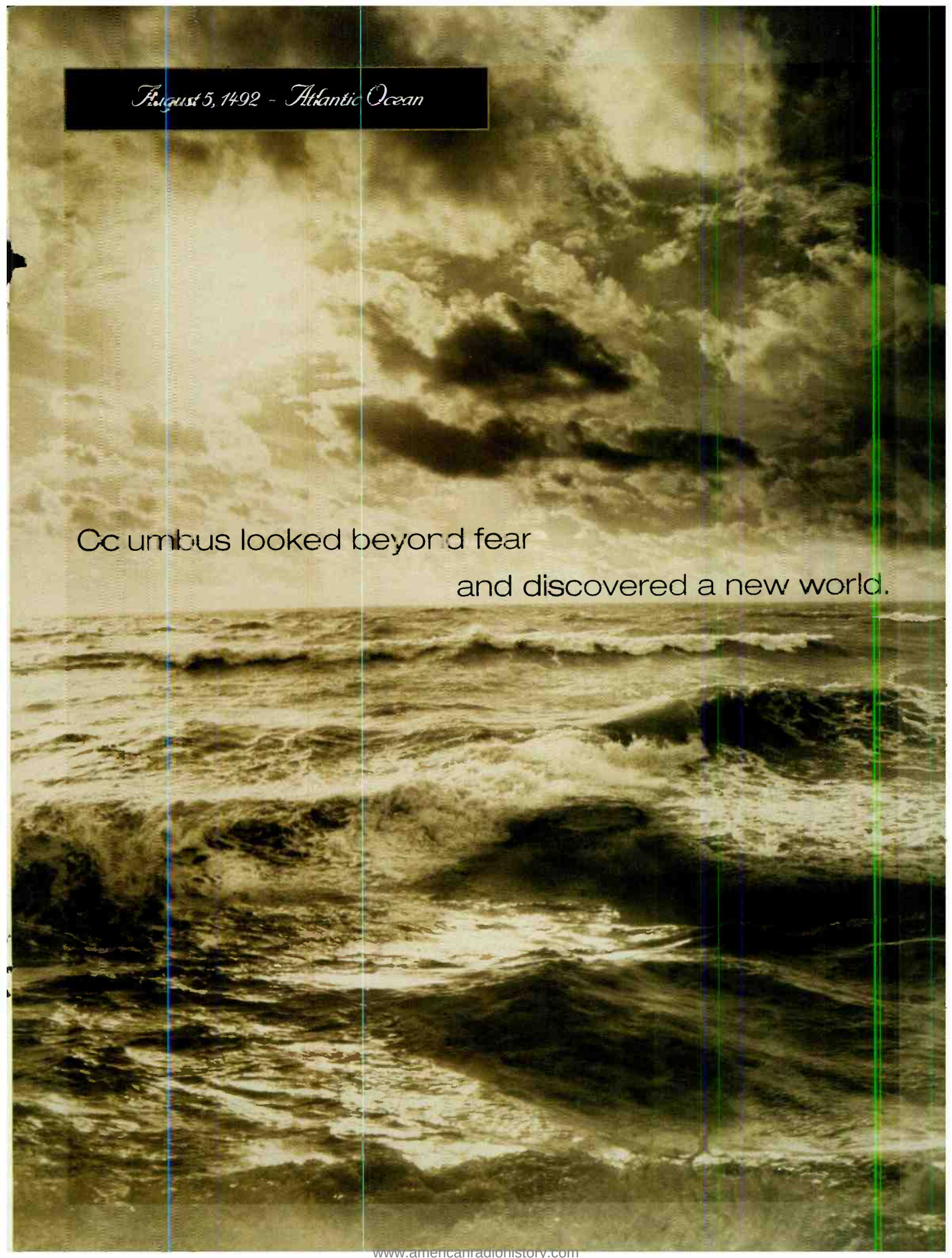
Convention digital photography by Craig T. Mathew and Rick Rowell/Mathew Photographic Services.

Printed in the U.S.A. Founded in 1931 as *Broadcasting*, the News Magazine of the Fifth Estate. *Broadcasting-Teletesting* introduced in 1945. *Television* acquired in 1961. *Cablecasting* introduced in 1972. *Broadcasting/Cable* introduced in 1989. *Broadcasting & Cable* introduced in 1993. *Broadcasting & Cable* is a registered trademark of Reed Publishing (Nederland) B.V., used under license. *Telemedia Week* is a registered trademark of Reed Elsevier Inc. *Reg. U.S. Patent Office.



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SONY

Hindery: Time to make nice

Says broadcasting and cable must unite to take ad dollars away from newspapers

By Steve McClellan

AT&T's Leo Hindery came a courtin' to Las Vegas on Tuesday. It's time for the cable and broadcasting industries to kiss and make up, he told a crowd at the opening session of the Television Bureau of Advertising's conference within a conference at the NAB convention Tuesday. It's time the industries stopped battling each other, he said, and take on their real foe—the print industry—which commands more than three times the amount of local ad revenue generated by cable and broadcast combined.

But Hindery's proposal went beyond burying the hatchet (somewhere other than between each other's shoulder blades). His pitch was nothing short of attempted seduction—broadcasters and cablers should jump into bed and spawn beautiful new ventures in the digital age.

"I don't blame you for sometimes thinking of the cable industry as your enemy," Hindery said, citing the audience erosion that broadcast TV has suffered in recent years at the hands of an increasing number of cable networks. "But let me say for the record, I am not your enemy."

Hindery said that acting as partners in the digital age, broadcasters and cable operators both will prosper more than if the analog world battles are allowed to rage on. "We are far more alike than we are different," he said, citing community ties, localism and the fact that "we are both television. Viewers don't choose between cable and broadcast. They don't care how they get their content. They just want it."

"The real war we face is with the print media," he said. Newspapers and direct mail pieces are the media of choice for most local advertisers, he said. "They're simple tools. Advertisers can touch them, see them and feel them...who can blame advertisers for thinking that these are the No. 1 consumer marketing tools? They currently have no better alternatives."

Automotive advertising is the largest single source of local advertising for TV stations. But auto dealers spend twice as much money in print than on local TV,

said Hindery. Overall, he said, annual local print and direct mail advertising revenues generate \$80 billion annually, compared to about \$25 billion for local broadcast TV and cable.

How to narrow the gap? By building "a bridge that's built on cooperation and collaboration" and supported by digital technology.

Broadcasters and cable operators can use digital broadband technology to create interactive products and services that will enable advertisers to target, said Hindery. "At the end of the day, that's what every advertiser in America wants. They don't want to count

AT&T is installing almost 6,000 digital set-top cable boxes a day, Hindery said. The MSO has already installed 1.8 million boxes and expects to upgrade most of the rest of its household universe within three to four years. The "devices," as Hindery calls them, will enable commercials "with transactional tools that can motivate a prospect to become a buyer—something print and direct mail can't possibly do.

Where do broadcasters fit in? "It's still too early to know exactly what will be offered when," said Hindery. "Yet, that's the beauty of where we are today. We have a slate here and it's blank—you and

I will create the future together. As we do, let's consider things like multiplexing, time shifting of programs, joint selling and local-program zoning."

As to multiplexing, Hindery told local stations to "imagine the ability to cross promote and share talent the same way NBC and MSNBC do—between different but related channels—that serve news, weather and sports interests daily." Such opportunities can be made very attractive to advertisers, he said.

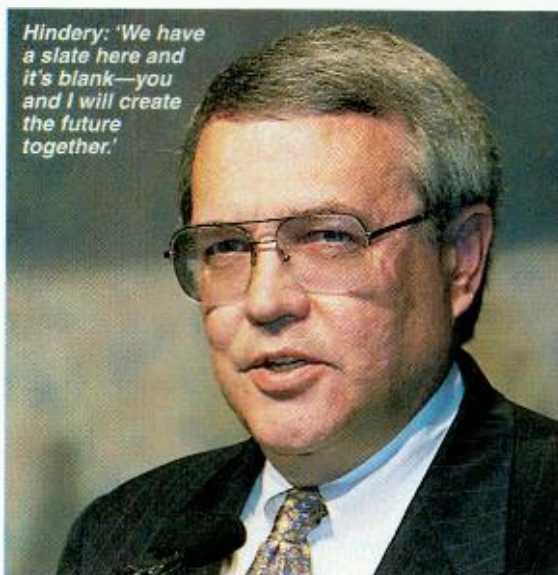
Hindery urged broadcasters to talk to the cable industry about joint ventures of all kinds, including programming, promotion,

rights sharing, even joint marketing studies to determine how best to "shift money away from print and direct marketers."

The digital revolution is bearing down on both industries, Hindery said. "But in order for us to fully participate in that revolution, we must stop thinking about the narrow world in which we live and start seeing the bigger picture."

Reaction to Hindery's speech was mixed, but some questioned how closely the two industries could work together in the quest for ad dollars. Bill Spell, group vice president for advertising sales at the Cox TV station group, applauded the

Continued on page 50



eyeballs anymore. They want greater access to more eyeballs that count."

And, Hindery contends, advertisers will pay a premium for that access, and perhaps, pay a premium "for every single transaction that takes place. That means new revenue streams for us. And, if you choose to participate, new revenue streams for you, too."

Hindery showed a video clip of TV viewers happily interacting with their TV sets, clicking on "more" icons on the TV screen to find out more about products being advertised, even buying services, just as people buy goods and services on the Internet.



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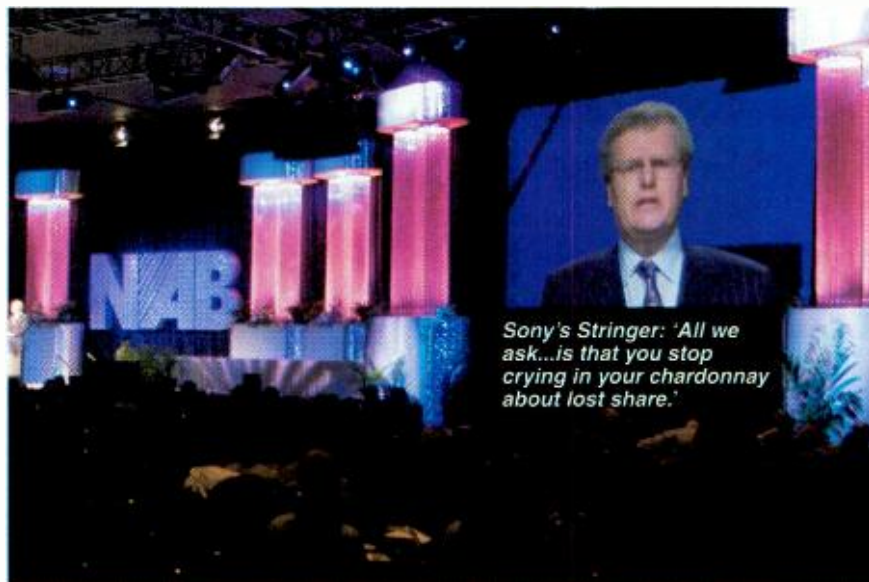
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Stop whining, Stringer tells broadcasters

TV networks, others must lose nostalgia for analog

By Steve McClellan

Digital television is inevitable, said Sony Corp. of America CEO Howard Stringer. And broadcasters should stop whining about the passing of the good old days of analog TV and embrace digital—especially the production of high-definition programming—with all the gusto and passion they can muster.

If they don't, Stringer told NAB conferees on Monday, executives firmly entrenched in the digital world, such as Microsoft CEO Bill Gates, and Steve Case, head of America Online, "and a couple of 20-year-olds we've never heard of will be happy to talk down to us and take our place."

Nostalgia, Stringer said, has been the networks' "disease" over the decades. Stringer's speech was riddled with unabashedly self-serving references to how Sony can help broadcasters both make it to the promised land of digital television and then be all that they can be once they arrive. "We can help you figure out lots of marvelous way to make your businesses work better. And all we

ask in return is that you stop crying in your chardonnay about lost share."

Broadcasters worry too much about the pitfalls of digital, said Stringer. Network television is the "Charlie Brown of media, constantly worrying that the past is not prologue," he said. Three decades ago the industry worried about the transition to videotape. "Then came cable. You thought cable was not something you watched but something you buried. The result: cable almost buried you."

Nevertheless, broadcasting is not the relic that many have made it out to be, Stringer said, noting that for that last 10 years the press has written about the demise of network television. If broadcasting is a dinosaur, Stringer said, it's important to remember that dinosaurs "ruled the Earth for 60 million years, dominating all around them." He also urged his audience to consider the huge investments that companies including Time Warner, Viacom and USA Networks Inc. have made in broadcasting. Are they investing in a "species on the verge of extinction?" Stringer asked. "I don't think so."

While the networks' slice of the audi-

ence share is shrinking, their total audience is increasing as the population grows. Share erosion, Stringer said, is not a network phenomenon, but a media phenomenon: "Erosion is an inevitable consequence of increased choice."

The challenge, he said, is two-fold: Making the actual leap to digital production and products and "explaining what that leap is all about" to consumers.

DTV requires large up-front investments even as the industry is figuring out how those investments will pay off. "Because, without investing in digital, the broadcast industry will stagnate, forgoing new revenue streams, new creative energy and the new content that is most vital to your success." If that happens, he said, then broadcasters may indeed be headed for extinction.

HDTV, multicasting, interactivity and enhanced local content are the pistons that will drive digital television, Stringer said. And broadcasters simply have to get over the fact that consumers aren't buying digital sets in droves—yet. "We all need to get beyond this chicken and egg dilemma and move the industry forward. We've got to establish the infrastructure to make digital television successful."

And HDTV programming is a critical component of that infrastructure, he said. "Viewers deserve a clear and compelling reason to make the digital leap with us. Nothing is more compelling than high-definition pictures."

More spectrum, said Stringer, will give local stations great opportunities to expand local programming and enhance programming with interactive features. "That means more local commerce as well, which will provide a whole new revenue stream for all station groups."

Digital TV has the potential to become the "centerpiece of home entertainment for years to come. At Sony, we view the DTV set as the command center for a digital home network. Our homes will be as connected tomorrow as our offices are today." Viewers "will be able to temporarily store a television program on a hard drive when the phone rings, purchase and download the latest release from a favorite music artist, and much more."

The transition to digital will require unprecedented levels of cooperation, Stringer added. "The digital dance is proceeding all around us. WebTV and

Echostar are waltzing together. US West and Network Computer are locked in tango. Cable and telephony are marrying for richer bandwidth—or poorer. With the dance floor so crowded with potential partners, this is no time to be a wallflower. Like everyone else, broadcasters too must face the music and dance.”

Stringer strongly urged networks and their affiliates to stop squabbling and find common ground upon which to march lockstep into the digital future. “If they can’t work together, then who can?” He also urged the cable and broadcast industries to follow the example of Time Warner and CBS with their deal on digital retransmission.

“We’re all on the digital track,” Stringer said. “But as the cowboy philosopher Will Rogers pointed out, ‘Even if you’re on the right track, you’ll get run over if you just sit there.’” ■



For contributions as broadcasting pioneers from radio’s early days to the present, the National Association of Broadcasters bestowed its Distinguished Service Award upon the Cox family. The award was also a recognition of the Cox family as a multimedia conglomerate with 53,000 employees and major interests in broadcasting, cable and newspapers. The Cox media empire had its beginnings 101 years ago when company founder James M. Cox bought his first newspaper. Cox, a three-time governor of Ohio, bought the family’s first radio station—WHIO(AM) in Dayton—in 1934. Cox also established the first commercial TV station in the south, WSB-TV Atlanta. Current Cox CEO, James Kennedy (son of Barbara Cox Kennedy), accepted the award (above) on behalf of the entire Cox family and all Cox employees.

Fritts: Satellite TV is job one

NAB chief urges broadcasters to lobby for distribution of local stations via DBS

By Paige Albiniaik

NAB President Eddie Fritts called broadcasters to action Monday, telling them to lobby Congress on satellite TV legislation. He also urged them to find common ground on broadcast ownership limits.

“These are lifeblood issues for our stations,” Fritts said at the opening session of the NAB convention.

Congressional staffers and broadcast lobbyists at NAB were making plans to leave Las Vegas early to return to Washington to work on satellite TV reform legislation. The House plans to vote on its version of the bill tomorrow (April 22).

The Satellite Home Viewer Act would allow satellite TV companies to carry local stations. Congress hopes passing the bill will allow satellite TV to compete more effectively with cable.

“Now is the time for you to contact your members of Congress and make sure they do get it right,” Fritts said.

Fritts also implored networks and their affiliates to resolve their disputes over ownership limits.

Reflecting the wishes of network-

affiliated TV stations, the NAB board last year summer voted to maintain the national broadcast TV ownership cap, which limits station groups to covering no more than 35% of U.S. TV homes. But the networks have been pushing to raise the cap as high as 50%.

NAB will continue to “forcefully advocate” maintaining the 35% cap, but implied that the position is weakened because of the division within its ranks.

“We can only be successful in our many lobbying endeavors with the help of our NAB members,” Fritts said. “Unite with us. Help us to continue to educate policymakers on the importance of strengthening free, over-the-air broadcasting.”

The NAB also is paying close attention to FCC Chairman William Kennard’s proposal to grant licenses for low-power radio stations.

“We’re very concerned that the FCC



Fritts: “Now is the time for you to contact your members of Congress and make sure they do get it right.”

proposal may have the effect of legitimizing pirates,” Fritts said. “Frankly, we’re even more concerned that the FCC proposal will sanction more interference to existing stations. In fact, it could preclude an orderly transition to in-band on-channel digital radio for terrestrial broadcasters.”

The NAB also is watching efforts in Congress and at the FCC to

give permanent licenses to low-power TV stations. Reps. Charlie Norwood (R-Ga.), Ron Klink (D-Pa.) and Nathan Deal (R-Ga.) have sponsored a bill to that effect, while the FCC is considering a rulemaking.

Giving full interference protection and power to LPTV stations could threaten broadcasters’ plans for digital. “Even though it is somewhat embryonic, we know enough to know that digital is a necessity for local stations to be competitive in the future,” Fritts said. ■

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Turner trashes DTV multicasts

By Steve McClellan

Time Warner Vice Chairman Ted Turner questioned the need and viability of multicasting during his luncheon address Monday at the NAB convention. But he also said high-definition television was probably a "worse alternative."

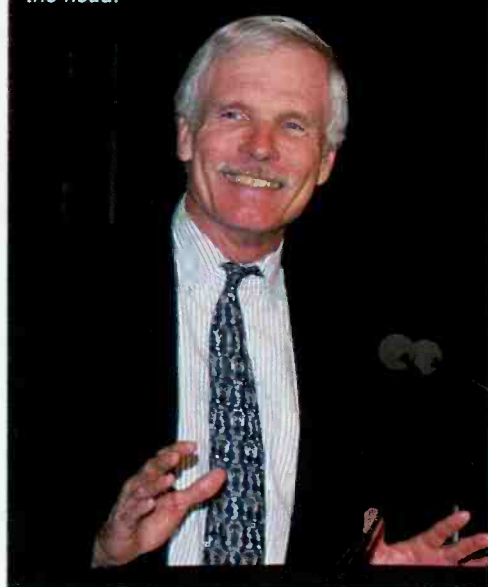
"You're going to go from eight stations to over 40 stations in the same market, all at once. Where is the programming going to come from?" he said. "You're not going to get any fees for it. Cable systems are not paying anything for anything anymore," he said. "They think they're already paying too much for the old stuff."

"And that is where Rupert [Murdoch] is getting you," said Turner,

unable to resist taking a potshot at his media arch rival and chairman of News Corp. "He's getting you because he's losing money on his regional sports networks and he's got to pay [Los Angeles Dodger pitcher] Kevin Brown from somewhere, so he's getting it from his affiliates," a reference to Fox's recent decision to cut back the amount of ad time affiliates get to sell locally.

"Another 40 channels we need like a hole in the head," said Turner. "Audience fragmentation is bad. It's hurting everybody." Turner said the thing that made TV and radio a good business was "limited competition. The business was the best when there were only three channels, ABC, CBS and NBC,

'Another 40 channels we need like a hole in the head.'



because they could all fix their prices."

Turner recalled years ago when WTBS(TV) was a struggling Atlanta independent. The general manager of WSB-TV, the ABC affiliate there, would always admonish him to keep his prices up. "But we never really sat down and said how much we should keep them up."

Turner jokingly asked his audience to "all agree that we are not going to put on any more channels. Let's just leave the whole thing right where it is. We have enough competition right now."

Turner couldn't resist a joke or two at the expense of the NAB, either. He recalled being an NAB member in the years before he put WTBS on a satellite to sell it to cable operators. The NAB wasn't pleased with that decision and Turner said he dropped his membership "because I didn't want them to take my \$5,000 [in dues] and beat me over the head with it."

A few years later he tried to rejoin the NAB, Turner recalled, "and I was turned down. I reapplied and they wrote me back and said I was a member of the NCTA [National Cable Television Association], stick with them, you asshole."

Commenting on Time Warner's own TV network, The WB, Turner said it was "doing pretty well. Not great. But better than UPN and you didn't have 20% of your inventory taken away like Rupert Murdoch did to Fox. We will not do that at Time Warner. We won't screw you and lie to you."

'Family' reunion



The National Association of Broadcasters inducted 'All in the Family,' its producer and cast into its Television Hall of Fame in a ceremony Monday in Las Vegas. "For nine years, 'All in the Family' made us laugh, made us think and after that television was never the same," said NAB President Eddie Fritts. Accepting the award were creator/producer Norman Lear and cast members Rob Reiner and Sally Struthers. "I don't know if it was the best show on television," said Lear. "But I don't think anyone had a better time or laughed harder [producing a show]." No one person can take credit for the show, he said. The way the show came together was a "miraculous chemistry.... The stars were in line."

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Hill hits FCC

Commission criticized for slowness and focus on diversity

By Paige Albinia

FCC-bashing appeared to be the game of choice for members of Congress and their staffers in Las Vegas Monday. They said the FCC handles issues too slowly and that FCC Chairman William Kennard spends too much time on policy-oriented matters that are inappropriately focused on increasing diversity in broadcasting.

"I'm a critic of the FCC in the way it handles telecommunications mergers," said Senate Antitrust Subcommittee Chairman Mike DeWine (R-Ohio). "Unless you are prodding and kicking them, they are just slow. The FCC is basically just too darn slow."

DeWine last month introduced a bill that would require the FCC to complete work on all telecommunications mergers six months after receiving all the paperwork. House and Senate staffers supported DeWine's bill, as well as the FCC reform efforts of House Telecommunications Subcommittee Chairman Billy Tauzin (R-La.).

"It's the mindset of the FCC we have to change," Johnson said. "We have to make it less of a regulatory agency and more of an enforcement agency." That's an idea that Kennard himself proposed at Tauzin's FCC reform hearing last month.

Pete Belvin, aide to Senate Commerce Committee Chairman John McCain (R-Ariz.), said the FCC should have time limits for every type of item it processes. "If the commission doesn't make the time limit, the item should be automatically granted as it was presented to the commission." Belvin also said that the commission should have to reimburse companies for costs incurred after the commission's deadline.

"Literally any time an industry comes in to see McCain, they are complaining about items that can't seem to get done and are just gathering dust at the commission," Belvin said.

"You can't be sitting in an environment of uncertainty," DeWine aide Louis DuPart told broadcasters. DuPart also said that without a secure business

environment, broadcasters are handicapped when they approach capital markets for financing.

House and Senate staffers said there is a bipartisan call for a bill this year that would reform the FCC.

Tim Wirth, aide to House Speaker Dennis Hastert (R-Ill.), said "the leadership does take FCC reform seriously," and pointed to a supporting statement that Hastert submitted before Tauzin's FCC reform hearing.

Lawmakers and their staffers said that many issues Kennard takes up, such as microradio and dismantling

reality. "Microradio should be done first and only after consulting Congress," Johnson said. He added that he has been told the FCC would not finish the proposal until mid-2000 at the earliest.

Staffers say Kennard's microradio proposal is ill conceived and unworkable if it interferes in any way with the transition to digital radio.

"The challenge is to explain to members of the House and Senate what this will actually mean to our constituents," DeWine said. "When I turn my radio on, what is that going to mean to me? But, for a practical member of Congress, this is not a real issue."

"I don't think those licenses ought to be dealt out just like you are dealing 21 in this casino," Burns said. "Kennard only has one phone and that's a direct line to the Naval Observatory," where Vice President Al Gore resides.



Hill aides (l-r) Pete Belvin, Louis Dupart, Paula Ford and Ken Johnson contend that the FCC spends too much time on issues such as microradio and LMAs.

local broadcast marketing agreements, are specifically aimed at advancing Kennard's agenda of diversifying broadcasting. That tendency also is encouraging Congress's efforts to reform the agency.

"Bill Kennard's taking his marching orders from the White House," said Ken Johnson, Tauzin's spokesman. More and more, he's acting like a cabinet member and not the chairman of an independent agency. "Kennard floats these trial balloons. Does he really think about what he's saying?" Johnson asked.

"[Senator Conrad] Burns (R-Mont.) voted against Kennard because of this tendency to engage in policymaking," said Mike Rawson, an aide to Burns.

Congressional staffers tried to ease broadcasters' minds about microradio, an FCC proposal that full-power broadcasters staunchly oppose. Staffers say the plan is a long way from becoming

Members and staffers also discussed satellite TV reform, which is slated for a vote on the House floor as early as Thursday. Broadcast lobbyists were upset at the vote's timing, when most of them were scheduled to be in Las Vegas.

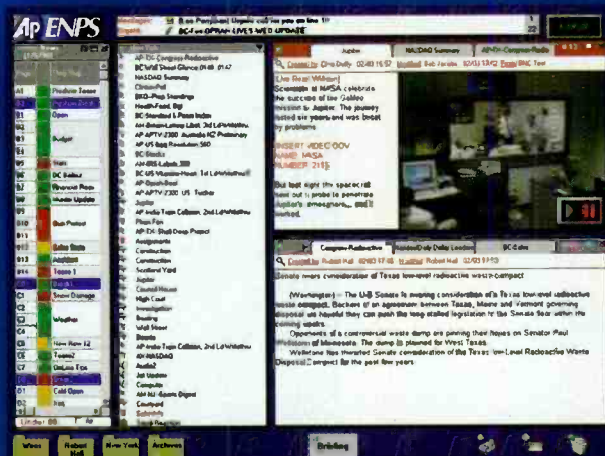
Johnson said the vote's inconvenient scheduling was due to a miscommunication between House leadership and the House Commerce and Judiciary Committees, both of which have passed comprehensive satellite TV reform bills. Johnson said the leadership thought the bill was ready for a vote when it was scheduled, although some tinkering still was needed.

The industries also are feuding over several provisions in the bill, including terms of retransmission consent, who pays for signal-strength tests for distant-signal subscribers and over what area the programming exclusivity rules cover.

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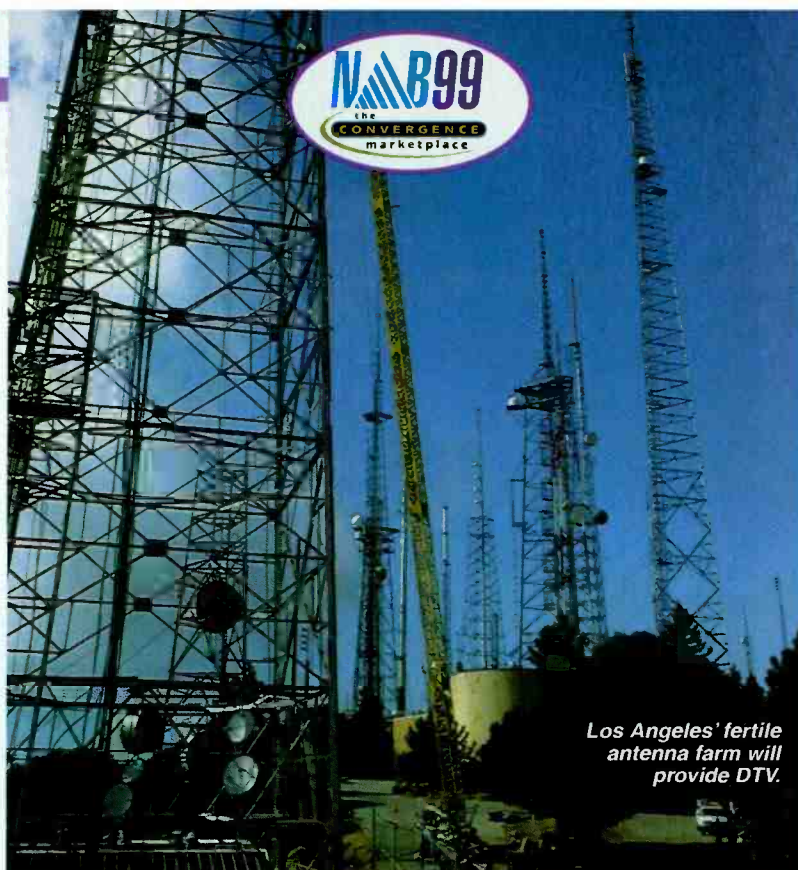
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Los Angeles' fertile antenna farm will provide DTV.

May Day

Most Big Four TV stations in top 10 markets will make DTV deadline

Even as chief engineers struggle with last-minute equipment-delivery delays and

management negotiates with tower owners and competing stations, digital television is coming to the top 10 markets.

In many respects, it's already here. BROADCASTING & CABLE's survey of the top 10 markets reveals that 24 major network affiliates are already on the air in advance of the FCC-imposed deadline. Eighteen were already on the air with a digital signal by Nov. 1, 1998, the date of the voluntary deadline. Six more stations were on-air between the voluntary deadline and the end of last year.

That leaves just 17 stations that still have to meet the deadline as of early April. Most said they plan to comply—on or about the FCC-mandated May 1 date. A few were already broadcasting digitally, testing the transmission intermittently, with plans to commit to a full-time digital signal once the deadline arrives. At least three, however, had filed requests for extensions with the FCC, including two in New York and one in Chicago.

"Pretty much everybody is on track," says John Earnhardt, spokesman for the National Association of Broadcasters. "Any delays can be explained either because of equipment or tower siting, but everybody is making a good-faith effort to meet the deadline."

Many of the early adopters (those that went digital by Nov. 1) paid a premium for pioneering the new technology. And the come-latelies say they are happy to be buying next-

generation equipment at prices that appear to be dropping daily. More than one engineering director told BROADCASTING & CABLE that

unofficial station policy dictated waiting until the absolute last minute before buying equipment, just in case the prices start falling again.

Meanwhile, premiums for some high-definition production equipment have dropped 20%-30% compared to standard-def counterpart equipment. As prices continue to drop, some broadcasters are beginning to believe that wide-scale high-def production is going to be feasible a lot sooner than expected. That is, if that's what consumers want.

Consumer reports indicate that prices for DTV sets are dropping and customer awareness is growing. According to Consumer Electronics Manufacturers Association (CEMA) forecasts, 10 million digital TV sets will be purchased between now and 2003, with the next 10 million sold in 2004 and 2005. Annual unit sales are expected to exceed 10.8 million in the year 2006.

Even so, broadcasters in major markets are complaining that most retailers aren't interested in promoting DTV. According to some, it's not unusual for a salesman to tell a customer that it doesn't exist and probably won't until 2006 or so.

Over the next 10 pages, we have outlined the state of DTV deployment in the top 10 markets. Our research suggests that broadcasters, for the most part, will comply and are going to be ready. The biggest question, however, remains: When will the viewers get here?

—Andrew Bowser

New York

Two stations—WABC-TV and WNBC—will miss the May 1 deadline



WCBS-TV and Fox owned WNYW have digital antennas atop the Empire State Building.

DTV plans at a glance

Station: WABC-TV
Owner: ABC Inc.
Network Affiliation: ABC
Analog/Digital Channels: 7/45
Digital Status: Request for extension filed with the FCC March 24, 1999; no deadline date granted.

Station: WCBS-TV
Owner: CBS Inc.
Network Affiliation: CBS
Analog/Digital Channels: 2/56
Digital Status: On-air since Sept. 18, 1998

Station: WNBC
Owner: NBC TV Stations Division
Network Affiliation: NBC
Analog/Digital Channels: 4/28
Digital Status: Three-month extension granted until Aug. 1, 1999 to complete construction

Station: WNYW
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 5/44
Digital Status: Scheduled to be on-air May 1, 1999

Between vertical real-estate headaches, equipment delays and local zoning issues, the task of implementing DTV in New York City might charitably be described as "challenging." Only one of the four major network affiliates is already on-air. Yet digital television may be one step closer to resolution, even though two others will miss the intended May 1 deadline. The main problem is finding available tower space, which is in short supply.

"It's been difficult here in New York to get the antenna locations squared away and figure out how the limited resources can be shared between the broadcasters here," says WABC Chief Engineer Bill Beam.

The primary antenna site locations are atop the World Trade Towers, which is where the main NTSC antennas for all four major network affiliates are located, along with most of the other stations in the market. A short distance away is the Empire State Building, where WCBS has an auxiliary antenna that was put to good use in the wake of the World Trade Center bombing.

CBS has installed a three-bay Harris DTV antenna atop the Empire State Building in anticipation of clustering by local UHF broadcasters. Construction at the site did not go as smoothly as expected. Workers spent months replacing rivets with steel bolts in order to strengthen the tower. The antenna was finally completed and has been offered to other local broadcasters. But no one has taken them up on the offer yet.

"We've designed our antenna and transmission line

to be wide-bandwidth, so we can handle any UHF channel from 14 to 69," says Bob Seidel, vice president of CBS' engineering and advanced technology.

But the offer may be moot, at least as far as the major network affiliates are concerned. In late March, ABC officials notified the FCC that WABC would not be able to make the May 1 deadline and requested an extension. According to Bob Niles, the network vice president and director of engineering for owned television stations, ABC has decided to work with NBC in the New York market. The two plan to "conclude lease negotiations" for space at the World Trade Center with the Port Authority of New York and New Jersey, which owns the towers.

"NBC is the lead proponent on an antenna installation on the World Trade Center, and we are joining them in that project," says Niles, who indicates the project will include a Dielectric master antenna that can accommodate multiple stations.

With the FCC request filed on March 24, ABC officials are hoping for a speedy resolution. "It's been a long, frustrating process," Niles says.

In addition to coping with antenna installation problems, WABC will have to build out DTV infrastructure, meaning that the project will be delayed by six months if not longer, according to Niles. But the delays haven't completely halted plans to deliver digital in 1999. A tentative order has been placed with Harris for a transmitter. In addition, ABC has group purchasing arrangements in place that could be used by

the New York station.

Digital equipment purchases are also in a holding pattern at WNBC, in light of the fact that the station does not currently have an agreement in hand stipulating from where it will broadcast, says WNBC's Director of Operations and Engineering, Steve Pair. "I have ideas, but I haven't done anything yet."

Meanwhile Fox's affiliate WNYW is gearing up to broadcast digitally on channel 44 using a single-frequency TRASAR antenna system atop the Empire State Building. Late last month, Vice President of Operations and Engineering Greg Franchuk said the project was "well under construction," with transmitters in place, a transmission line under installation and antenna system in hand, ready to be mounted.

"We're moving along," Franchuk says. "Right now, it looks like we'll make the date."

Franchuk says "the greater percent" of his workdays have been spent making trips to the Empire State Building to monitor construction, reviewing plans with architects and electrical engineering firms, and keeping tabs on vendors to make sure they deliver on time. Like other stations rolling out for the May 1 deadline, WNYW has suffered manufacturer delays that have made the FCC time constraints seem a bit tighter. But he doesn't blame the vendors, who are coping with multiple orders for major components that in some cases haven't even been completely designed yet. "Everything is so new," he says. "This isn't like buying a VCR." —Andrew Bowser

Los Angeles

Three of city's Big Four stations already digital

It was with a certain measure of relief that KCBS-TV staffers flipped the digital switch in late fall of 1998. Originally scheduled to go on-air by the FCC's upcoming May 1 deadline, KCBS suddenly found itself a guinea pig for a much earlier deadline.

Initially Chicago's CBS station WBBM had agreed to be the trial station and get its digital transmission up early and running by November 1. But zoning and tower issues in Chicago forced the network to reconsider its plans. CBS approached KCBS in February of last year about kick-starting digital deployment in Los Angeles.

"We had done nothing—zero," says Steve Blue, KCBS' director of broadcast operations and engineering. "We basically did in about eight months what other stations had been planning on executing over a three-year period."

Virtually all of KCBS' digital equipment was determined by the network, easing the transition somewhat. "The major goal here was to do compliance," says Blue.

The bulk of KCBS' digital fare is converted NTSC interspersed with several hours worth of high-definition presentation tapes to give Los Angeles-area HD set owners something to look at and encourage retailers to set up active displays. To date, the signal's been tested only using standard rooftop antennas outside of Blue's office and the engineers' offices at Television City—though CBS plans to deploy a van loaded with monitoring equipment once more of its stations adopt digital this year and next.

Other Los Angeles stations, KABC-TV and KNBC, volunteered to launch digital broadcasts last November and both have succeeded. The only major network affiliate yet to bring a digital signal to air is Fox-owned KTTV, which is expected to broadcast on channel 65 at an average ERP of 1000 kw from its tower atop Mount Wilson. The FCC granted KTTV its digital construction permit last Nov. 18.

"Certainly it is something we are working on, but that's about all right now," says John Frenzel, vice president of programming for KTTV.

Also broadcasting digitally in Los Angeles is WB affiliate KTLA, which threw the switch on Nov. 2. The Tribune-Broadcasting-owned station became the first in the L.A. market to originate high-definition programming, broadcasting the Tournament of Roses Parade in January.

The station promoted the event with the help of Best Buy stores. Five of the retailer's Southern California locations broadcast the event live from their showrooms.

Since launching, however, KTLA's fare has been almost entirely upconverted NTSC. "We've had some technical difficulties that we've been taking care of one at a time," says the station's Chief Engineer Lou Bardfield. "But our biggest difficulty is the lack of high-definition or even digital programming to put directly on the air."

KNBC was picked by NBC in April 1998 to be an early adopter as well. The station launched a test digital signal on Oct. 22, 1998, and followed up several days later with an upconverted audio

and video feed.

"From the time that first announcement was made, it was about a six-month period, and we made the date with about a week to spare," says Brett Crutcher, KNBC director of engineering and technical operations.

NBC recommended the equipment, which included a Tiernan encoder and a Snell & Wilcox upconverter. The studio transmitter link is California Microwave's Twin-Stream dual carrier. Strengthening the tower to support the digital antenna took approximately eight weeks. KNBC also ceased using its old analog antenna, opting for a new model that sits on top of the digital antenna.

KNBC has started filming its weekly Sunday morning series, *Travel Café*, in high definition and plans to continue doing so.

"We downconverted it for our NTSC station, channel 4, and we'll broadcast it in the original 1080i format to our digital station," Crutcher says.

KABC made it to air on Oct. 29, 1998, missing the broadcast of the Discovery space flight by just a few hours. Equipment delays from major hardware vendors—all struggling to meet the equipment needs of stations getting ready for Nov. 1—kept engineers busy until the last minute, according to Dave Converse, the station's director of engineering.

"There were a few stations that really wanted to be on the air for John Glenn, and that was a nice thing to do," says Converse. "But I don't think that there was anyone willing to put anybody's life or limb at risk to do that." —Andrew Bowser



KNBC's 500-foot main tower (foreground) rises on Mt. Wilson.

DTV plans at a glance

Station: KABC-TV
Owner: ABC Inc.
Network Affiliation: ABC
Analog/Digital Channels: 7/53
Digital Status: On-air since late October 1998

Station: KCBS-TV
Owner: CBS Station Group
Network Affiliation: CBS
Analog/Digital Channels: 2/60
Digital Status: On-air since late October 1998

Station: KNBC
Owner: NBC TV Stations Division
Network Affiliation: NBC
Analog/Digital Channels: 4/36
Digital Status: On-air since late October 1998

Station: KTTV
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 11/65
Digital Status: Scheduled to be on-air May 1, 1999



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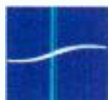
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Chicago

Lease negotiations delay two network affiliates' DTV launches

CBS was able to bring an episode of *Chicago Hope* to HDTV with little difficulty, but bringing the Chicago market into the digital era has proven difficult indeed. Lease negotiations for digital antenna sites have not been completed, creating problems for the major network affiliates. Currently, the only suitable locations for the new digital antennas are the Sears Tower and the John Hancock Center, both of which host virtually all the current NTSC antennas for Chicago.

NBC-owned WMAQ had hoped to pioneer DTV in the Windy City, with its original target date of Nov. 1, 1998. But it didn't make the deadline because the station couldn't reach an agreement with either party on a lease. The station has requested and received an extension until this November, according to FCC records.

CBS-owned WBBM is currently in negotiations for tower space, but according to Chief Engineer Chuck DeCourt, "We still plan on making the May 1 deadline." The station, which broadcasts on NTSC channel 2, was assigned channel 3 for digital and is modifying an existing batwing antenna to accommodate DTV. The modification, which includes new signal combining and filtering equipment, is only a short-term solution. "Long term, a lot of things are still up in the air."

Network officials insist that WBBM will not miss the FCC's deadline. "Those stations scheduled to be completed by May 1 will be on the air," says Bob Seidel, CBS' vice president of engineering and

advanced technology.

Meanwhile, ABC's WLS, which maintains a main and auxiliary NTSC antenna atop the Sears Tower, is looking at available openings on the west side of the structure, according to the station's engineering staff. Nevertheless, management says the DTV station will not make it on-air until sometime in the second half of 1999. "We've been in negotiations with [Sears], and we feel confident we'll have something soon," says WLS Station Manager Emily Barr.

On March 6, WFLD, Fox's O&O, became the first station to install a DTV antenna in Chicago. An Andrew TRASAR antenna was installed atop the Sears Tower and will be broadcasting the station's digital channel 31 beginning May 1, according to WFLD Vice President and Engineering Manager Dwain Schoonover. While the exact format to be transmitted has yet to be decided, the station will pass through the network feed when it's available and simulcast NTSC broadcast during non-prime-time hours.

To date, the Sears Tower has only one fully executed digital contract in hand—WFLD's—with eight more being negotiated for both digital and NTSC, according to Steve Budorick, senior vice president of Trizec Hahn and general manager for the Sears Tower. "We have delivered extremely viable options to support broadcasters' needs," Budorick notes.

One other station currently in negotiations with both Sears and Hancock for

antenna space is WGN, which has been upgrading its production facility to a serial component digital plant for the past two years. According to WGN Engineering Director Mark Drazin, the station is moving toward disk-based operations, while upgrading master controls for local broadcast along with WGN's national cable superstation, he says. New equipment includes Philips digital routers, Tektronix Profile video servers and control equipment from Leitch. The station will be able to deliver serial digital by early summer.

Chicago broadcasters did consider banding together to finance a freestanding tower. But while a community tower could be erected by 2006, broadcasters say the plan would face serious opposition from private and public sectors. Mayor Richard Daley's office would prefer that broadcasters remain at their present sites rather than build a stand-alone tower, though the city is taking a "wait-and-see" attitude toward the matter, says Bill Utter, the mayor's director of communications. Beyond that, the "Not In My Back Yard" sentiment has made finding a suitable tower site daunting, sources say.

In the end, most of the Chicago stations may end up installing digital antennas on the Sears or Hancock buildings, though they wouldn't rule out some of the more speculative projects. "What every station is doing right now, frankly, is working every angle," says WLS' Barr. "We'll have to wait and see how it all might shake out." —Andrew Bowser



Fox's WFLD is the first to install its DTV antenna atop the Sears Tower.

DTV plans at a glance

Station: WMAQ-TV
Owner: NBC TV Stations Division
Network Affiliation: NBC
Analog/Digital Channels: 5/29
Digital Status: Granted FCC extension until Nov. 1, 1999

Station: WBBM-TV
Station: CBS Station Group
Network Affiliation: CBS
Analog/Digital Channels: 2/3
Digital Status: Scheduled to be on-air by May 1, 1999

Station: WLS-TV
Station: ABC Inc.
Network Affiliation: ABC
Analog/Digital Channels: 7/52
Digital Status: Will miss May 1 deadline; on-air sometime in the latter half of 1999

Station: WFLD
Station: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 32/31
Digital Status: Scheduled to be on-air by May 1, 1999



Fox affiliate WTXF is shown here prepping its digital facility.

DTV plans at a glance

Station: WPVI-TV
Owner: ABC Inc.
Network Affiliation: ABC
Analog/Digital Channels: 6/64
Digital Status: On-air since Nov. 1, 1998

Station: WCAU
Owner: NBC TV Stations Division
Network Affiliation: NBC
Analog/Digital Channels: 10/67
Digital Status: On-air since Nov. 30, 1998

Station: KYW-TV
Owner: CBS Station Group
Network Affiliation: CBS
Analog/Digital Channels: 3/26
Digital Status: On-air since Oct. 28, 1998

Station: WTXF
Owner: O&O
Network Affiliation: Fox Television Stations Inc.
Analog/Digital Channels: 29/42
Digital Status: On-air since Oct. 27, 1998

Philadelphia

Multicultural radio station challenges city's digital TV licenses

The select few who viewed the space shuttle Discovery mission broadcast on KYW-TV in Philadelphia Oct. 29 might have picked up on one of high definition's first big glitches: The audio feed drifted away from the digital image.

Technical staffers at KYW, a CBS-owned station, who had thrown the "on" switch for the digital channel less than 24 hours earlier, took solace in one fact. "We definitely had lip-sync problems," says Jim Chase, the station's director of broadcast operations and engineering. "But fortunately most of the people were not on camera."

The problem of synchronizing digital sound to digital video—not unique to KYW—was due in part to faulty configuration of the Mitsubishi encoder as well as the encoder itself, says Chase. But several months and several iterations of software later, the lip-sync problem is only a faint memory.

"We're getting embedded audio from all over the place—from the network, from tape, from the file server," explains Chase. "It took us several weeks to set it up right."

Such last-minute glitches were not uncommon among Philadelphia's four major network affiliates, all of which agreed to the Nov. 1 deadline. But there were a few obstacles that stood in the way of the digital rollout, making the voluntary fall deadline much tighter than anyone in the Philadelphia market would have liked. One in particular has resulted in a challenge to digital licenses of all four stations.

The owners of WNWR-AM

have filed a petition with the FCC contesting the licenses, claiming the new antennas are causing signal interference. The 50,000-watt radio station promotes itself as "the only multicultural station in the Delaware Valley," running programs such as the *Voice of the Lithuanian Community*, *Wake Up to Manila* and *Radio France Internationale*.

The TV stations' digital antennas, located on an antenna farm in Roxborough, Pa., are near WNWR's transmitter and therefore, by FCC rules, have to be tested for interference with the directional AM signal. But the TV stations maintain that several sets of tests show no interference.

Construction delays on a new WPVI tower facility, which is also leased by KYW for its digital antenna, set back the testing process. The end result was that Sim Kolliner, director of engineering and operations for WCAU-TV, had to tell the FCC that the station, the last in line to test, wouldn't make the Nov. 1 digital deadline. Instead, the station went on the air at the end of the month. "The whole idea of going on early was to help the set manufacturers with Christmas 1998. So the intent of what we were all doing was still maintained," he says.

The WNWR interference issue is still unresolved. But for now, it's business as usual. James Gilbert, director of engineering for WPVI, says the toughest part of deployment is over—that is, actually getting delivery from the vendors. Notably, the station's Dielectric antenna arrived six weeks later than anticipated. As a

result, the station didn't apply power to the transmission line of the antenna system until Sunday morning, Nov. 1. "There were some very anxious moments waiting for the equipment," Gilbert says. "We got our orders in really early so we wouldn't have a delivery problem, but we did."

Despite the early on-air dates for Philadelphia's major network affiliates, there hasn't been a lot of evidence that viewership is expanding beyond a core circle of consumers. "We were off the air for three weeks at one point, and I didn't get one goddamn call," says one station executive. "I tell you, there's not a lot of viewers out there."

Some of the most ardent viewers, in fact, might be the technicians at Panasonic's nearby HDTV-equipment testing labs in Burlington, N.J. "If we're doing maintenance on our transmitter and we're not on the air, they call right away. 'Is it us or is it you?' they want to know," says Diane E. Krach, chief engineer for Fox's WTXF-TV. "It's kind of cool too, because I can call them and verify [the signal] with them. I tell them to call me if they see any problems."

Ordinary consumers, on the other hand, might not know what they are missing by not having a DTV receiver—digital video, stereo sound, and what might be described as a rudimentary "video-on-demand" program delivery system.

"People literally call up and say, 'Hey, we've got company. Can you play the Olympic tape for us?' And we do that," says Chase.

—Andrew Bowser

San Francisco

Earthquake safety lawsuit clouds digital rollout

Due to technical delays, equipment malfunctions and an ongoing legal challenge, which pits local stations against neighborhood groups, all four major network affiliates in San Francisco missed their scheduled Nov. 1 deadline last year. However, three of the four are currently on the air with an upconverted signal and network high-definition pass-through. The fourth station, KTVU, broadcast the city's annual Chinese New Year parade in HDTV in late February—with the help of a mobile production van from National Mobile Television outfitted with Sony equipment—becoming the first station in the market to originate a live local HDTV production.

The event was almost derailed by a technical gaffe. The staff stayed up late Friday night setting up the equipment to get the signal from San Francisco to the studio, which is located on the other side of the bay in Oakland. They put up test colorbars, then grabbed some cameras and shot a couple of storefronts—so far, so good. It wasn't until the next day, one hour before the parade, that they discovered their HD decoder was defective, creating jerky-jerky images of cars passing by or people walking down the street.

"Some people said it reminded them of a Charlie Chaplin movie," recalls KTVU Transmitter Supervisor Bob Hofert.

"We had another decoder in San Francisco that we were just using for monitoring," Hofert continues. "One of our engineering managers had to throw it in his car and drive

over here. We installed it just a few minutes after we got on the air, and everything was OK."

KTVU was also the first to broadcast an upconverted NTSC signal, a simulcast of the noonday news on the station's analog channel on Nov. 18, immediately after engineers flipped the switch at the 977-foot tower atop Mount Sutro. The tower hosts antennas and transmitters for 10 TV stations, four radio stations, along with an abundance of communications equipment and now three digital TV stations, with seven more to come.

CBS station KPIX was next. Though KTVU beat it to the airwaves by a matter of hours, KPIX was still able to carry the HDTV broadcast of *Chicago Hope* later that evening. "Right now, we're just basically getting the signal out there," says KPIX Chief Engineer Dave Hancock.

The NABET labor dispute last fall slowed KGO's digital rollout, but the station managed to get a digital signal to air by early December. KRON-TV, at the time, was still waiting for parts for its DTV system, notably key radio frequency (RF) components. And as of mid-March KRON was off the air for significant periods of time while it installed items needed for DTV transmission. "The equipment just wasn't ready, and the manufacturers were still developing [products]," says KRON Chief Engineer Craig Porter. "By the time the next bunch goes on in May, a lot of this stuff will be ironed out."

Sutro Tower, which is jointly owned by the four major network affiliates, has been the object of contention

for the Twin Peaks Improvement Association and the MidTown Terrace Homeowners Association. They jointly filed a lawsuit to block installation of a multi-chambered, 10-ton antenna that would serve the market's digital broadcasters.

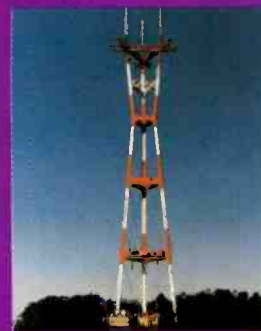
The primary concern is seismic safety. Residents fear that an earthquake would send the 1,800-ton structure crashing into nearby homes, a school and a fire station. The two groups have also raised concerns about RF radiation exposure.

Studies indicate that the tower is safe enough to withstand a "maximum credible" earthquake (8.0 in magnitude), according to General Manager Gene Zastrow. Moreover, the tower has been strengthened at key points to support the additional weight. But residents believe the initial environmental impact report for the project did not delve deeply enough into the issue of earthquake safety.

Over the past year, the groups have gone to court on five separate occasions to ask for injunctions to stop the project, but the court turned them down each time, according to Zastrow. "We haven't been stopped, and the work hasn't been impeded," he says. "But that lawsuit is still hanging out there, and in due course presumably will go to trial."

There aren't legions of viewers clamoring for a high-definition signal. But anecdotal reports suggest the gear is a hit at high-end retailers. "There are guesstimates that up to 100 people are able to get us," says KTVU's Hofert.

—Andrew Bowser



Mount Sutro tower hosts 10 analog and three digital TV stations, with more to come.

DTV plans at a glance

Station: KGO-TV
Owner: ABC Inc.
Network Affiliation: ABC
Analog/Digital Channels: 7/24
Digital Status: On-air since early December 1998

Station: KPIX-TV
Owner: CBS Station Group
Network Affiliation: CBS
Analog/Digital Channels: 5/29
Digital Status: On-air since Nov. 18, 1998

Station: KRON-TV
Owner: Chronicle Broadcasting of San Francisco Inc.
Network Affiliation: NBC
Analog/Digital Channels: 4/57
Digital Status: On-air since late December 1998

Station: KTVU-TV
Owner: Cox Enterprises
Network Affiliation: Fox
Analog/Digital Channels: 2/56
Digital Status: On-air since Nov. 18, 1998

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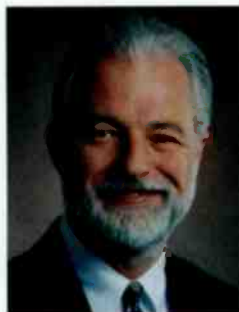
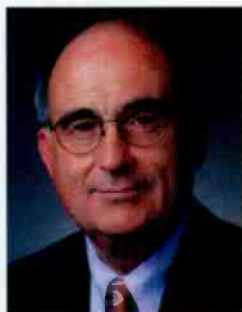
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Cited for Lifetime Achievement

Broadcasting & Cable, Digital Television single out four media leaders for roles in advancing electronic communications media

The 1999 *Digital Television Pioneer Awards*, presented by *Broadcasting & Cable* and *Digital Television* magazines, will be awarded during the *National Association of Broadcasters* convention to three executives representing major segments of the electronic communications industries:

6 To James Chiddix of Time Warner Cable, for his leadership in building out digital capacity in the cable medium and bringing the Time Warner systems to a state of digital readiness, and in the process setting an example for the cable industry at large.

14 To James Goodmon of WRAL-DT (HD) Raleigh, NC, for his leadership in bringing the first U.S. digital station to the air, and for the role models he and that station have become in encouraging others in the

broadcasting industry to tackle the HDTV challenge.

20 To Eddy Hartenstein of DirecTV for creating the first digital TV medium and for committing its resources to make HDTV signals available to viewers nationwide, helping jump-start dealer sales of first-generation DTV sets to consumers.

26 Additionally, the two industry magazines will present a lifetime achievement award to Charles Steinberg of Sony, in recognition of his many contributions to electronic technology during a professional lifetime.

This supplement not only recognizes their pioneering, but also presents their views on the developing television universe through interviews with editors of the *Broadcasting & Cable Group*.



The Digital Television Pioneer Award was first given by *Broadcasting & Cable* and *Digital Television* at the 1998 NAB convention to Joseph A. Flaherty of CBS, considered by many the father of HDTV.

All four awards will be presented on Monday, April 19, during a reception at Las Vegas's Bellagio Hotel, before an invited audience of delegates attending the NAB convention.



Charles Steinberg, SONY Electronics, Inc.

Lifetime Achievement Award

James Chiddix, Time Warner Cable

Digital Pioneer Award

James Goodman, Capitol Broadcasting Co.

Digital Pioneer Award

Eddy Hartenstein, DirecTV, Inc.

Digital Pioneer Award

CONGRATULATIONS ON CHARTING THE COURSE OF DIGITAL TELEVISION.





JIM CHIDDIX

Digital's Downfield Blocker in Cable

Jim Chiddix started his cable career in Hawaii and it's been uphill from there. As chief technical officer of Time Warner Cable he has built out the optical fiber backbone that helped position that medium as a digital powerhouse. And that's only the beginning.

How did you get your start?

Chiddix: I quit school during my senior year at Cornell to go to Hawaii to work on a sailboat. I ended up staying 15 years. That's when I got into cable, with what was then ATC. I was the chief engineer. The sailboat venture went bankrupt almost immediately and I had to get a real job. I was living in rural Oahu, and somebody at the boat harbor told me that the cable company was looking for somebody to fix TV sets. I'd been a ham radio guy, and I was in engineering school, and I was in electronics in the Army, and I wanted to stay in Hawaii, so I went after and got the job.

The cable system was in a poor part of rural Oahu. People didn't have TV sets, so we rented them sets for eight bucks a month and then sold them cable for eight bucks a month. I got to fix all the TV sets. And the industry—we had 2,000-some subscribers—has grown ever since. That was a fascinating ride.

Why did you leave Hawaii?

Chiddix: ATC offered me a mainland job at headquarters in Denver. My wife and I went out to the beach and sort of agonized about it and made lists of pros and cons and decided to take it.

Was that a mistake?

Chiddix: No, I've never regretted it. It was wonderful and we'll always go back there. I helped build one of the first receive-only satellite earth stations in Hawaii. It was this big Scientific-Atlanta 33-foot dish that we built in a little valley. It was like believing in magic. We began cranking it back and forth across the sky looking for signals, and for hours we didn't find any. Finally this basketball game came out of the snow. Wow. It was the wrong satellite, but it led us to the right one.

That was Turner's ch. 17 in Atlanta. People in Hawaii had never seen live television before. The news would come in on two-inch videotapes; you'd see them on the luggage carousel late at night at the airport. When we put on Turner it was really a sensation. Our system had been on the verge of bankruptcy because people could get decent reception from the transmitting towers on top of the hotel in Waikiki. This dish was a fairly desperate attempt to get something that people would buy in total. We had pay TV and we brought in videotapes, but we turned the corner when we launched that service, at least for the urban market in Hawaii.

What have you learned about cable or what has cable taught you about television?

Chiddix: Everything. It's hard to sum up, but it's been an education on a zillion fronts.

Does it tell you it's a superior system to over the air?

Chiddix: Oh, sure. I think about cable as a private radio universe. Inside the coaxial cable we have use of all the frequencies from the shortwave radio band up to the bottom end of microwave. Instead of asking the FCC where do you want to auction the frequencies, we just sort of use them for whatever we want. It's a very powerful idea. From 5 MHz up to ch. 2 we have the return channels going upstream through the same coaxial cable through which everything else is going downstream. The rest we just sort of divvy up however we want. Our channels aren't quite twice as wide as broadcast but cable is a much more controlled environment. We don't have the ghosting and the noise out on the fringes, so we have better signal to noise. So we can use less robust kinds of modulation that can get more bits in the same bundle. For example, we can get 38 megabits per second in 6 MHz instead of in 19, which is the modulation called for in broadcasting.

So those are some of our strengths, but our real strength is having essentially infinite capacity. The thing that I'm proudest of is having led a team at ATC that first demonstrated how to use fiber cost-effectively to reconfigure cable systems, to run a piece of fiber out to a neighborhood of a few hundred homes, then convert from light back to radio waves on a little box and a pull, and then use the existing coax to get to those 500 homes. What that let us do was build a much better cable system, much more reliable with much lower noise. It also let us get direct access to very small groups of homes with the potential of sending them different feeds, individual TV channels. We now have the capacity to send a different television channel, a different digital television channel, to every home in America. That's video on demand, which we tried in Orlando a few years ago.

Is this a multiplication of your capacity?

Chiddix: Yes. We multiple it by reusing the same channels to different neighborhoods. We can deliver several hundred broadcast channels—including HD channels and digital channels and analog channels—everywhere in the community. At the same time, we can provide individual channels for soap operas on demand or whatever it is people want, then use another frequency for another channel for your modem



"We now have the capacity to send a different television channel, a different digital television channel, to every home in America. That's video on demand."



"Right now we buy programming from our programming vendors, and some day we may buy programming from broadcasters. Who knows?"

service, another frequency for another channel for your telephone service, all on the same cable.

Is that a digital initiative?

Chiddix: No. It's a way of using fiber optics to move the whole radio spectrum for 10 miles with no electronics in between. And then very cheaply hit a photo transistor and convert it back to the radio spectrum so we can send it through coax. It doesn't matter whether within that spectrum we've got some analog signals and some digital signals.

Can you go fiber optic to the home?

Chiddix: You can, but it's real expensive, and it's not clear what benefit it brings.

How many channels can you get to the home with coax?

Chiddix: In Queens we delivered a one gigahertz spectrum. That was 150 analog channels. Now in digital channels, that could have been 500, 600 or 700 channels. We can deliver 14 standard-definition channels in 6 MHz. So, 14 times 150 is a big number—it's close to 2,000 digital channels. And that's not the way we'd use it. One of our strengths is that we can send an analog tier—80 channels of analog—for the next 10 years to every room in your home so you can just plug it into your TV, without any box. That's in addition to the modem service and the phone service and all the rest. So the two big technology breakthroughs in our industry have been this broadband use of fiber and cheap digital technologies.

What's the distinction between the fiber optic buildout and the digital buildout?

Chiddix: They're different. You can do digital without fiber but you don't have enough capacity to do very much. TCI rolled out digital without having done fiber. They were able to add a few channels of not very good digital stuff, and that was their initial response to the satellite threat. I don't think it was a very good strategy. It was a brilliant strategy of selling themselves to AT&T. That's what John Malone is good at. He's not a very good cable operator but he's a genius at financial stuff.

But they've since upgraded.

Chiddix: No, they're just beginning to upgrade. TCI is way behind. AT&T is going to pour billions of dollars into upgrading. But I'm sure that will happen.

But they're going to get half of their telephony from Time Warner Cable.

Chiddix: Yes.

DTV: Is it possible to quantify what you think your digital future is going to be?

Chiddix: Oh, 80 percent. Digital is now the plumbing system. This fiber coax plumbing system is about done. Most of what I do now is looking over the horizon to how we're going to be involved in digital technologies of one kind or another. I'm mostly a plumber. I'm in the delivery business. Digital programming will take care of itself. I mean, cable's in the aggregation and packaging and marketing and sales and billing business for all that. We aren't directly programmers per se. We buy or get programming from other people who are programmers. Take the CBS deal, for example. We didn't care whether they deliver us 1080i or 720p or 480i signals. To us, it's just programming. We assume it's going to have value. CBS is going to do a good job and it's going to have value for our subscribers. Right now we buy programming from our programming vendors, and some day we may buy programming from broadcasters. Who knows? We're going to try it out for five or six years and we're not going to pay them because it's such a fledgling thing right now, it doesn't make much sense for us to pay them or for them to pay us. There's a mutual interest in getting going here, and that was sort of the spirit of the CBS deal. After that we'll sit down and figure it out again.

Do you think both parties will be there?

Chiddix: Sure ... we'll both be there in some form. We have no current plans to change our form. But you shouldn't assume anything.

You said that the buildout has essentially been done. Does that suggest that you're not going to build out again? That 750 MHz is going to carry you.

Chiddix: There are various ways we can use that spectrum but, assuming we keep carrying an 80-channel analog tier, in addition to 78 channels of analog at 550, we can carry 140 channels of digital SDTV, 24 channels of HDTV, two 6 MHz channels of modem service, telephony service and video on demand to every home that has a digital box. We'll still have some spectrum left over. And, if we run out of spectrum at that point, we've got spare fibers to each neighborhood of 500 homes and we can divide them into smaller neighborhoods of 250 and 125 homes. Yes, 750 will carry us a long, long way. Now, at

**JIM CHIDDIX
DOESN'T WEAR
A COONSKIN CAP**

But a pioneer he is.
A technical innovator and
30-year cable veteran,
Jim continues to be a trailblazer
in fiber optics
and digital television technology.

Congratulations, Jim, on your Digital Pioneer Award.

TIME WARNER





Digital Television Pioneers

"If you look out 20 years, you can certainly envision fiber in the home or very close to it. But the transition isn't clear and the point at which you make that big capital investment isn't clear."

some point, we can start shrinking the analog tier because we'll have so many digital TV sets and boxes out there that we can start to back off on analog, make it a much more basic service, and recapture that spectrum for digital.

There are other things out there. Maybe HDTV video on demand will come. That will require some serious spectrum. Maybe full-motion holography will come. I mean, who knows. And, if we need to, we can go back and we can push beyond 750 to a gigahertz or even higher in the coax we already have in place—without changing anything except the electronics.

You know, fiber is going to get cheaper and cheaper. And, pushing fiber deeper and deeper will make sense over the long run. If you look out 20 years, you can certainly envision fiber in the home or very close to it. But the transition isn't clear and the point at which you make that big capital investment isn't clear. At some point the phone company is going to have to decide what to do. I mean, they don't have available to them a nice neat revolutionary strategy. It seems like they're going to have to take a big plunge, a big risky plunge, and that's contrary to their cultural background. But eventually they'll have to do that.

How do you really feel about HDTV?

Chiddix: HDTV is a real bandwidth hog. That's good. Cable is bandwidth. We have a huge amount by comparison with any of our competitors. So HDTV really plays to our strengths. The missing element, of course, is consumer demand, and that's going to be fueled by big, inexpensive displays and product. Well, the display part we can't fix. The product part we can. That's why we were proactive in getting the retransmission consent deal with CBS and why we're working on other deals. That's why we've been proactive in getting HBO up on HDTV. We'd like to see a future in which we carry dozens of high value HDTV signals. And, we're certainly going to carry a lot of digital cable—a hundred or more signals very soon. In fact, we're rolling out boxes now in several markets. So, we just hope to help jump start this.

Are you participating in the discussions for interoperability and the firewire, and do you think that's going to happen this year?

Chiddix: I hope so. We've had lots of activity in the technical and standards groups. Initially, we're carrying HDTV in a horribly inefficient way, as unencrypted VSB. That's purely a stop-

gap, but in the absence of other delivery systems, at least it works. The right way for us to carry it is compressed and coded as 256 QAM, which gives us two HD signals in every 6 MHz channel. What's more, we can then carry them on the cable TV channel assignments instead of the UHF channel assignments, which, for historical reasons, don't match.

That doubles your capacity in HD, and gives you twice as many channels as broadcasters in the same bandwidth.

Chiddix: Right. What's more, it lets us control who watches the service. That's not a problem for CBS, but it is a problem for HBO. We're hoping to get some HD digital set-top boxes from Scientific-Atlanta and put them into one of our markets and begin to carry the HBO signal that way.

Will they be the first HD set-top boxes?

Chiddix: The first ones I know of—that is, cable HD set-top boxes. This will be a special version of the SA digital box of which we're taking delivery in the hundreds of thousands.

Why has it taken so long to get HD into a set-top box when the whole industry knew that HD had been coming for the last nine years? Certainly for the last four.

Chiddix: HD's been coming for more than nine years—more like 10 or 11 years. Getting boxes that deliver HD has been a matter of getting access to the right chip sets to do the HDTV compression. And having assurance that there were going to be TV sets out there; like the rest of the world, we've been waiting to see if this really begins to take off. The initial boxes are hand-made, very expensive prototypes. Now that it's beginning, we're trying to help all we can. The TV sets that are being built are not very cable friendly.

They don't have a QAM input.

Chiddix: Right. They can't even tune the cable channels.

Isn't that because cable never set the standard for QAM?

Chiddix: We announced years ago that we were going to carry QAM and we set the standard for QAM modulation. The TV manufacturers could have built QAM demodulators into their first digital sets, and they could have made in-tune cable channels. They didn't. To be fair, what wasn't set was the way in which we would de-encrypt our encrypted signals in a TV set, even though we've been talking about that for a long time. But that

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Digital Television Pioneers

"This is a very gradual thing. Remember, the only thing that will drive this are big, cheap displays. With a little display, you can't tell the difference."

standard is now getting very close to being real. This is the removable security standard.

Is that the copyright protection standard?

Chiddix: That's part of it. This is the standard for a little module that we would own and plug into a digital cable-ready television set. It contains the key delivery system so we can send the decryption keys to that set. It contains the encryption engine. And, it contains the circuitry to provide copyright protection across the interface, so you can't just pick off the encrypted signal as it goes from the module back into the TV set. It requires that the manufacturer has the right plug-on. None of those sets yet exist.

With the huge installed base of TV sets, we couldn't introduce new services if we had to wait for new TV sets to come along. It's been a huge capital burden for us to carry. Our hope is that the customers will go out and buy TV sets with their money that just work on cable, but that requires that we be able to protect our product. Still, we think there's a win-win thing here for consumers. They can buy what they want, get whatever features they want at the store, including features that are based on network services. They go out and buy a TV set with whatever features they want, they pay for it, they bring it home, maybe the salesman gives them one of our modules, maybe we mail them a module, maybe we bring them a module. Plug the module in, authorize the services they want, and it works. It's less capital for us. That's a win. It's a new kind of feature set for the consumer guys to build themselves—a win for them. The consumer gets something that isn't confusing and just works. That's the dream.

This is an opportunity the industry missed in the analog days, and it would be tragic for us to miss again. In analog world, first of all, we've used proprietary technology. So, once New York City put in the first GI box, we were married to GI forever. Terrible. We had no competition on the supply side. Second, we were putting boxes in people's homes and they couldn't watch something and record something else, and they were very frustrated customers.

And the consumer electronics industry kept trying to put in features that made certain assumptions about the cable system that weren't always correct. They'd sell cable-ready sets that weren't. It was just a mess. And, if we're not careful, that will happen again. The opportunity is here to set standards so that, first of all, we aren't stuck with GI. Anybody can make this stuff and sell it to us

or the consumer. We protect our product with a good encryption system and if it gets broken, we can just change the little cards.

That sounds worse than I thought, in terms of getting this market moving. We once hoped it would happen at Christmas 1998. Then we moved the target to Christmas 1999. Now it's Christmas 2000. Now you're suggesting not only that the industries are still far apart but you want to effect a basic change in the whole consumer electronics system. Will that take another two years?

Chiddix: It won't take another two years. It depends on what stage you're talking about. This is a very gradual thing. Remember, the only thing that will drive this are big, cheap displays. With a little display, you can't tell the difference.

What do you call cheap? \$2,000? \$1,000?

Chiddix: Somewhere in that neighborhood. It may take another year to get those modules that would plug in. In the interim we're going to have set-top boxes. We're going to do whatever we have to do to carry HD. Sure, it would be nice if we could build a magic wand and have a big, cheap TV. But that just isn't how it works. These are very sophisticated digital technologies, and it takes a year to get sophisticated silicon to market.

This says to me that we had this decade-long process to get the spectrum set aside and get all the specs up and get 18 formats established. And only now have we started paying attention to the actual set. And that process may take years.

Chiddix: You know how cynical a process this has been—the spectrum grab, keeping the two-way radio guys out of UHF. The consumer has never been consulted on this, until now, and so far [the reaction is] ho-hum. So the FCC's been posturing and Congress has been posturing and the industries have been posturing. Now, cable, at least our company, has woken up and said: "Gee, this may be cynical, but it wouldn't be a bad thing if the consumers love it. We'll carry it because we can carry a lot of it. But, we still don't know if this is ever going to take off. What we do know is that digital is going to take off, because we're going to carry hundreds of channels of it, and DBS is carrying hundreds of channels of it. That's digital standard-definition television. So, you know, I don't think that anybody should be surprised if this thing is not catching fire. Because the only way it's going to catch on fire is when customers clamor for it.

—Interviewed by Don West

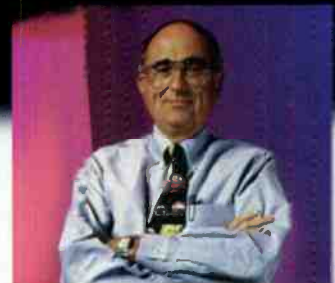
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The employees of Capitol Broadcasting Company salute all the winners of the Digital Television Pioneer Awards. We are especially proud to be a part of this defining moment in broadcast history under the leadership of Jim Goodmon, President and CEO of Capitol Broadcasting Company, Inc. Through the production of local documentaries, such as "The Cape Light," and dozens of other special programs, we've had the opportunity to work first hand with television of the future. Thanks to all the engineers, executives and visionaries who are making the future happen TODAY.

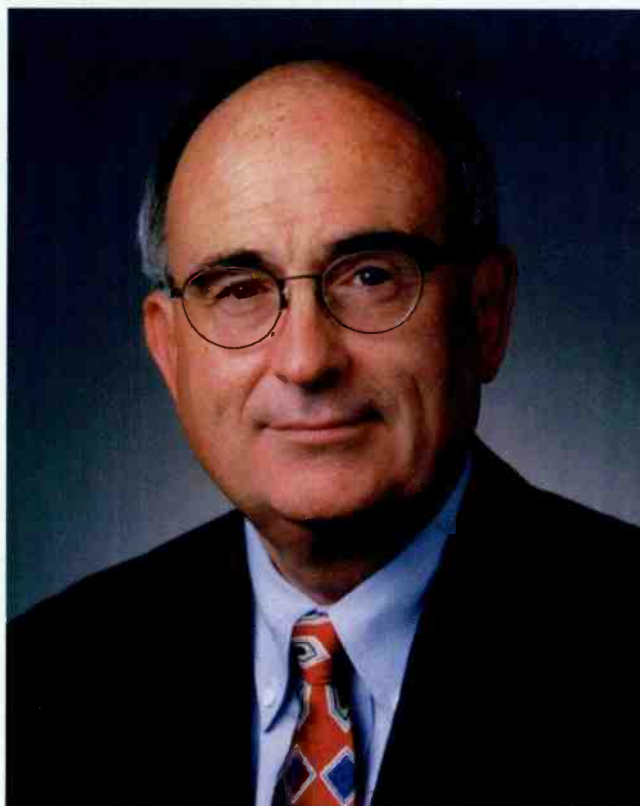


**DT Pioneer Award winner,
Jim Goodmon**

President & CEO of Capitol Broadcasting Company, Inc.

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JIM GOODMAN

HDTV's No. 1: WRAL-TV's Goodman

Jim Goodman's career in broadcasting began in 1968 when he joined the Capitol Broadcasting Co. as operations manager of WRAL-TV Raleigh, NC. A 1965 graduate of Duke University, Goodman joined the station after serving three years in the United States Navy. By 1979 he had risen up through the ranks to become president/CEO of Capitol Broadcasting, a position he has held ever since.



It was another eight years before Goodmon would take his first step in a journey that led to his receiving *Broadcasting & Cable's* and *Digital Television's* Digital Pioneer award.

In 1987, Goodmon and WRAL-TV's John Greene (now Capitol's vice president of special projects) visited Washington to see a demonstration by NHK of the Japanese Muse HDTV broadcast system. But it wasn't until June 1996, when WRAL-TV became the first U.S. television station to be granted an experimental license for HDTV that Goodmon, Greene and the others at WRAL-TV and WRAL-DT earned leadership status.

In the three years since the station was granted the license, Goodmon has been one of the leading advocates of HDTV and its benefits to broadcasters.

Can you tell us about the early experiences with digital and HDTV that made you decide this was something you wanted to pursue at WRAL?

Goodmon: In 1987 John Greene and I saw a demonstration in Congress of HDTV. NHK was showing the Japanese Muse system and we had been thinking about HD for a good while. Also, we were thinking about the need to lead, follow or get out of the way, and I love the lead part.

We also knew that CBS, and particularly Joe Flaherty, had been very instrumental in the HDTV process. We were up for contract renewal of our affiliation agreement, and as part of that agreement CBS decided to provide HDTV engineering and consulting services to us. We got some good help from Harris for the transmitter, Andrew for the antenna, got together with Joe Flaherty and Bob Seidel and said: "Let's get this thing on the air."

What was the business motivation? It seems that many broadcasters consider DTV and HDTV to be nothing but a burden.

Goodmon: If you take a long view and divide the world into broadcasting, cable and DBS, it seems to me that if cable came up with an HDTV standard and DBS came up with one, then traditional broadcasters would be out of business and unable to compete. So I had a great deal of enthusiasm and appreciation for the FCC concept of a digital standard and the work they did to get that done and broadcast in a 6 MHz channel.

It is initially an extra cost and it will take some time and work to get going fully, but to me it's the most important thing the FCC ever did for broadcasting. I think we would be in bad shape in 10 or 15 years if there were a number of HDTV standards and we were unable to broadcast them.

I've taken the view that this is beneficial to us, that it's not a burden. I understand people saying it's going to cost money, but in the long run we'll be out of business if we don't do this. It's not unusual for an industry to retool, to change to be more competitive. This is an opportunity, not a problem. This is not something we're mad and moaning about. It's a real opportunity to improve ratings, revenue and profits.

WRAL has been a very strong proponent of broadcasting a single HDTV channel.

Goodmon: When HDTV first came around I had no idea of the multicasting concept. But my view is that the future of local broadcasting is in increasing the ratings on the stations we have, not fragmenting it by adding 6,000 more TV stations. I think we need to get as high a quality as often as we can.

That's the nature of the business. Also, I was on the Gore commission which was put together to answer what the public interest responsibilities should be of digital broadcasters. It was a very interesting panel and I think that if broadcasters take these digital channels and start multicasting then Congress is going to take a different view of these



Digital Television Pioneers

"I think stations are responsible for public education, working with retailers, and we need to go to widescreen as soon as possible on news. We may even go widescreen before going to HDTV."

licenses they gave us for free. They're looking to see how broadcasters step up to use the additional spectrum.

There are probably some good reasons to multicast during certain times—say news, for instance or special events. But not full time.

Do you think focusing on one HDTV channel makes the business plan easier to draw up because you don't have to figure out how to program multiple channels?

Goodmon: Yes I do. It's a lot easier to say "this is my horse and I'm gonna ride it" and off you go. It seems to me that the key is to get viewers to get antennas because we don't know what's going to happen with cable. And the best way to get people to buy antennas is to give them HDTV programming, not an extra channel of home shopping. What we need to do as an industry is get people to buy these antennas and sets. And the reason they're going to do that is because we're offering unique programming, not just shifting programming.

What else needs to be done beyond getting antennas into viewers hands?

Goodmon: We have to do two more things. One is measure the signal to see what that's all about, and we've started that.

Another thing we need to do is work with the retailers to help them sell TV sets. We have spots for the retailers that have sets for sale, we have an antenna giveaway we're going to start in the fall and we've been working with Channelmaster which has come up with an outdoor antenna design that we'll introduce when we give them away.

We're also working on HDTV programming—creating it and acquiring it. We've shot travel footage all over the state—football, baseball—and there are three or four of us at the station who, at the drop of the hat, will make a presentation on HDTV at civic meetings, trade shows, etc. We've tried to cover the waterfront.

Do you have any advice for those stations that haven't yet begun DTV and HDTV transmission?

Goodmon: DTV and HDTV are very difficult to explain to the consumer. So my first advice is to start talking about it on the air right now: What is DTV? What is HDTV? Let the viewers understand it and know where the local retailers are so they can see it. For example, we went through a period of people calling it high-density television and thinking that DTV

means HDTV. You need a careful and planned explanation of what this is.

The other thing broadcasters need to do is work with the retailers to help their salespeople explain to customers what's going on. This is going to be difficult. We've heard explanations from retailers that have nothing to do with what's really going on. The retailer and salespeople need to understand the two channels and the set-tops.

Finally, they need to get our networks to do programming.

What do you hear going on in that area?

Goodmon: We've been happy with CBS. They did four football games, a movie and a couple of other shows, so they're ramping up. But we'd like to see an hour or two of prime time starting this November.

How much programming do you think is needed to get the viewer to really become interested in HDTV?

Goodmon: The key is regular programming—you need an hour or two every night and then roll that up to full prime. Next is sports programming and then you can eventually do everything in HDTV. This year, for example, I think the NCAA men's college basketball championship game between Duke and UConn should have been done in HDTV. And the Masters in HDTV would be even better than being there.

What do you see as the responsibilities of the networks and individual stations to making this happen? We've heard from some networks that they'll do HDTV when there is an audience.

Goodmon: The networks have a responsibility to the industry to lead the way. And that means doing major events as soon as possible in HDTV. We're not going to sell the sets until that happens.

I think stations are responsible for public education, working with retailers, and we need to go to widescreen as soon as possible on news. We may even go widescreen before going to HDTV. But to me, everyone has to step up to make this work. We've got to get people to buy HDTV sets and the way you do that is with programming.

The network executives have got to sit down and watch HDTV programming for two or three days and then I think they'll want to do it. There may be another model in daytime, but unless we want to run two stations at once for a long time we need to do prime time in HDTV.

WHERE WOULD TELEVISION BE WITHOUT ITS VISIONARIES?



Congratulations to this year's Digital Pioneer Award winners
who've propelled television into the 21st century.





Digital Television Pioneers

"This is a government orchestrated change in technology for the country. In order to make this successful, cable has got to be part of that mandated changeover."

Are you dismayed by how things are shaping up with consumer set problems and the cable industry issues?

Goodmon: I'm seeing what I expected to see. We have manufacturers coming out with sets that have different bugs, and the next generation will be better.

Stations are getting the tower thing worked out. Prices are coming down, programming is beginning and stations are coming on the air. The big key, however, is network programming.

What are your thoughts on the cable industry's less-than-enthusiastic embracing of HDTV and DTV?

Goodmon: Our own view is: Don't count on DBS or cable—rely on the antenna. One thing that CBS has done is work out its carriage deal with Time Warner, but there are plenty of areas that won't have deals. We support must carry and think we need it during the transition period.

This is a government orchestrated change in technology for the country. In order to make this successful, cable has got to be part of that mandated changeover.

But the cable industry says they shouldn't have to take on the cost of the changeover if their viewers don't want it.

Goodmon: Well that's because the customers haven't seen it yet. I'm hoping there will be competition between DBS and cable. I'm hoping that competition will push them both along to doing HDTV. It's in everyone's best interest to get the transition done. Let's get all the stations on, let's push digital and then turn off the analog. They are prolonging the transition which really gives them more problems than just going on with it.

So in your view the move to DTV and HDTV will ensure the future of broadcast television?

Goodmon: I'm very sincere when I say this is the most important thing the FCC has ever done for local television. They allowed us to be competitive, from a technology point of view, for the next 50 years. We could've been like black and white. Now, I don't like having 18 different formats on the ATSC table, but I understand the reasoning and I'll work with it.

—Interviewed by Ken Kerschbaumer

It is with great pleasure that we extend our heartiest congratulations to these four extraordinary leaders:

James A Chiddex, James F. Goodmon,

Eddy W. Hartenstein & Charles A. Steinberg

We are delighted to join the industry in recognizing their vision and honoring their commitment.

Panasonic

We are proud to salute

JIM GOODMAN

President/CEO, Capitol Broadcasting Co.

for his outstanding
contributions to the advancement
of digital television.

TELEREP



EDDY HARTENSTEIN

First and Foremost in Digital

Eddy Hartenstein's DirecTV started out as a digital medium covering all the country in one bound, and he/it can see 10 percent penetration in their sights. Now they're leading the way with high-definition digital, giving many consumers their first experience with the new medium.



A t what point in your life did you consider yourself a broadcaster?

Hartenstein: I decided when I was a junior in high school that I wanted to study something as close as I could find to the development of space commerce. The place that I could afford was California State University in Pomona, which had a curriculum in aerospace engineering. So that's where I decided to go, and where I studied mathematics, also, and then went on to grad school at Cal Tech and got my first job at what was then called Hughes Aircraft Co., back in 1972.

Specifically, I went to work on the systems engineering of spacecraft, satellites, and I've pretty much always been involved in that in some way, shape or form for my entire career. I left and worked at NASA's Jet Propulsion Lab for a couple of years and then came back when we founded Hughes Communications, which sort of privatized the sale and ownership of transponder capacity per se.

And while we were helping facilitate companies in spreading and distributing their programming, I certainly don't think I was a broadcaster then. I did an interim stint in the mid-'80s with a company called Equatorial, which ultimately was sold to GTE, which allowed companies, through multiple locations around the country, if not around the world, to broadcast their own closed circuit TV broadcasts for business purposes. And then, in the 1989 time frame, I came back to Hughes Communications at yet another level, to take hold of this project that we had called DBS. You know, the B in DBS is "broadcast," and at that time I knew we were sort of in the broadcast business. We were sending signals, although we didn't then and don't today create a lot of original content. But we certainly provide what would have to be described as a broadcast service to homes all over the world now.

So that's one way of being a broadcaster, but one that's completely new in the context of the traditional broadcaster. I think the role or the definition of broadcaster is changing right before our eyes as they utilize this new digital spectrum and figure out what they want to do with it. We're at the brink of a very exciting time evolutionally in the broadcast paradigm, and there are a whole host of things that I think can be brought to people to enhance not just the visual senses of broadcasting, but to enhance the richness of the information content as well.

Do you consider yourself an engineer?

Hartenstein: That's where I got a fair amount of my secondary education. I certainly don't consider myself an engineer today. I'm not trying to disown my academic underpinnings there, but I certainly don't practice engineering any more, and haven't for a long time.

What are the key elements that will kick us into that new game you spoke of?

Hartenstein: We're providing 200 channels today and it's not a huge stretch of the imagination that in the next few years we can double that number. From the perspective of the folks that create the programming, you can do things, in terms of high definition and enhanced audio, to bring a whole set of information in parallel with the entertainment video content that can present itself or manifest itself on the screen with a few additional key strokes of the remote.

Take something as simple as the Weather Channel, today's best example of data-enhanced broadcasting. You'll be able to turn to a version of the Weather Channel that not only gives you the weather as it does today, but with a couple of keystrokes will give you the current conditions and five-day forecasts in hundreds of other cities. I mean, it is tremendously exciting.

Is this capability going to be available to the terrestrial broadcaster as we know him now? Or is it going to be more the video universe, or satellite, or the cable industry and other broadband providers, including the Internet?

Hartenstein: Not only will it be available to us, it's in the prototype boxes that we have coming out for the third and fourth quarters, so we know it's going to happen. There's no reason technologically why it couldn't also happen for cable. They're probably behind where we are in terms of bringing it to market. As for broadcasters, with their new digital spectrum, there's no reason that they, too, could not take advantage of these kinds of content features. You know, the television audience per se here in the United States is not dramatically changing in terms of number of television households and all that. So I think they will have to do things like that to reclaim the share they've lost.

What will your new generation of set-tops be capable of? How many channels, what facilities that we don't now enjoy?

Hartenstein: They'll be capable of 400 to 500 channels of entertainment.

"We're providing 200 channels today and it's not a huge stretch of the imagination that in the next few years we can double that number."



Do you have that much transponder capacity?

Hartenstein: We will when we complete the USSB and the Primestar contracts. We'll be ready to deliver that many channels

and we'll be able to deliver some of the interactive services that I indicated, like the Weather Channel.

We'll have what amounts to an enabling platform. We'll even have some higher-end capability that will have 10 to 20 hours of storage capacity in terms of marrying a hard drive to a set-top box. We're talking price points in the \$300 to \$400 range for some of these demand-feature set tops.

Where does high definition fit into all of this?

Hartenstein: We're providing two channels today and my guess would be three to four channels by year end. I would expect that to grow proportionally as the HD programming becomes available.

What about your capacity for carrying local television signals on a national basis? Will you be able to do that with your new capacity?

Hartenstein: There's basically not enough spectrum at one or even two locations, even if they were fairly adjacent, to do all that. If you merely take the number of channels that exist—over 1,600—and if you assume that a certain number will multiplex, that is a huge number. You come out with close to 8,000 potential signals. I think you have to face reality at some point and say: "You know what? There aren't enough satellites and there isn't enough spectrum to do all that."

Do you have an idea of how you would use capacity of 400 or 500 channels?

Hartenstein: If you just put up a bunch of additional pure video play services you can quickly get to the 400-channel number. If, on the other hand, you're looking at putting up local channels in a number of markets, you chew up those extra signals pretty quickly.

I mean, you can do four feeds from each of 25 markets and basically exhaust your capacity today. You would need to go to a more exotic frequency-use scheme to get more channels into more markets, but even at the end of the day, the limiting factor will be your bandwidth, because you only can press things so far before you totally corrupt the picture quality.

What kind of a competitor is the Internet going to turn out to be?

Hartenstein: Let's not forget what the televi-

sion household penetration is versus PCs, and let's not underestimate the level of simplicity and the familiarity that a television set has in 100 percent of the households of America versus the number of PC households.

But the PC households are growing, suddenly. Up from 35 percent to 50 percent or more.

Hartenstein: They're getting there.

And the Internet is growing at 60,000 connections a day. I've always thought that the Internet would be connected with the rest of the digital world—with over the air, with cable and with you. That there would be a level playing field of digital providers.

Hartenstein: I think there will be. The question then is what will be the portal of choice, and what services can you get? We believe that even in the PC homes, the average time spent in front of the PC screen is a fraction of the time spent in front of the television set, and to the extent that we can bring more and more content and functionality that was heretofore only available on the PC, and to bring that up in a simple to use, simple to understand, easy to present format on the portal where the average number of hours per day of utilizing that portal is seven to eight hours, that's the way to go.

What do you think the portal of choice will be?

Hartenstein: Provided that we could make the television set more information rich with the kind of content that's coming on the PC, and given people's propensity to gravitate toward the television set naturally, we obviously think it's going to be the television set.

I misunderstood you. I thought the portal of choice was going to be either cable or satellite or terrestrial TV or something else. In your view the portal is not the medium.

Hartenstein: I don't think people think consciously about where their television is coming from—cable, off-air or satellite—as much as about which is going to give them the most choice. Which is going to give them the highest quality, the best value? And if that happens to come from satellites, then it manifests itself on the television set, on the screen.

I suggest the portal is a combination of how big it is and how you use it to win over the consumer preference for its utilization, and a lot of things tie in with that, in terms of where you get your ad revenue from and where you end up ultimately finding the greatest viewership.

"I don't think people think consciously about where their television is coming from—cable, off-air or satellite—as much as about which is going to give them the most choice."

congratulations

TO THIS YEAR'S DIGITAL PIONEERS

Eddy W. **HARTENSTEIN**

president • director, inc.

James F. **GOODMAN**

president & ceo • capital broadcasting co.

James **CHIDDIX**

chief technology officer • time warner cable



**U.S. Satellite
Broadcasting**



How big does your business have to grow in terms of reaching profitability?

Hartenstein: This is the year that everyone's looking for us to at least break even. But be sure that you

understand that the only reason we weren't profitable last year, or that we're just approaching break-even this year, is that we're not throttling back. During the months of January, February and March we added subscribers at a higher rate than we ever have in our short history. The cost of acquiring those subscribers is the only reason that we have yet to break even. We see it as a relatively easy decision, given the enormous value you create from having subs that generate cash flow and earnings streams.

What number goes with that record, or with these new records that you're setting?

Hartenstein: We ended 1998 with about 4.45 million subs. It was the third year that we've added a million or more new subscribers. I think [Wall] Street expects us to achieve that, or slightly better, again this year. And that's not counting the subscribers that we transfer over from Primestar.

That deal isn't closed yet, but we expect to migrate 1.6 million or 1.7 million new sub-

scribers over a 24-month period. So just doing the simple math, you get into the 9 million subscriber range by 2000.

Amazing. You mentioned a doubling of channels. At what point do you run into the wall of diminishing returns?

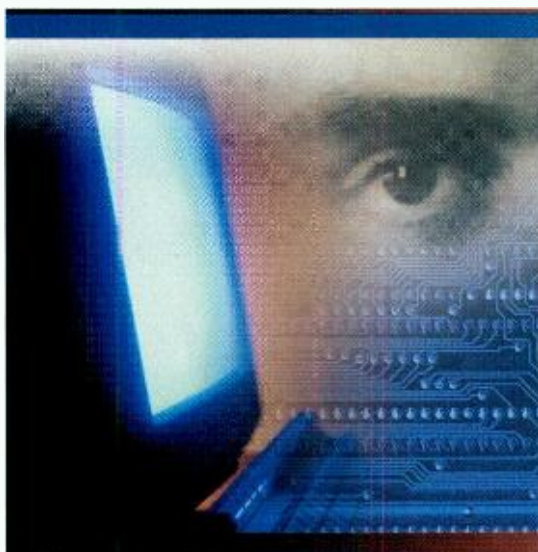
Hartenstein: I wouldn't say that we'll necessarily put all that channel capacity into a viewable screen. Those are 200 equivalent channels. To the extent that you add high-definition channels to the mix, those take off disproportionately more bandwidth than a channel of the kind we have today.

So we have yet to see a point of diminishing returns, and I have absolutely no lack of faith whatsoever that the content providers, are going to find new and interesting things to deliver. You know, intuitively that there is a point of no return, but subscribers to our service have found ways to navigate around, and know how to get what they want when they want it on a 200-channel system, and we have constant suggestions about, "Gee, I wish you had a channel about this and about that." And we get pitched weekly from content providers that want to launch a new service.

—Interviewed by Don West

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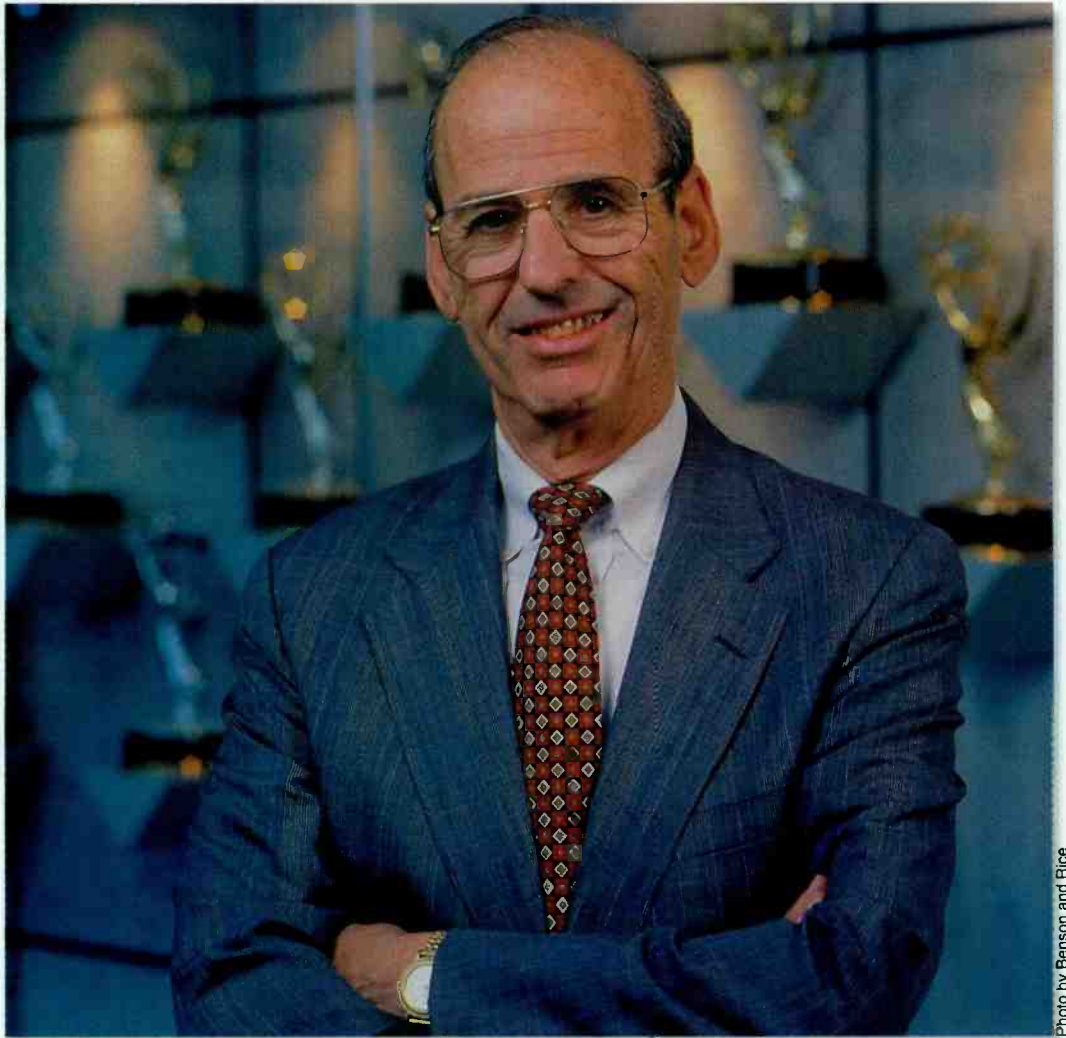


Photo by Benson and Rice

From A(mpex) To S(ony) With Charlie Steinberg

*After more than 35 years in the industry,
he slows down to smell the bits*

interesting” and “fascinating” are two words Charles A. Steinberg uses in describing the developments he’s worked on and the places he’s visited over the course of his 35-plus-year career in video. After graduating from the Massachusetts Institute of Technology with a Master of Science degree in electrical engineering, Steinberg began his career at Ampex in 1963, staying for 25 years and providing him with the opportunity to enter the Forbidden City in Beijing when it still lived up to its name. It would take him to numerous Olympic Games, where he would help make sure the latest television broadcast technology from Ampex lived up to the task. It would also provide Steinberg with the experience and contacts necessary to take on his next job, one he held from 1988 to Jan. 1, 1999. That job? President of the Broadcast and Professional Division of Sony Electronics.

During his 10 years as president, Steinberg helped oversee the early days of Betacam and position Sony for the digital age with a wide array of products that expanded Sony’s offerings well beyond what it offered when he joined the team. Today, Steinberg is serving in a new assignment as adviser to Dr. Teruaki Aoki, Sony Electronics president and COO.

Let’s go back to 1963, when you first were working with Ampex. At that time I guess the Kennedy assassination was a huge event for many reasons, but it also changed television didn’t it?

Steinberg: Yes. The Kennedy assassination was an interesting period of time. When that happened, we at Ampex were immediately asked to fly all kinds of videotape recording equipment to Dallas to help cover that event. I didn’t go down myself, but I vividly remember being involved with shipping that equipment.

You also went to China in 1974. What was that like?

Steinberg: ABC was asked to do the pool coverage of Nixon’s trip to China, which was the first trip where Westerners were officially allowed into the country in many years. The Chinese saw videotape recording for the first time and invited Ampex to come back in 1974.

It was the most fascinating trip I’ve ever had, and I will never forget it. I remember talking to a woman who was assigned to be

our official liaison and asking her how life was in China. She said it was very tough, but it wasn’t as tough as it was when people were starving. I’ll never forget that remark—she was very emotional.

What are some of the early technical developments you were involved with?

Steinberg: One of the most exciting developments was the first high-band color recorder, called the VR-2000, which was shipped to the BBC in 1964 and then to the three networks in the United States. It was one of the rare times that the three networks agreed on the same equipment.

Another big development was the first time slow motion was used on television. At the time people just couldn’t believe it. It was at a ski event in Vail, CO, in 1967 and [ABC-TV’s] Roone Arledge was the producer. The interesting thing was that we couldn’t move the slow motion machine [the HS-100 disk recorder] to Vail because it was a prototype that was spread all over a big laboratory bench in Redwood City, CA. Because of that,



Lifetime Achievement



Lifetime Achievement

"Today the technology will allow you to do almost anything you want. The question is what do you want to do, how much are you willing to pay for it, and what does the marketplace want?"

the video signal was transmitted from Vail to the Ampex laboratories in Redwood City, and then entered into the slow motion machine.

But the world saw slow motion for the first time ever, and I think it truly changed the impact of sports on television. In 1968, we brought slow motion to the Mexico City Summer Olympics along with the first handheld cameras. It was an exciting period.

You mentioned the color high-band recorder and how the networks came together on something. A lot of people now are saying the move to HDTV is similar to the move to color. Do you agree with that?

Steinberg: Certainly they both make an impact on the viewing public. Color versus black and white was a big, significant impact. And I think widescreen high definition is a big, significant impact. It's a much better viewing experience. The ability to hear high-quality digital sound that goes along with DTV also is going to have an impact.

Color was actually lying dormant for a long time until CBS decided to get on the bandwagon with NBC and start producing programs in color. And so color was basically dormant because there wasn't enough program material. There wasn't enough content. I think we have a very similar kind of thing today with HDTV. HDTV is going to have a very, very slow takeoff until we have a significant amount of content that people want to see, and that's, I think, very analogous to what happened with color.

What were the challenges for product development in the 1960s?

Steinberg: In some ways the technology was in the early days. The transistors were just coming into their own in the early '60s, and everything was paced by what the technology would allow you to do.

Today it's very different. Today the technology will allow you to do almost anything you want. The question is, what do you want to do, how much are you willing to pay for it, and what does the marketplace want? So it's not technically driven any more. It's user- and need- and application-driven; it's business-driven.

You also mentioned the 1970s as being an exciting time.

Steinberg: The '70s saw the advent of digital technology into the broadcast, or the start of it. The first still stores were introduced in the '70s and I was very fortunate to have partici-

pated in the first time the paintbox was ever used on television. It was with [artist] Leroy Nieman at the 1976 Super Bowl in New Orleans. It was exciting to be standing over Nieman's shoulder and watching him use an electronic paintbox for the first time in his life, for the first time in anyone's life, and on the air, live.

Those are exciting experiences and they set a pattern that we've lived with for lots of years. The first time that we'd seen special effects in three dimensional form, to be able to rotate and manipulate images and preserve that perspective took place in the '70s. Again, exciting times.

What about your move to Sony?

Steinberg: I joined Sony in 1988 after a 25-year career at Ampex. I was very fortunate in that I knew most of the key people at Sony, and therefore it wasn't a strange environment. Also, several of the people I worked with in years gone by were at Sony, so it was an opportunity to become affiliated with people I knew.

Certainly one of the things that I didn't appreciate anywhere near the extent that I do today was the power that one has when you're in the high volume consumer electronics area and at the same time in the low volume professional area. There's a tremendous interplay of technologies here that are so very important, and when I look back at things it's one of the real strengths that Sony has—a very strong, dominant position in the consumer area, especially the high end, high performance consumer area, combined with the broadcast professional area.

Why is that interplay important?

Steinberg: Today we have some high-performance, low-cost, outstanding color cameras, all based on CCD chips. We would never be able to produce those cameras at that price and performance if it weren't for the base need of CCD chips that exists in a high volume consumer market. That's one of the things. It's a case where the high volume needs for the consumer market allows tremendous fallout of technology to the broadcast market.

And it goes both ways. A lot of the signal processing work that we've done first for the broadcast and professional market went their way into the consumer market. So it's a back and forth kind of effort.

You mentioned CCD technology. One of the stories I wrote when I first became involved

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SONY



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"If we can provide the consumer with a better experience, whether it be entertainment, information or a combination thereof, the consumer will embrace it."

with the industry discussed how CCD technology would be resisted because it didn't offer the warmth of pictures acquired with tubes. Is it natural in broadcasting that when something new comes out people say it's not as good as what it's replacing?

Steinberg: I think there's a natural resistance by people, whether it's in the broadcast environment or not, to change. I've had fun over the years using my initials for speeches, and I've given many speeches with my initials meaning many things. One of the first was using CAS to mean "customers are supreme." I've also used it to mean "change accompanies success." And I believe that. You need to change to be successful.

And now broadcasters have to change. There is no choice.

Steinberg: That's right.

What are your thoughts on this mix of politics and technology and its potential impact?

Steinberg: I'm not sure I'm going to answer your question directly, but I think if we can provide the consumer with a better experience, whether it be entertainment, information or a combination thereof, the consumer will embrace it. And we who are in the business of providing tools to allow that to be brought to the consumer will enjoy some good business and make an impact on [all] our lives.

And I think we have made it. We in the technology-driven companies have had a major impact on the lives of people. I think it's also not only by making a picture look better, but by providing more of an entertainment experience, providing more of an informative learning experience. It's multifaceted, multi-directional.

If you look at the history of the industry it appears as if there's never been a real paramount shift in technology where the manufacturer leading at the beginning of the shift is the manufacturer leading coming out. What kind of lessons from what happened to RCA and Ampex can be applied to Sony?

Steinberg: Excellent question. I think the problem with RCA and Ampex was not that they didn't see the technology changing, but that the corporate structure and the corporate priorities changed, and so the interests of the business changed.

For example, Ampex was in a very strong dominant position in the days of two-inch

quad recording when videotape recording was first invented. And it maintained that position all along. When the technology moved to one-inch helical, Ampex and Sony both were very strong, but Ampex's position was strong and dominant. By that time RCA's position was quite weak because its corporate priorities changed.

I think companies could change with new technology, but sometimes the corporate environment, corporate priorities, don't allow it to happen. Sometimes, a company that's in the dominant position is slow to recognize the change. Two examples come to mind: the obvious one is IBM being slow to recognize the change from mainframes to distributed personal computers.

As an example at Sony, I think we've probably been slow to recognize the change from linear to nonlinear and slow to have product in the marketplace.

But it seems that Japanese manufacturers as a whole, as far as the nonlinear market, haven't really made inroads. What do you attribute that to?

Steinberg: Three things. The Japanese broadcasters themselves were slow to embrace nonlinear technology compared to what happened here in the United States, so therefore some of the Japanese manufacturers didn't see firsthand the major impact of nonlinear technology on the broadcast industry.

The second reason, as I mentioned a few moments ago, is that when you're dominant in one particular technology sometimes you're slow to see the change.

And third, most nonlinear products are very software intensive. There's a lot of choice and flexibility built into those systems because they are software intensive. And I think being close to the customer in the development of those products is very important.

You mentioned software intensity. It seems that almost all products now have a level of various software intensity. What do you think that means for the industry going forward as far as product development?

Steinberg: First, I think you'll see products that have much shorter life cycles because of the new versions of software, new capabilities of software. You'll see a proliferation of products because the product development doesn't take the huge capital investments, the huge engineering and manufac-

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"We're going to have to provide our customers with tools and capabilities to allow them to produce video material faster, cheaper, more effectively, more interestingly for many more distribution channels than exist today."

turing startup costs. So you'll see a lot more products.

I also think you're going to see a greater need for those who are in the business of providing solutions to customers to do that in closer cooperation with and closer communication with the customer. We can do a lot of things with it; we really have to be shown what needs to be done.

What are your thoughts on digital television as a medium? Everybody's trying to define it right now, and it seems whoever figures that out first is going to be making money.

Steinberg: You're going to have a whole proliferation of different means of content delivery. You're going to have the Internet. You're going to have the satellite distribution of hundreds of channels. You're going to have the ability to transmit many channels on cable. You're going to have the ability to transmit multiple channels, if people want to, terrestrially through data compression of the digital channels that are available.

The thing that caused color television to be embraced slowly was the lack of content. When content became available it started taking off. I think the same thing is true in DTV and the same thing will be true with all these alternative enhanced delivery methods.

So for a traditional video company like Sony, what do these new delivery mechanisms mean as far as new business opportunities?

Steinberg: We're going to have to provide our customers with tools and capabilities to allow them to produce video material faster, cheaper, more effectively, more interestingly for many more distribution channels than exist today.

DTV: What do you think it's going to take to get HDTV sets and DTV sets into people's homes? What will make them embrace the technology?

Steinberg: I say it will all be driven by content. As HDTV content is available, people will buy HDTV sets. I also see the price of those sets, as happened in most electronic products, taking significant downward steps and becoming much more cost-effective and lower priced than they are today.

One of the more interesting recent developments you were involved with was the introduction of Digital Betacam in 1995. Looking back, at the time, there were many

technical people who were up in arms because the compression ratio was around, what, 2.14 to 1?

Steinberg: About that. In fact, I have in my desk drawer something that one of our competitors was giving out at that NAB that had two aspirins in a little package and said take two for a headache from compression. I still have that sitting in my desk drawer, and I look at it once in a while and chuckle. I pick that thing up occasionally and I look at it and say, my God, there is a real message there.

It's interesting how far the attitude towards compression has come since that NAB.

Steinberg: People realized that the technology of digital signal processing and compression technology is sophisticated enough and capable enough where it could compress signals without impairing the results. And I think we're seeing more and more of it.

For example, the pictures we're seeing today of HDTV compressed at 19.2 megabits per second are just amazing. It's amazing quality, and it's probably going to get better.

What are some of the developments during your watch at Sony that you're proudest of?

Steinberg: I started at Sony in the very early days of Betacam, and being part of the huge success that Betacam has had, the hundreds of thousands of units that are in use around the world is amazing. If you take all the versions of Betacam it's nearly half a million units.

It's had a major impact on what we see and do, whether it be the handling of a war in the Middle East or how it's being used in sports every day or in other news events. Betacam has had a major impact and being part of that has been a great experience. I think that's probably the largest single thing.

Also, I've enjoyed being part of a very significant change in Sony's position in the marketplace. Way back when I first joined Sony it was overwhelmingly a box supplier and overwhelmingly a supplier of videotape recorders. Today, videotape recorders are just one small segment of our product line.

Third is being the spearhead and a very strong proponent of developing the capability to allow Sony to sell not just these boxes but to be able to bring those boxes together into a total solution for our customers.

I'd like to touch on your personal life a little bit because you've had more than 35 years to

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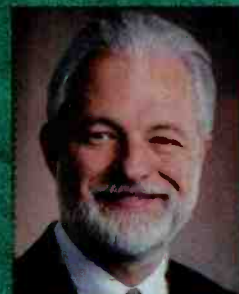
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President of Broadcast &
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Lifetime Achievement

talk about your professional life. You obviously do a lot of business traveling. As far as vacationing, do you stay home or do you like to travel?

Steinberg: I find that business travel and vacation travel are very different, and certainly I've have had an opportunity to have some wonderful vacations here that sometimes involve travel. African safaris, for example, or the opportunity to take my grandkids to Disney World, to Disneyland, to Hawaii, and an opportunity to vacation in parts of Europe that I'm very fond of. Italy, for example, is one of my favorite places to visit.

When I was in my early years, the one thing I didn't have time for was to spend a lot of time with my kids when they were in their early years, and I missed that. If I could do anything over again it would be to spend more time with my kids. I'm trying to make up for it now. One of the things that can get me home from work at a reasonable time more than anything else is for my wife to call and say the grandkids are over for dinner.

So what's your advice to your successor, Mike Vitelli?

Steinberg: Make an impact in both his professional life as well as his personal life. I think for anyone the key word is balance. Get the proper balance between your professional and personal lives so you can have a positive impact on both. I'm proud of the fact that I've been able to make a positive impact in both professional and personal lives. I've been married for 43 years to the same woman.

Well, now she'll get to see a little more of you.

Steinberg: I hope so. I'm looking forward to it. I view myself entering a new chapter of my career as opposed to having closed the final chapter, and I'm excited about it. Sony's been great. I couldn't have asked for a better environment these last 11 years, or for more freedom. I'm proud of the fact that business has tripled in the 11 years that I've been here. I've been in the same job for 11 years, more or less, and I've enjoyed every moment of it. But the work isn't done yet.

—Interviewed by Ken Kerschbaumer

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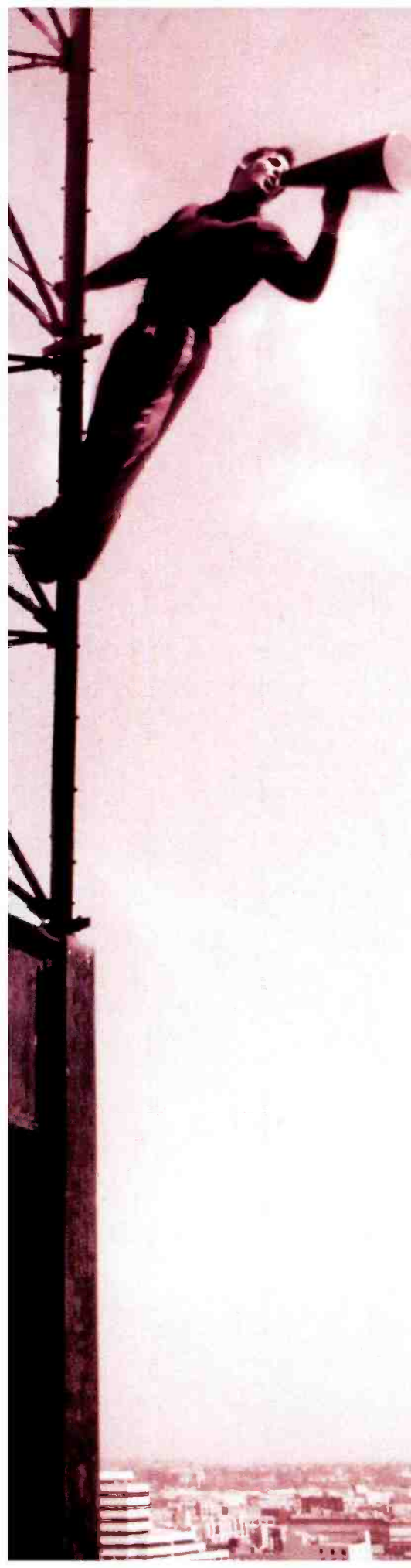
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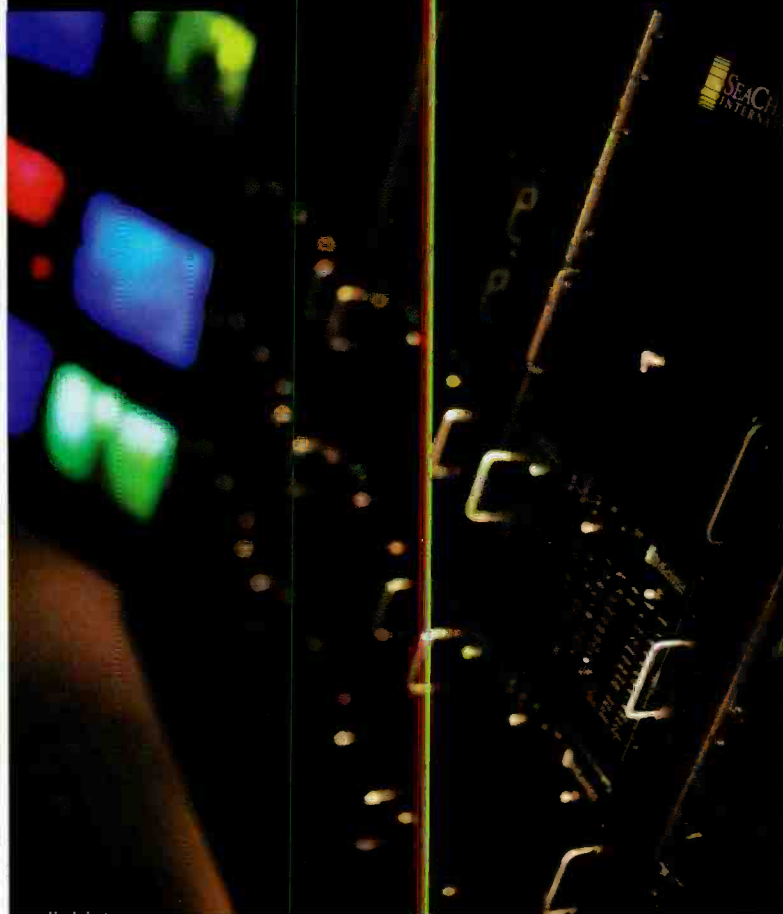


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Boston

Awaiting rebuild, WBZ-TV will use temporary digital facilities

With less than a month remaining before the FCC's May 1 on-air deadline, CBS affiliate WBZ-TV is in the midst of a major upgrade that includes a rebuild of its antenna tower and construction of a new transmitter building.

The \$10 million construction project includes an upgrade of WBZ's tower and a new transmitter building at the base of the tower which will accommodate digital transmitters for the station and the tower's tenants—ABC affiliate WCVB-TV and PBS affiliates WGBH-TV and WGBX-TV.

The project involves lopping 250 feet off the top of WBZ's existing tower and replacing it with a stronger structure that will add 350 feet and support the additional weight of the digital antennas. The final height of the tower will be close to 1,300 feet from the ground.

"It's a monumental undertaking," says WBZ Director of Broadcast Operations and Engineering Bob Hess, who adds that at least one other undisclosed station in the market is interested in locating its digital antenna on the refurbished tower.

While the entire facility won't be completed until August, Hess maintains that his station will be on-air by May 1. "We will be on the air with temporary facilities," he says.

For digital, WBZ will be using equipment that includes a Harris transmitter, a Harris ATSC encoder, a Faroudja upconverter and an Artel switcher. On the analog side, both WBZ and WCVB will be sharing a combined channel 4/5 circular polarized antenna, and WBZ will be installing a new channel 4 transmitter as

well. "We are not giving up on the analog signal," Hess notes.

ABC affiliate WCVB is already up and broadcasting in digital from a temporary antenna, side-mounted to the WBZ tower at about 580 feet from the ground. Mike Keller, WCVB's director of engineering, says the dearth of available tower real estate "forced new cooperation" among broadcasters involved in the tower-transmitter project. "It took us a long time to come up with these decisions. But I don't think we could have done it any faster or in any better spirit," he says.

In March, WCVB aired a high-def edition of its nightly news magazine, *Chronicle*, produced with borrowed equipment including a Sony camera. The production featured scenic footage of Vermont. The production was followed a month later with a new high-definition documentary, *The American Experience: Lost in the Grand Canyon*, produced by PBS affiliate WGBH-TV Boston. WGBH aired a simulcast of the documentary in NTSC. Although the station had originally hoped to go digital in May, the scope of the effort was "larger than anticipated," and much of the construction will be done over the summer, according to Kristin Daroff, a spokeswoman for WGBH.

WCVB was on-air digitally by the voluntary Nov. 1 deadline. Manchester, N.H.-based WMUR, an ABC affiliate also in the Boston market, began broadcasting with standard definition DTV on Oct. 29, 1998. Three weeks later, WMUR obtained upconverters and started doing HD tests.

"It's basically about two seconds late by the time I

look at a cable signal here in Manchester, because they have an elaborate backbone," says Joe Paciorkowski, director of engineering.

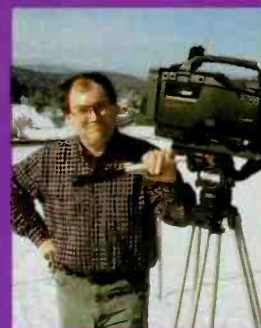
Last month the station decided on a Miranda upconverter and will be receiving a production unit—the Aquila model—any day now.

Fox affiliate WFXT-TV isn't on the air yet, but the station expects to be broadcasting DTV soon. The station has been assigned an average of 74.7 kw ERP and will be broadcasting from a height of about 1,085 feet. "We're going to be up and running by May 1," says Chief Engineer Steve James.

Jim Shultis, director of engineering for NBC affiliate WHDH-TV, anticipates continued testing of its digital signal up until a day or two before the deadline, at which point the station will commence digital broadcasting 24 hours a day. The station owns a self-supporting, 900-foot tower with its channel 7 analog antenna, some microwave dishes, and no tenants.

WHDH spent approximately \$3 million in 1998 to get its RF plant in order for digital, according to Shultis. In 1999, WHDH has opted to simply upconvert the NTSC signal until HD-capable TV sets become abundant in the market—spending about \$500,000 for the upgrade. "It was somewhere in the neighborhood of \$200,000 [more] for the pass-through, so it was a decision to save that money. When there are more viewers out there, we'll go ahead and add high def," Shultis says. "That could be six months later, or it could be a year later."

—Andrew Bowser



Wcvb's news magazine 'Chronicle' is a high-def production.

DTV plans at a glance

Station: WFXT
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 25/31
Digital Status: Scheduled to be on-air by May 1, 1999

Station: WBZ-TV
Owner: CBS Station Group
Network Affiliation: CBS
Analog/Digital Channels: 4/30
Digital Status: Scheduled to be on-air by May 1, 1999

Station: WCVB-TV
Owner: Hearst-Argyle Television Inc.
Network Affiliation: ABC
Analog/Digital Channels: 5/20
Digital Status: On-air as of Nov. 1, 1998

Station: WHDH-TV
Owner: Sunbeam Television Corp.
Network Affiliation: NBC
Analog/Digital Channels: 7/42
Digital Status: Scheduled to be on-air May 1, 1999

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Dallas/Fort Worth

The doomsday clock is ticking at CBS affiliate KTVT

Our chief engineer has one of those little *Armageddon* clocks on top of his computer monitor," says Palmer Moynihan, assistant chief engineer of operations at KTVT. "It was supposed to click off for Y2K or something. But he reset the damn thing to May 1, 1999. It's getting pretty scary."

As the FCC-mandated transmission deadline approaches, Moynihan and crew are gradually assembling the parts—including a General Instruments DigiCipher II encoder, a dual-stream Tektronix digital file server for commercial playback, and a Miranda upconverter.

To complicate matters, KTVT is midway through a major plant upgrade from NTSC analog to serial digital, which should be finished by midsummer. "We're changing so much of the infrastructure, you wouldn't believe it," Moynihan says. "It's like building a whole new TV station and trying to stay on the air with analog stuff at the same time." However, the price of admission to the digital age is pretty steep. "Our budget figure is exactly 3.75 bajillion-quadrillion dollars," he adds wryly.

In truth, he continues, KTVT has delayed purchases as long as possible so it can take advantage of second- and third-generation equipment that comes at lower prices than first-generation gear. "I'm glad we've waited as long as we have, even though now we're running around like chickens with our heads cut off," he says. "You have to take advantage

of every day you can spare, because the technology is changing so rapidly."

KTVT is not the only Dallas station that hasn't yet gone digital. Fox-owned KDFW also has suffered delays, including a "smoked" transmission line, sources say. KDFW didn't respond to calls for comment. Meanwhile, ABC affiliate WFAA, the first TV station to broadcast HDTV on a VHF signal, has been broadcasting a digital signal for well over a year, choosing to run only a minimal amount of unconverted material in favor of prerecorded HD showpieces and network pass-throughs.

"There's really no incentive for people to spend \$7,000 on a set if all they can get is the unconverted stuff," says WFAA Technical Manager Wayne Kube. "But there have been a number of sets sold based on the ability to receive high-def."

WFAA's VHF digital signal is broadcast at full power (18.6 kw). Signal strength measurements from an independent field-test van indicate that the power almost exactly duplicates the NTSC coverage. At any given time, WFAA is looping one of several two-hour high-definition programs. WFAA, a Belo-owned station, is also taking ABC's 720p fare and upconverting it to 1080i.

ABC has sent two movies encoded in 5.1 channel Dolby Digital audio, and WFAA has retransmitted them successfully with a few minor sound ticks that were solved by the time of the broadcast of *Up Close and Personal* last February. "It was pretty flawless on the

audio," Kube says.

WFAA maintains a Web page on HDTV information for viewers. In addition, both WFAA and NBC affiliate KXAS have made a point of regularly staging public promotions, sponsoring HDTV demos at shopping malls and special events.

"They do a fair, we do a fair. We're at the home show, they're at the car show," notes Richard Westcott, KXAS director of engineering.

"The only other place I've seen a strong level of awareness like this was probably among congressmen, senators and the FCC when I was with WRC in Washington."

KXAS has been on-air digitally for the most part since April of 1998, running both upconverted 1080i and native 1080i. NBC's April 26 launch of *The Tonight Show with Jay Leno* in high-def can't come soon enough for KXAS. "Once-a-week stuff is fine. But people need to see [high-definition] in what they like to regularly view," Westcott maintains.

One high-end retailer that is partnered with KXAS to promote HDTV has a long list of back-orders and is selling every unit it can get, according to Westcott. Meanwhile, feedback from the estimated 50-plus HDTV set owners in the market suggests they're anxious to see their new toys do some tricks. "I'm already getting letters from a couple of viewers saying, 'Are you guys gonna upconvert *Homicide* or are you gonna show that stupid tape of the girl skating at Rockefeller Center?'" Westcott laughs.

—Andrew Bowser



The Mosley transmitter remote helps KXAS generate HD to set owners.

DTV plans at a glance

Station: WFAA-TV
Owner: A.H. Belo Corp.

Network Affiliation: ABC
Analog/Digital Channels: 8/9
Digital Status: On-air since Feb. 26, 1998

Station: KDFW-TV
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 4/35
Digital Status: Scheduled to be on-air by May 1, 1999

Station: KTVT
Owner: Gaylord Broadcasting Co.
Network Affiliation: CBS
Analog/Digital Channels: 11/19
Digital Status: Scheduled to be on-air by May 1, 1999

Station: KXAS-TV
Owner: Lin Television Corp.
Network Affiliation: NBC
Analog/Digital Channels: 5/41
Digital Status: Broadcast digital transmissions intermittently since April 1998

Washington

Three D.C. stations beat the digital deadline



NBC affiliate WRC announcing its digital launch.

DTV plans at a glance

Station: WRC-TV
Owner: NBC TV Stations Division
Network Affiliation: NBC
Analog/Digital Channels: 4/48
Digital Status: On-air since Oct. 29, 1998

Station: WJLA-TV
Owner: Allbritton Communications
Network Affiliation: ABC
Analog/Digital Channels: 7/39
Digital Status: On-air since Nov. 1, 1998

Station: WUSA
Owner: Gannett Broadcasting
Network Affiliation: CBS
Analog/Digital Channels: 9/34
Digital Status: On-air since Nov. 1, 1998

Station: WTTG
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 5/36
Digital Status: Scheduled for May 1, 1999

Note: PBS affiliate WETA-TV on-air digitally since Nov. 9, 1993

May 1 promises to be something of a non-event in the nation's capital. Three of the four major network affiliates already have DTV signals on the air and native HDTV images have been available 24 hours a day every day since Nov. 9—courtesy of the PBS affiliate WETA-TV.

WTTG, Fox's O&O, is the only major network affiliate not yet on the air, and Vice President of Operations and Engineering Cindy Hutter says the station will make the digital leap soon after workers finish strengthening the station's tower and hoist the DTV antenna.

"All of our equipment is here," Hutter says. "The weather hasn't been very good between Christmas and now, so that has slowed our progress."

NBC owned-and-operated WRC-TV flipped the digital switch Oct. 29, 1998, making it one of three stations in the market that met the FCC's Nov. 1 voluntary on-air deadline. The station has been broadcasting upconverted NTSC images stretched to a 5-by-3 ratio, leaving 10%-15% of the horizontal screen black.

"What we've found is that's about as far as you can go without starting to make the talent look squatty," says Jerry Agresti, WRC's director of engineering. "We wanted to give those adventurous people who went out to buy HDTV sets a little more than they normally get."

At the same time, Washington is about to lose WHD, the Model HDTV Station Project, which is being phased out in 1999. The end will be bittersweet for

broadcasters who have come to rely on the model station's digital TV data.

"These guys were the equipment pioneers," says WTTG's Hutter, who worked with the model station's President Bruce Miller at ABC in the 1980s.

It will certainly be a loss to PBS affiliate WETA-TV, which has relied on WHD-TV to encode some of its original HDTV productions to date. "A lot of our success has been because they and others have been great to work with," says Terry Bryant, senior vice president of broadcasting at WETA.

Since its inaugural broadcast on Nov. 9, WETA has been airing native 1080i high-definition programming, including productions such as *Impressionists on the Seine*, a documentary on the paintings of Renoir, Monet, Manet and other artists of the period. The station also broadcast *The Legacy of Generations*, which profiled several Pueblo women who are ceramic artists. The station sometimes runs a 10-minute multicast demo that simulates the final moments of a multicast broadcast day.

WETA's video server at the transmitter can be controlled via a laptop computer. "When we do our demos, we always tell people they're going to get a tour of our complete master control facility, and then I step aside and point to the laptop," Bryant says. "And of course the backup to the laptop is the cell phone."

So far, WETA has spent approximately \$700,000 for the infrastructure to broadcast HD material, including a transmitter, antenna and

video servers. "We really hot-wired this thing together," says Bryant. "But we have a lot of money to raise and a lot of money to spend, because obviously we can't operate the way we are forever."

It's unclear whether the availability of HDTV 24 hours a day has spurred HD set sales in Washington. WETA's Bryant says she's regularly in touch via e-mail with "a few dozen" viewers, and conversations with one local retailer indicate that roughly a third of the large-screen sets sold are HD-capable. But others say viewer interest has been minimal.

"In the very early days, I think, there was maybe one call from someone having trouble with the signal. But frankly, we're not hearing a lot," says Dick Reingold, president and general manager of Gannett-owned WUSA, a CBS affiliate.

WUSA made it to air Nov. 1 and is both upconverting its NTSC signal and passing through CBS' high-definition programming at full power (620 kw). "There were a lot of complications that made it a real challenge. But we are happy we met that challenge," Reingold says.

WUSA shares a tower with ABC affiliate WJLA. At the time of the conversion to digital, two new Dielectric antennas were installed, one that both stations share for their VHF analog and one for their UHF digital. WJLA is simulcasting NTSC in 480i for now using the Harris FlexiCoder. "It's an ongoing science project," says one WJLA engineer.

—Andrew Bowser

Detroit

WXYZ-TV first with high-def in Motor City

Being first with high-definition television did not come without a price for the people behind the scenes at WXYZ-TV in Detroit. Just ask the workers who poured concrete for a new transmitter building in the dead of winter, or the technicians wrestling with receiver-encoder incompatibility problems right up to and throughout the station's Nov. 1 premiere of *101 Dalmatians*.

"From the start, everything was absolutely last minute," recalls Chief Engineer Michael Doback of the ABC affiliate. "We went on the air on the 29th of September, and it was only two days before that we actually got a receiver capable of viewing the signal."

Last May, Doback was expressing some doubts that the station would make its on-air date. At the time, the station's DTV construction permit was still in limbo pending frequency coordination issues with Canada that wouldn't ultimately be resolved until midsummer. Today, however, digital channel 41 is up and running full-time.

"It did not go off without some glitches," he says, "but when you're inventing technology, you've got to expect glitches. All told, I think we were just as excited as you could be about what we had accomplished."

WXYZ made a big splash with the Nov. 1 broadcast of Disney's *Dalmatians*, introducing high-definition at 13 Detroit-area ABC Warehouse stores. According to Doback, the promotion even helped drive advertising sales for the analog channel.

WXYZ organized a promotion for retailers again earlier this year when Sony introduced its new 32-inch flat-panel high-definition sets, sending the engineering staff out to high-end electronics outlets to meet with customers and answer their questions about HDTV.

The Scripps-Howard station spent more than \$1 million for switching, playback and automation gear from Tektronix, along with an HDTV encoding system from NDS Americas. The station is in the midst of a complete studio rebuild, converting its analog plant to serial digital 601. The station will use a Tektronix HD Performer 10 x 1 switcher, a 1.5Gb/s 32 x 32 router and an M-2100 master control switcher that will be 601- and HDTV-capable.

"From here on out, we're taking a more conservative approach to implementation," Doback says. "Although we're looking at studio equipment, I'm not sure what time line the acquisition of more studio equipment will be on."

Vertical real estate wasn't much of an issue in this market. WXYZ, along with Fox-owned WJBK-TV and NBC affiliate WDIV were all able to accommodate digital antennas on existing towers with few modifications.

WJBK has been on the air since Nov. 1, primarily upconverting to 4:3 480p but also passing through the 16:9 feeds of *The X Files* that Fox sends out on selected Sunday nights. "We've had a pretty smooth transition," says Director of Engineering and Operations Tim Redmond. "There haven't

been any major hiccups."

WDIV has done digital broadcasts intermittently, testing distribution paths and signal penetration, with plans to go full-time by the May 1 deadline. They plan to pass along all NBC-originated high-definition programming to viewers.

"It's the same as the performance of an automobile," says WDIV Chief Engineer Marcus Williams. "If you have any potential problems, you want to be able to address them up front."

Meanwhile, CBS-owned WWJ-TV has been battling the harsh Detroit weather to complete its new tower in time to meet the May 1 deadline. A new tower is being built at an old radio site in Oak Park, on the northern limits of the city line. "It's at about the 500-foot level and we've got 500 feet to go," says a station engineer. "May 1 is our target date. But who knows with this weather?"

A new transmitter building has been completed with room for WWJ and other tenants; currently some of the Detroit stations which have yet to make the jump to digital are negotiating with the CBS owned-and-operated station for space at the structure. All told, WWJ's digital upgrade is expected to cost roughly \$10 million.

As a CBS owned-and-operated station, WWJ's equipment needs will be specified primarily by the corporate office, with latitude to purchase any items which might be required for the station, ensuring that all of the O&O's have the same basic setup.

—Andrew Bowser



Supervisor Chuck Chave of WDIV, which has done digital testing and goes on-air May 1.

DTV plans at a glance

Station: WXYZ-TV
Owner: Scripps
Howard Broadcasting
Network Affiliation: ABC
Analog/Digital Channels: 7/41
Digital Status: On-air since Sept. 29, 1999

Station: WWJ-TV
Owner: CBS Station Group
Network Affiliation: CBS
Analog/Digital Channels: 62/44
Digital Status: Scheduled to be on-air by May 1, 1999

Station: WDIV
Owner: Post-Newsweek Stations Inc.
Network Affiliation: NBC
Analog/Digital Channels: 4/45
Digital Status: Testing intermittently; scheduled to be on-air full-time by May 1, 1999

Station: WJBK-TV
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 2/58
Digital Status: On-air since Nov. 1, 1998



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Atlanta

Three down and one station ready to go May 1

As May 1 draws near, WAGA-TV is the only major network affiliate in Atlanta not yet on the air with a digital signal. Although it's scrambling to complete a new tower that will hold its digital antenna, the Fox-owned WAGA won't be deterred from meeting the FCC-mandated deadline, according to Vice President of Engineering and Operations David Jones.

The new \$3 million tower will replace an existing tower that is only 250 feet away, which was built in 1955 and is already operating at near capacity. "Progress is a little behind," says Jones. "The old tower would not support additional antennas, but could possibly support a small temporary antenna, if we are pushed on the construction of the new tower."

The new tower was among the last considerations for WAGA, which has spent more than a year evaluating upconverters, aspect ratio converters and other key pieces of equipment. "The entire [Fox station] group has spent considerable time researching and putting together deals with manufacturers," he adds. "We really are sparing no expense in the transmission phase to find the right combination of equipment to give us the highest quality, particularly in this simulcast period."

The station chose a Faroudja upconverter, primarily because of the unit's overall quality and versatility in supporting multiple formats. It's the same brand picked by Detroit's Fox-owned station, WJBK-TV, although the decisions to purchase were reached independently. "Each station is pretty much able to

make their own decisions on the type of equipment they want to use, based on whatever works best within their system," Jones says.

By the time the Fox station makes it to air, Cox Broadcasting's WSB-DT in Atlanta will have been broadcasting for well over a year. The ABC affiliate station kicked off its digital service in April 1998, airing a 17-minute segment of 1080i high-definition video that included news studio footage shot inside its new \$10 million all-digital facility. The digital facility, built in 1996 and still being developed, sports a raft of Sony equipment, including Sony cameras, tape decks, DME 7000 production switchers, and servers.

No additional high-definition native production is planned for the immediate future. "We want to see how this is going to be embraced by the viewers," says Gene Faulkner, WSB-TV director of engineering. "It's a very uncertain climate out there. We're hoping that as more programming comes online, we will be able to get more viewers, and then we can concentrate on spending more money on it than we are currently. Right now, we're trying to hold down costs as much as we can."

The second station to bring a digital signal to air in the nation's 10th largest TV market was WXIA, a Gannett-owned NBC affiliate. WXIA, on-air since October, is broadcasting at full power on channel 10, upconverting every program that passes through the analog station.

"We wanted to be in a position to have the capacity to deliver programming in an HD mode, if and when the

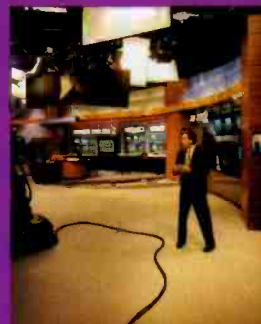
HDTV programming was available," says Bob Walker, WXIA president and general manager. "We remained consistent with that philosophy and therefore we've had very few surprises to date."

WXIA and WSB-TV were joined by Tribune Broadcasting's WGNX, which has been upconverting standard-def programming to 1080i and passing along all CBS high-definition content since Nov. 18 at full power (50 kw ERP) on channel 19. "We didn't have the voluntary deadline," explains WGNX Chief Engineer William Van Duynhoven. "We were just trying to compete, and get on the air as close to that as we could."

WGNX reserved tower space for its Dielectric antenna for the digital channel some three years ahead of time, leasing space on a tower right behind the station's facility. The tower, owned by a local firm, Shepherd Construction Co., also houses its antenna for analog channel 46.

Now, the station's waiting for viewers to materialize, and if Van Duynhoven's experience is any indication, local retailers aren't likely to be creating a digital buzz anytime soon. The engineer says some retailers are "totally misinformed" and have on occasion insisted that no stations were operational yet.

"I've personally talked to about 20 viewers who had questions," says Van Duynhoven. "And I talked to one installer who's pretty busy putting in high-end systems," he adds. "But I haven't got a really good feeling. If we get the retailers to put up antennas and stop telling people we're not on the air, it might go a little faster." —Andrew Bowser



Wsb's new studio is part of the station's \$13 million digital facility.

DTV plans at a glance

Station: WXIA-TV
Owner: Gannett Broadcasting
Network Affiliation: NBC
Analog/Digital Channels: 11/10
Digital Status: On-air since October 1998

Station: WSB-TV
Owner: Cox Broadcasting
Network Affiliation: ABC
Analog/Digital Channels: 2/39
Digital Status: On-air since April 1998

Station: WAGA-TV
Owner: Fox Television Stations Inc.
Network Affiliation: Fox
Analog/Digital Channels: 5/27
Digital Status: Scheduled to be on-air by May 1, 1999

Station: WGNX
Owner: Tribune Broadcasting Co.
Network Affiliation: CBS
Analog/Digital Channels: 46/19
Digital Status: On-air since November 1998

More cash for radio

Radio advertising may grow 15%-16% this year, partly fueled by millenium-themed advertising, according to Radio Advertising Bureau President Gary Fries. "And who knows beyond that?" he asked Monday during his annual "State of Radio Sales" presentation at the NAB convention.

That impressive growth rate would build on the 12% experienced last year—"the most solid year" ever—and maintain the 16% increase in the first quarter of this year, he said. "Radio ... is on a roll right now," he said, with February marking the 79th straight month of radio ad revenue increases—about 6 ½ years' worth. Advertisers are accepting the medium in a way "that has never been experienced before," he said. "People are looking at us as a results medium" and continue to predict a deadly decline for newspapers.

"We have no demise," he said. In fact, "We can ride with it and become part of it. ... Your radio station will not survive by just being a jukebox playing music."

Despite constantly rising numbers, Fries said radio could do even better in gaining advertising. Currently, "we are really underpricing ourselves." The industry should tackle millennium advertisers, expected to unleash a wave of new ads in the third and fourth quarters, with "a whole new platform of prices." Another huge opportunity lies with what he called the "sleeping giant [of] dot.com advertising." Internet companies are spending up to 80% of their ad budgets on radio, while the medium controls just 7.6% of the nation's total advertising pie. (That slice also is expected to increase this year, to 7.9%, or about \$16 billion, Fries said.)

In the first nine months of 1998, the latest numbers available, dot.com advertisers spent \$44.6 million on radio. They spent just \$15.6 million in all of 1997. Still, "I'm not so sure that those of us in the business are selling it properly yet."

Part of the problem is that "we need better salespeople." Without emphasis on training at individual stations, sales employees come and go too rapidly, he said. To that end, the RAB is spending up to \$400,000 to build a training academy at its Dallas headquarters. New salespeople will undergo two weeks of intensive training and coaching "and learn how to sell their radio station."

Stations will have to pay \$4,000-\$5,000 per person for the training (including meals and airfare), which will start in October. However, RAB members including Emmis Broadcasting Corp. and Susquehanna Radio Corp. will contribute to a scholarship fund for minority salespeople. The goal for all trainees is to cram about six months of on-the-job learning into the academy training and give them a sharp boost in their confidence. "We're basically giving them a chance for success," he said.

—Elizabeth A. Rathbun

Bug education urged

Most broadcasters are prepared to cure any technical ills that may come about as a result of the Y2K bug, but they have to go beyond that to educate the public about the facts and consequences of the impending event.

That was the message FCC Commissioner Michael Powell presented at a NAB '99 session Monday "Y2K: The Final Checklist."

The now-infamous computer glitch, which threatens to shut down computer systems in almost every segment of business and personal computing technology based on time-sensitive computer chips and microprocessors, is going to affect broadcasters deeply. The range of attitudes toward this impending event ranges from "business as usual to apocalyptic," says Powell. While uncertainty surrounds the issue, one thing is sure, Powell says, Y2K is serious.

John Petersen, president of the Washington-based think-tank, The Arlington Institute, warns broadcasters just how serious this problem is. Their Y2K coverage, he says, will shape the social attitudes and response to the potential disaster.

In a report presented at the conference, Petersen wrote: "Radio and television executives have two choices relative to Y2K. One is to treat Y2K as a typical news story ... You know there are going to be technical failures, but there are thoughtful 'authorities' that have radically different views on what the implications may be. If the media stops at this point they are contributors to the problem ... [or] you can take a step back and appreciate the larger dynamics of what is evolving here."

"Introducing awareness itself only exacerbates uncertainty and ultimately produces more anxiety," he continues. "Therefore, education must be very closely followed with information on how one can practically respond to the problem."

Ways broadcasters can respond include airing public service announcements to advise viewers how they may prepare and by reporting the status of computer systems of public agencies such as the IRS and the FAA and those of business like insurance companies and banks.

But the commissioner reminded broadcasters that if they do not adequately prepare their own systems for Y2K, their own operations will suffer. Therefore, he urged broadcasters that have not begun looking at the problem in their own plants to take action as soon as possible. "Please, please, no shortcuts this time."



Powell: Get serious.

Y2K



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Panasonic previews HD future

Will support 720p and 1080i with 100 Mb/s format

By Glen Dickson

After gaining a big footprint in broadcast news with its DVCPRO 25 Mb/s and DVCPRO 50 Mb/s formats, Panasonic is now looking to capture the nascent market for high-definition acquisition, production and playback with DVCPRO HD.

The 100 Mb/s DVCPRO HD format made its official debut at NAB '99, with the introduction of two camcorders and a studio VTR. The AJ-HDC10 and AJ-HDC20 camcorders will sell for \$65,000 and \$75,000 respectively, while the AJ-HD150 deck will sell for \$65,000. All three should be available in first quarter 2000.

The AJ-HD150 VTR is backward-

compatible with the DVCPRO 25 and 50 formats and is designed to offer broadcasters a low-cost path to HDTV playback with the inclusion of a video format converter. The converter will take existing standard definition material (480i or 480p) shot on DVCPRO tape and upconvert it to the 1080i or 720p high-definition formats for playback. The AJ-HD150 will also support simultaneous output of SD and HD signals, so a station could feed 480i for its NTSC broadcast and 1080i or 720p for an HD simulcast.

Since 497 U.S. television stations have already purchased DVCPRO tape, that means a big stock of material that can be repurposed for HDTV, says Panasonic Vice President of Marketing Stuart English. "Four million cassettes can already play back high definition," English says.

That may be an oversimplification, since most of that existing DVCPRO material has been shot in 4:3, not 16:9. But the introduction of the AJ-HD150 does help Panasonic sell its existing widescreen-capable DVCPRO 50 gear as a cost-efficient way to start building a widescreen library. HD pioneer WRAL-TV Raleigh, N.C., for example, has purchased \$1.9 million worth of DVCPRO 50 and will make it the station's house tape format.

Panasonic has also sold 69 DVCPRO 50 decks to Fox O&O KDVR-TV Denver. The station will use the DVCPRO 50 decks to record syndicated programming, archive its program library and serve as source machines in its nonlinear editing suites. The station has also purchased Panasonic widescreen plasma displays to show its DTV broadcasts in its lobby and conference area. ■

EchoStar, WebTV demo

DISHPlayer interactive service will start next month

By Glen Dickson

EchoStar and WebTV are using NAB '99 to showcase DISHPlayer, a joint venture that will deliver interactive services to EchoStar subscribers.

The linchpin of the new service is the DISHPlayer, a combined Internet and satellite receiver that will allow EchoStar to distribute super-fast WebTV content through its DBS capacity and also give subscribers traditional Internet access and back-channel capability via phone lines. DISHPlayer, will also give viewers TV pause capability, digital video recording, an advanced electronic program guide and video games.

DISHPlayer begins selling in May for \$499, and EchoStar subscribers who buy the box will need to pay WebTV's \$24.95 monthly fee to gain its interactive benefits. A DISHPlayer upgrade planned for this fall will also allow viewers to record up to five hours of video.



Ergen (l) and WebTV President Steve Perlman size up the opportunities for EchoStar's new WebTV service.

While EchoStar is moving ahead quickly with its interactive plans, the DBS operator isn't yet providing a high-definition service to customers. EchoStar is broadcasting HBO in high-definition so retailers can demonstrate with prototype HD set-tops. But EchoStar won't have an HD consumer product ready until later this year, says CEO Charlie Ergen.

"We've chosen to put our engineering resources into [DISHPlayer], which we think we'll sell a lot of, instead of HDTV, which we don't think we'll sell a lot of," says Ergen. ■

Philips shows new tricks for old gear

Philips is preaching backward-compatibility at NAB this year by offering high-definition upgrades for its existing video servers and switching products.

In addition to a new HDTV Media Pool video server, Philips will also sell existing Media Pool owners an HDTV video input/output module, the VR-8000HD, that will allow them to record HDTV using 360 Mb/s mezzanine compression. Philips has also introduced an HD upgrade video processor (HDVP) for its Saturn master control switcher, Venus routing system and "Diamond Digital" production switchers.

Jeff Rosica, vice president and general manager of Philips' North American sales organization, says the HD upgrades will represent a 35% cost premium over existing Philips digital products. As for buying the HD Media Pool brand-new, a two-channel version with three-and-a-half hours of HD storage will cost \$155,000; a three-channel version with five hours of storage will cost \$229,000. —Glen Dickson

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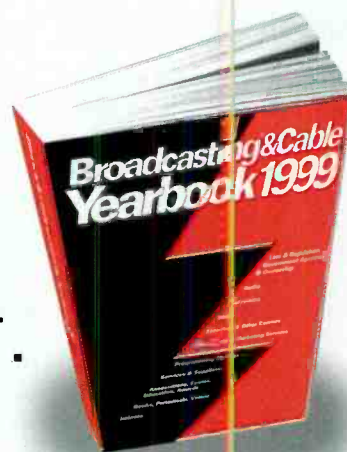
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Avid and Sony team

Companies want to allow nonlinear editing on MPEG-2 gear and let NewsCutter work on DVCAM

By Karen Anderson

Avid is working with Sony to integrate native MPEG-2 editing into its broadcast news products.

Under the alliance, the two companies are planning to work together to create Avid nonlinear editing products that will work seamlessly with Sony's broadcast products.

The deal is part of Avid's plan to tap the broadcast news market by providing complete solutions. "Avid recognized about a year or two ago that we would not be able to do it ourselves," says Avid CEO Bill Miller.

In addition to integrating MPEG-2 editing into Avid's NewsCutter news editing system, the companies are planning to collaborate to allow NewsCutter to work with Sony's DVCAM

equipment.

Mike Tsurumi, executive vice president of Sony's Broadcasting and Professional Systems Co., says: "Our customers...are all asking for Avid to interface with Sony. This is a very strong request from the marketplace, and we have responded that way and have had a positive response."

Miller says that while Avid has always had a focus on the broadcast news market, during the past year or two Avid has "really focused on news editing and media sharing."

According to Miller, an MPEG-2 version of NewsCutter is expected to be released by next year's NAB convention, and DVCAM interoperability should be complete "a lot sooner than that."

With a new focus on media sharing,



Avid's NewCutter effects model will work with Sony news products.

Avid has introduced Avid Unity, a family of shared-storage and video-networking products that will serve as a foundation for Avid's nonlinear editing systems.

Unity is designed to connect digital video workstations and share information in real-time regardless of format or platform. The core of Unity is MediaNet, a set of open networking and central storage based on a media file system. MediaNet will support Windows NT, Mac, and SGI as well as networking technologies, including ATM, Gigabit Ethernet and Fibre Channel. Avid Unity Media Net is planned to ship late in the second quarter 1999.

Omneon touts Video Area Net

Will use Firewire protocol to handle multiple formats; firm will also sell a director

By Glen Dickson

Omneon Video Networks, a Campbell, Calif.-based firm founded last year by former Sony and Tektronix executives, is using NAB '99 to present its vision of digital networking and storage.

Omneon's idea is to take the Firewire protocol, i.e. IEEE 1394, that is currently employed in consumer electronics devices and use it for professional networking systems.

Omneon says 1394 will allow its Video Area Network to handle multiple video and data formats including DV, serial component digital and IP (Internet protocol) content.

According to Don Craig, Omneon's vice president of engineering, the main benefit of 1394 is that it is designed for both isochronous delivery, where delivering content in real time is paramount, and asynchronous delivery, where data

cannot incur a loss of information but doesn't require real-time delivery.

Isochronous delivery is needed for broadcasting applications such as video playback or Web streaming, while asynchronous is necessary for post-production and archiving.

"Customers keep saying that what's challenging them today is the increasing range of different types of program material they have to handle, including Internet content," says Omneon President and CEO Larry Kaplan. He says that's why Omneon's Video Area Network is designed to be "data-type independent and distribution-type independent."

Omneon is creating an interface that will convert non-1394 material—such as 601 digital video—to run on a 1394 network; a 1394 switch, with 16 channels and 400 Mb/s bandwidth, to route material, and a control system called the "director." Omneon will then store

the video and data in off-the-shelf RAID disk arrays that use Fibre Channel networking. Systems can be expanded by adding more "directors" and more RAID storage; a system with eight directors could handle 150 DV-25 (25 Mb/s) channels.

While Omneon is intent on selling entire network systems, the company will also sell a director and RAID storage together to serve as a digital disk recorder.

A director and a four-channel RAID system with 10 hours of storage would cost around \$78,000.

But where Omneon's real cost-efficiency lies is in the 1394 switch (\$35,000) and the rest of the 1394 network architecture, says Ed Hobson, Omneon vice president of sales and marketing. That's because they use many of the same 1394 components that are being mass produced for consumer electronics products.

Chyron, Pro-Bel sell to TW

New Texas news channel to use Duet graphics platform; DirecTV upgrades router

By Karen Anderson

Chyron and Pro-Bel announced several deals at this year's NAB, including a major contract with Time Warner Cable for a new local news channel it plans to launch this summer.

Time Warner Cable has selected Chyron's Duet graphics platform to interface to NewsMaker's Star Drive/Open Media newsroom system for a new cable channel, News 8 Austin, Texas. The new channel will operate from a 20,000 square-foot facility with the NewsMaker and Chyron system at the heart of its newsroom. The channel will broadcast 24 updated newscasts, with a staff of about 67, says Time Warner's Vice President of News Operations Kirk Varner. "How do you squeeze the most out of 67 people?" he asks.

"We want to put as many tools in front of the journalists as possible," says Time Warner Cable's Director of Engineering Harlan Neugeboren.

Chyron's Abstraction Layer (CAL), on which Duet is based, allows the graphics system to communicate with NewsMaker's StarDrive application to generate text, graphics and animations. From NewsMaker's OpenMedia interface, journalists and graphic designers will be able to update graphic images and text on their workstations and then immediately see a preview.

While Time Warner says it has yet to determine how much it is going to spend on Chyron equipment, Varner placed the total cost of the facility below \$10 million.

In addition to Chyron's Time Warner deal, Pro-Bel has also announced several new contracts. In a deal worth \$3.8 million, Pro-Bel is upgrading DirecTV's routing system at its Los Angeles Broadcast Center. The expansion involves primary serial digital video, analog video and analog audio routers. Two additional expansion phases at DirecTV are expected to follow.

NBC will integrate ProBel's newly enhanced Video Network Manager into its MAPP asset management system at its 30 Rock headquarters in New York.

The MAPP Video Network Manager provides automated control of fiber-channel networking in a multi-server environment. Enhancements to the sys-

tem include the ability to allow servers on the network to be grouped into domains and sub-domains for higher priority transfers of material between servers. ■

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Pluto's new stars: 720p server, recorder

By Karen Anderson

Pluto Technologies of Boulder Creek, Colo., has followed last year's introduction of its AirSPACE DVCPR0-compatible video server and HyperSPACE high-definition video recorder by introducing 720p versions of both products.

Working in tandem with Panasonic's HDP-510 high-definition encoder-decoder, both products can switch between 720p, and 1080i HD and 526 and 625 standard-definition images. AirSPACE HD operates via Pluto's internal-play application and HyperSPACE eight- or 10-bit recording or interface to station automation and newsroom computer systems.

Pluto Technologies has teamed up with Sundance Digital, an Irving, Texas-based automation software provider, to develop full compatibility between Pluto's AirSPACE multi-channel broadcast server and Sundance digital's FastBreak NT spot-insertion software.

In addition, Pluto announced that AirSPACE is also fully compatible with VDCP, Odetics, FloriCal, Pro-Bel and Crispin automation software.

According to Pluto Chairman and

CEO Mark Gray, the broadcast market for AirSPACE and HyperSPACE "has just exploded for us over the past six months."

He adds, "The market is coming out of its confusion period," and says that many of its customers are broadcasting high definition during prime time and standard-definition DTV during the rest of the day.

Seven CBS stations are using HyperSPACE disk recorders, with the latest installations at WBZ-TV Boston, WWJ-TV Detroit and WBBM-TV Chicago. Gray says that much of its growth is coming from smaller market stations that are making the leap into HD. As evidence, Gray says, Dispatch Broadcast Group has selected the HyperSPACE HD recorder for its WBNS Columbus, Ohio, and WTHR-TV Indianapolis. Both stations are broadcasting about 30 hours of HD programming per week.

Marvin Born, Dispatch vice president of engineering, says: "We required compatibility with our Sony edit suite; recorders with at least three hours and room to grow, and dual-purpose applications covering on-air spot playback and editing. The fact that HyperSPACE also doubles as a 601 recorder for us is just an added bonus." ■

First big deal for Avstar

NBC will upgrade its existing newsroom computer systems with Avstar's new NRCS (Newsroom Computer System) software.

The deal, valued at \$1 million and \$2 million, is the first for Avstar since it was formed in February as an independent joint venture by Avid and Tektronix.

The deal involves replacing about 4,000 seats, mostly of aging Avid Basys systems, for network news and sports operations. It also includes migration of the some existing Avid NetStation newsroom computer systems to the Avstar NRCS.

The network will install the software at NBC's New York headquarters and its Charlotte, N.C. operation. The installation is expected to be completed by late summer.

The deal, which has a multiyear service and support contract for the NRCS, also includes the NewsChannel network operations center, MSNBC, CNBC and NBC's 13 owned-and-operated stations.

Avstar's NRCS Version 1.2 newsroom computer software incorporates elements of Tektronix NewsStar and AvidNews and is being introduced at NAB '99. It includes Fast Text Search, a module for full-text indexing and searching of stories in the system and fully integrated text export to the Web.

—Karen Anderson



CUTTING EDGE

By Karen Anderson

Lucent bows encoder options

Lucent Digital Video and Harris Broadcast has introduced new additions to their DTV encoding and decoding product lines at NAB '99. The QDEC-120 DTV decoder can decode four standard-definition

programs simultaneously with secondary analog or digital audio. It decodes MPEG-2 video from NTSC and PAL sources encoded in either 4:2:0 or 4:2:2. It will be sold to broadcasters through Harris under the FlexiCoder line. (It is sold to cable and DBS customers through

Lucent as Video Star.) "It can be used for any application where MPEG-2 is being used for contribution feeds," says Harris Vice President of Systems Integration Jay Adrick.

PanAmSat's on Spot

PanAmSat has introduced a digital video store-and-forward service, On the Spot. It allows broadcasters, syndicators and news agencies to distribute video as MPEG-2 files via satellite from Vibrant video servers installed at

PanAmSat's five operation centers and teleports.

Ampex, HP interface

Ampex Data Systems and Hewlett-Packard Co. have designed a fully integrated video server archive. Ampex has optimized its DST automated cartridge libraries to integrate with Hewlett-Packard's MPEG-based MediaStream video servers. An optimized Ampex driver device provides an interface link to the HP MediaStream for easier installation.

HP cuts deals, lays out HD strategy

By Karen Anderson

Hewlett-Packard has signed contracts to provide its MediaStream Servers to Sinclair Broadcast Group and DirecTV. In addition, the company has outlined plans for its HD systems.

Sinclair will install the MediaStream 700 MPEG-2 servers at its 18 stations beginning in the third quarter of 1999. The stations will use the seven-channel

servers for spot insertion and will enhance the system later to manage satellite feeds and programming playback. MediaStream Connect will enable content distribution between facilities via a wide area network and will be used in conjunction with a Vyvx CatchServer for spot insertion. According to Greg Hoberg, general manager of HP's Video Communications division, the system will allow Sinclair to share material among stations in the group.

DirecTV will install 12 MediaStream 1600 16-channel servers at its Castle Rock, Colo., uplink facility that originates the bulk of its programming. The servers will be used for on-air programming and

interstitial playback. The HP servers will replace tape machines and will provide additional storage capacity and backup protection for the DirecTV network.

While AL Kolavick, HP video division's director of technical strategy, would not place dollar figures on either of the deals, he says that sold individually, the MediaStream 700 and 1600 servers are priced at \$70,000 and \$90,000, respectively.

Outlining a high-definition strategy, Kolavick announced that HP is collaborating with DiviCom and JVC to provide an HDTV server system. It will include the 700 and 1600 model servers working in conjunction with the DiviCom MediaView MV400 HDTV encoder and JVC's new DM-D4000 HDTV encoder and will be sold as a package. "You can buy the box now and add the HD later," Kolavick says.

HP plans to announce the system for sale at next year's NAB. While Kolavick says the system has not been priced yet, "It will be competitive." ■

Leitch bows MPEG-2 server

Leitch has introduced a new MPEG-2 video server that incorporates centralized Fibre Channel storage, integrated software RAID technology and advanced multi-format codec technology.

The VR400 server provides bi-directional video channels for recording and playback of MPEG-2 4:2:2 and 4:2:0 material. Leitch is planning to introduce a DVCPRO compatible version in the future.

It will feature integrated fiber channel with distributed video input and output channels for centralized disk storage for direct random access to shared media. It supports 20 simultaneous bi-directional I/O channels.

In addition to hot swappable disk drives and dual independent loop support redundancy features, Leitch's RAIDsoft software protects against failure without additional hardware. It protects against double-data drive errors and single, unknown-location data drive errors. In the event of failure, lost information is automatically rebuilt.

Existing ASC VR300 customers can upgrade to the MPEG-2 model by replacing codecs with the VR400 technology for backward compatibility. —Karen Anderson

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Fox: Vyvx system spells no more tape

AdHosting MPEG-2 system with central servers will eliminate tape handling of spots for ad delivery

By Glen Dickson

Fox is the first customer for a new MPEG-2 advertising delivery system created by Williams Vyvx Services.

The new Vyvx system is called AdHosting and it is designed to eliminate tape from the advertising distribution chain. The Web-based storage and retrieval system will allow broadcasters to download MPEG-2 compressed television spots directly to servers in their stations, pulling them from

Vyvx's "host" server at its Tulsa, Okla., headquarters. Fox is due to go online with the AdHosting service in two months.

"I'm going to no longer hold spots in my plant," says Andrew G. Setos, executive VP of News Corp.'s News Technology Group. "They're going to be on their servers in their place in Tulsa, and their locations in Burbank (Calif.) and New York. I'll use their server as my library, and get it off their fiber network at high data rates, with no inventorying here. It's great—this



Andrew G. Setos, executive vice president of News Corp.'s News Technology Group, says Vyvx AdHosting is a "symmetrical system" that will benefit both Fox and its advertisers.

is the modern world. They want to become the file server for all TV stations playing commercials. A few others do it by satellite, but this will be all on the ground. They're going to put connections at the post houses, so when the agency approves [a spot], it can go right from the post house to their forwarding center."

Those forwarding, or regional service, centers in New York, Chicago and Burbank, will deal with both electronic files and conventional tapes, according to Vyvx executives. The material will be encoded at 25 Mb/s in the MPEG-2 4:2:2 format, sent via fiber to Vyvx's Tulsa headquarters and stored on an advertising content server. The traffic data associated with the spots will be stored on a Web server. When Fox wants a spot, it accesses the Tulsa servers and pulls the MPEG-2 file directly over Vyvx's fiber lines into its own video servers at the Fox Network Center in Los Angeles.

Setos says that eliminating the process of sending tapes overnight, logging them and feeding them into Fox's servers will mean much quicker turnaround time for advertisers. It also will allow spots to maintain digital quality throughout the distribution chain. Vyvx is shopping the service to other broadcasters here at NAB. Vyvx also plans to install new cache servers to receive file-based spots at the more than 600 stations that are part of its advertising distribution network. ■

Tek still for sale

At press time Tuesday, Tektronix's Video & Networking Division's future was still undecided.

The beleaguered division has been hit with financial losses for the past several years and some Tektronix shareholders have called for the company to get rid of it, preferably in an outright sale rather than a spinoff to employees. Relational Investors LLC, an investment fund with a 9.9% stake in Tektronix, has even filed documents with the Securities and Exchange Commission indicating that it will seek a proxy fight with Tektronix over the fate of VND.

Entering NAB '99, industry sources said that Leitch, Pinnacle, Chyron and Philips were interested in buying the division, which includes Tektronix's Profile video server line and Grass Valley switching products. However, no deal to buy Tek VND has been announced in Las Vegas. Chyron and Philips executives say they're not in the running, while Leitch President Frederick Goddard said "it was a mystery to everybody" as to who was going to buy the company. Pinnacle also declined to comment on its intentions.

"There are going to be about 50 people kicking the tires," said Pinnacle President Mark Sanders. "Pinnacle would have to be stupid not to do that."

At a press event celebrating Grass Valley's 40th anniversary on Monday night, Tektronix VND President Tim Thorsteinson acknowledged that a big change is in the division's immediate future. "It will probably be a merger or a spinoff into a separate company under the Grass Valley name," he said. "But the important thing for customers to know is that under any scenario we will continue our research and development and engineering investment for Grass Valley. There are no discussions about discontinuing the router line or switcher line." Thorsteinson added that the popular Profile server line will also continue.

Sources have indicated that Tektronix will hang on to its VideoTele.com business, which makes codecs for telecommunications networks.

—Glen Dickson

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Kennard says he's flexible

Broadcasters view speech as positive, but remain skeptical and see 'baby steps' ahead

By Paige Albiniaik

It's a long way from the complete deregulation that the networks want, but FCC Chairman William Kennard yesterday said he is willing to work with broadcasters to make some changes in the broadcast ownership rules.

"This is not the time to completely deregulate broadcast ownership," Kennard said in an address at the NAB convention on Tuesday. "Our ownership rules reflect core values of competition and diversity that are still in our regulatory scheme. But, at the same time, we can't keep broadcasters in the dark ages of black-and-white era rules. With the changing realities of today's marketplace, you need the flexibility to seize the opportunities and open the

*Kennard:
'This is not
the time to
completely
deregulate
broadcast
ownership.'*



frontiers of the Information Age."

Broadcasters did not think the speech reflected any significant position shift. "I thought the speech was positive, but the record doesn't reflect a

lot of reason to be positive," said Michael McCarthy, senior vice president of government affairs for A.H. Belo Corp. in Dallas.

Broadcast attorney Barry Umansky said he thought the FCC might loosen some broadcast rules, while tightening others, and that attribution and one-to-a-market rules would be completed before Congress leaves for its August recess. That still leaves the FCC to complete its biennial review of the ownership rules as mandated by the 1996 Telecommunications Act and to reevaluate the national ownership cap, which now stands at 35% of national audience reach.

"It will be baby steps," Umansky said, "Kennard didn't say anything dramatic."

"I would think they would put the screws on a little bit more," said broadcast

McCain backs minority tax plan

Senator says tax credits could produce 'real opportunities'

By Paige Albiniaik

Senate Commerce Committee Chairman John McCain (R-Ariz.) next month will introduce legislation that would reinstate a revised minority tax certificate program, he announced Tuesday via satellite to the NAB convention in Las Vegas.

McCain also plans hearings next month on minority participation in broadcasting and on broadcast ownership regulations.

"I believe that a revised, carefully-structured tax certificate program could be the cornerstone of a truly effective new Y2K ownership diversity program that will bring about real opportunities for new entrants in the telecommunications industry," McCain said.

McCain has been working with FCC Commissioner Michael Powell, McCain's hand-picked choice to serve on the FCC, on a program that would increase minority participation in broadcasting. The proposal Powell is pitching would allow companies to

defer capital gains taxes on sales of broadcast properties to minorities (BROADCASTING & CABLE, March 28).

Powell is trying to get Congress to introduce legislation—rather than pushing the FCC to take the lead—because Congress has been critical of FCC Chairman William Kennard's independent initiatives, such as low-power radio and tighter ownership rules. Susan Fox, Kennard's mass media advisor, last month said that Kennard supports Powell's efforts.

Powell also is trying to persuade Congress to craft new minority recruiting requirements, rather than leaving the task to the FCC. McCain did not say whether his bill would include such provisions, but his bill will include a "package of new diversity-enhancing initiatives." A federal appeals court last year struck down as unconstitutional the FCC's long-standing equal-employment opportunity rules. The FCC since has been working to rewrite those rules on employment of minorities and women.

In his speech, McCain also criticized the FCC for taking too long to review the agency's broadcast ownership rules. "I've struggled to come up with reasons why the [Commission's Democratic] majority would shrink from facing these questions squarely, and answering them honestly," McCain said. "One possible reason might be the concern that candidly confronting these questions would somehow put enduring regulatory goals like ownership diversity on the chopping block."

McCain advocates substantially deregulating the broadcast industry, and he supports raising the national ownership cap to 50% of the national viewing audience, up from 35%.

McCain also decried the FCC's low-power radio plan.

"What possible diversity interest is advanced, and what kind of 'opportunity' is created, by manufacturing thousands of tiny new radio stations in an already overpopulated, transitional market?" McCain asked. Frankly, a Web page or a leased access cable channel would get the job done better." ■



attorney Lee Shubert of Haley, Bader & Potts in Arlington, Va. "That's the only way to get to their goal of diversity."

Kennard said that flexible rules would help both broadcasters and the FCC accomplish their goals. "What do I mean by flexibility? I mean that consolidation that preserves voices is not bad. And common ownership that provides new voices is good."

Kennard also advised broadcasters to use their spectrum to offer broadband services: "Your advantage isn't just content, it's distribution. Broadcasters have a big pipe that everybody needs—and unlike cable companies and phone companies, you don't have to invest in physical connections into every home. Eventually you'll need to develop a back channel so your viewers can have a truly interactive experience, but you'll have many options to do that. What's most important is that you already have a 20 megabit-per-second digital pipe into almost every home in America."

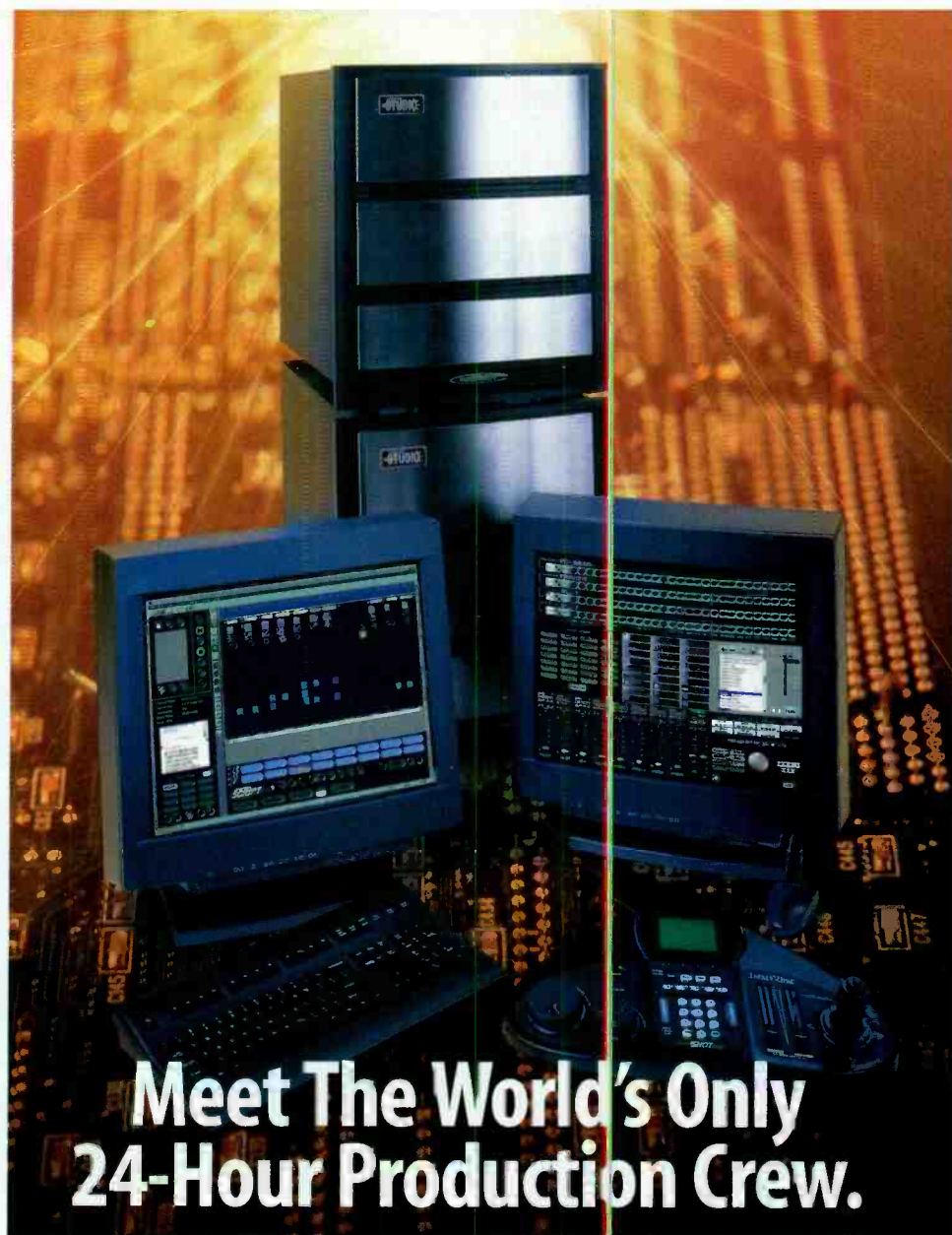
"DTV is not just about TV as we know it. It's also about data. Data is the 'killer app' of digital TV," Kennard said.

In exchange for use of that spectrum, Kennard reminded broadcasters that they have public service obligations and social responsibilities. "Foremost among them is ensuring that the airwaves foster a robust competitive environment, where we have a diversity of content and opportunity," he said. "As convergence reshapes old industry boundaries, I have two goals that will not change: promoting competition and promoting opportunity."

Kennard also encouraged broadcasters to produce quality children's TV programs and to offer employment opportunities to college students and minorities.

Finally, Kennard stood his ground on his proposal to create low-power radio stations that use unused spaces in the spectrum. Established broadcasters vociferously oppose the plan. "Frankly, it is not helpful to hear only rhetoric that 'the sky is falling' even before the rule-making comments have been filed," Kennard told broadcasters. "It is not helpful and it only serves to undermine the credibility of your arguments in the end."

Kennard assured broadcasters that the FCC was committed to maintaining the integrity of the analog spectrum as well as to the conversion to digital radio. "Low-power radio will not change that," he said. ■



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New media, new world order

Broadcast and cable urged to unite with Web, telco and satellite forces

By Elizabeth A. Rathbun

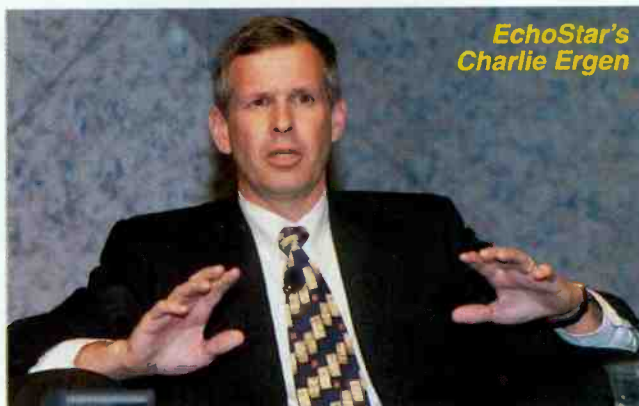
With a tenuous truce declared between broadcasters and cable operators, it's time for new allies in the trenches: satellite, Internet and even telephone providers, according to executives from those fields.

Broadcasters' place in this new world is to provide local content and perhaps in exchange endure these rapidly changing technological times, said the participants in an NAB workshop Monday.

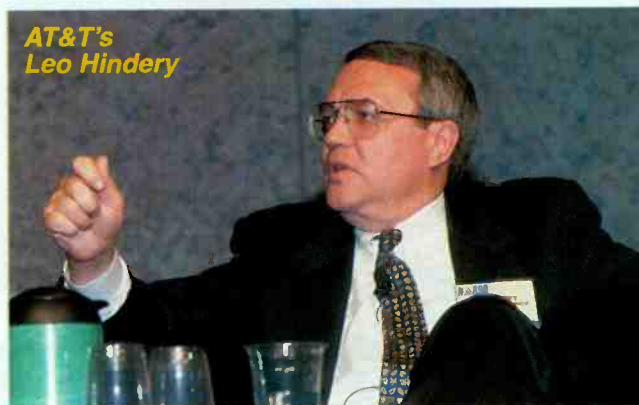
While broadcasters still draw huge audiences to prime time shows, "if you miss the opportunity [to get] an alliance partner, broadcasters are going to have a tough time surviving," said Tom Rogers, president of cable and business development for NBC.

Broadcasters, with their local content offerings, are in a strong place to be key players in the future, which seems to be forming around the Internet, the participants said. Local stations' strength lies in the "uniqueness of local inventory." To start taking advantage of that right now, station sales forces should start approaching the local MSO. "Cable operators literally have millions of local avails," Rogers said.

Meanwhile, Internet portals are desperately seeking the local content that



EchoStar's
Charlie Ergen



AT&T's
Leo Hindery

broadcasters can offer.

Video content is "very, very important" to the popular portal Yahoo!, co-founder Jerry Yang said. "The more local [that content] gets, the better the world is." The ability to stream local programming is one of the reasons that Yahoo! recently acquired Broadcast.com, the video and audio streaming site. Yahoo! already has been

working with Granite Broadcasting Corp.'s TV stations to deliver local news in exchange for promotion. Still, "the Internet is a channel to a local audience that is still largely untapped," he said.

Just don't expect video streaming to be the passive experience that many broadcast viewers are used to, Yang said. "People don't have routines anymore and we have to compete for mind share." Local news, weather and sports may take the form of headlines or short snippets that deliver information quickly with significantly lower production costs.

AT&T Broadband and Internet President Leo Hindery foresees a world in which "you will watch and surf in a highly interactive setting." Broadcasters have to respond to the fact that the Internet represents an "immediate alternative to traditional TV," he said. They must "understand that space and claim it....You have to build a world that's as friendly to the Internet experience as it is to the traditional broadcast experience."

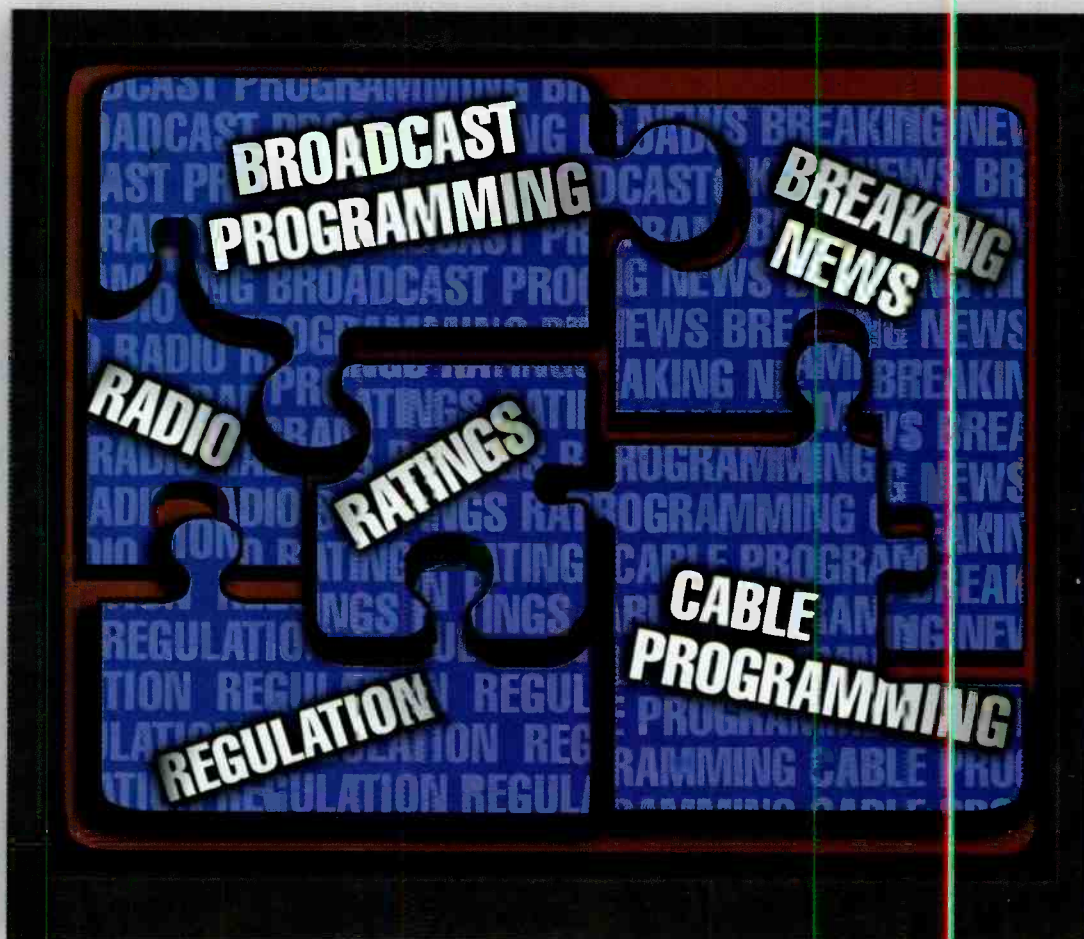
Local advertising also can be offered over the Internet. "That's where a local medi[um] can continue to have tremendous average," Yang said. ■



Yahoo!'s
Jerry Yang



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Hindery

Continued from page 8

"lofty goals" espoused in Hindery's address. "We have to move away from [being] sales organizations to [become] marketing organizations for an entirely new strata of customers. If cable does that and if broadcast does that, we'll have the advertisers thinking about using television." But after that, he said, the delivery method is still a competitive issue. "But we have to be careful, both cable and television, that in the competitive process, we don't denigrate ourselves as well as our adversary. I think that happens sometimes."

Bill Moll, vice president and general manager of WKRC-TV Cincinnati, applauded the speech. "Building alliances is inevitable," Moll said. "Our own networks are turning out to be our enemies," he said, when executives threaten to take their signals to cable. "We all have to look for new relationships."

CBS General Counsel Marty Franks said Hindery's remarks were "terrific. We're very open to the kinds of things he was talking about. It's a warmer, fuzzier TCI," than the company run by John Malone, a frequent network-basher, said Franks.

When asked after his speech how talks were proceeding with the networks on digital retransmission, Hindery responded, "pretty close," but said some "turnover at the top" of network management ranks had slowed discussions. ■

Paxson blasts FCC

By Steve McClellan

Paxson Communications Chairman Lowell "Bud" Paxson criticized the FCC as a do-nothing agency that could—if present policies persist—single-handedly derail broadcasters from the path of success in the digital age.

Speaking at a Television Bureau of Advertising forum at NAB convention Tuesday, Paxson offered "the first law of the FCC dynamics: for every action, there is an equal and opposite inaction."

That drew a big laugh from the audience. "I've got one more about my favorite bureaucracy," said Paxson. "Blessed are those who expect nothing from the FCC, for they shall not be disappointed."

Paxson said if the FCC does not deregulate, broadcasters will miss the boat on datacasting, which he said was one of the great opportunities for broadcasters in the digital age. Datacasting, he said, is one area where broadcasters can give the Internet competition because of the extra capacity within the broadcast digital spectrum. "The fastest way to transmit data will be over the air," he said. "It will liberate the computer from being wired."

Without deregulation, said Paxson,

the future for broadcasters looks bleak 10 years from now. "Broadcasters will wait too long to enter the market. They will be entirely reliant on their multiple TV channel offerings." Datacasting, he said, would be relegated to limited uses such as updating TV program schedules. "Bandwidth costs will plummet dramatically and the Internet model will be considered more efficient and timely than the broadcasters point-to-multipoint capability."

Without datacasting and similar services, Paxson said, digital TV sets will roll out slower to the consumer marketplace. That will prevent broadcasters from realizing the cost savings and operating efficiencies of "end-to-end digital technology. Broadcasters will be shocked at how much money they can lose trying to establish multi-cast channels and viable businesses."

But Paxson said he remains optimistic that the FCC will not fail to act. "I think eventually we will get their attention and the attention of Congress. So that this economically viable industry that is television and has meant so much to the history of America and scheme of things worldwide continues to prosper."

"Programming will win and we the broadcasters are the best programmers in America," Paxson said. ■

New York 245 West 17th Street, 10011; 212-645-0067; Fax 212-337-7028

Harry A. Jessell, editor

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Los Angeles 5700 Wilshire Blvd., Suite 120, 90036;
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Denver 28310 Pine Dr., Evergreen, CO 80439;
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