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SPECIAL MIDWEEK NAB CONVENTION ISSUE



COVER STORY

The bets are down

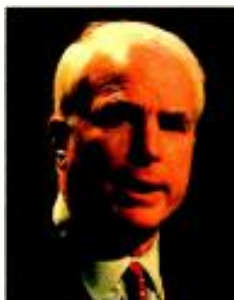
The Big Four networks have weighed in with their choices for a digital format, a mix of progressive and interlace, 720 and 1080 scanning lines. / 6

Cover illustration by
Garth Glazier

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Taking aim at Pirates Broadcasters vent their anger at unlicensed radio stations, and concern about a proposal to license 'microradios.' / 57

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Digital Photographs by Rick Rowell / Mathew Photographic Services Inc.



ABC's Bob Iger p.51



\$7 billion
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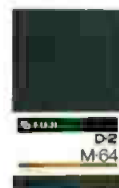
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The lines are drawn

Networks roll their own as no consensus on digital transmission standard emerges

By Steve McClellan and
Glen Dickson

There won't be a single standard, but digital television will become a marketplace reality in the fall. The four major networks are taking their high-definition television format debate to the audience.

Ostensibly, all four networks have made their format choices for the digital age. But all four have made it known in recent weeks that they will adjust those choices, if necessary, as it becomes more clear what consumers want from them. "Chicken and egg" was a term used over and over at NAB 98 by network executives explaining their need to sense where the market is headed as consumers decide what they want from the digital world.

Come November, two networks—ABC and Fox—will start airing HDTV programs using the progressive-scan format favored by the computer industry, while CBS and NBC will use the interlace format that's been in development in the U.S. for the past two



NAB attendees get a glimpse of TV's future as they watch high definition video on Panasonic's 1080i set at the Las Vegas Hilton.

decades. For Fox, that represents an upgrade of sorts to its announcement two weeks ago to embrace progressive. At that time, it pledged only to "experiment" with HDTV. But Fox network President Larry Jacobson said last week "some portion" of Fox's schedule would definitely be broadcast in 720P HDTV next season.

Proponents of 1080i argue its picture is the sharpest available HDTV format, based on pixel (bits of video information) count and the availability of

cheaper, more widely available third-generation equipment. Progressive enthusiasts cite artifacts in the interlace format, progressive's compatibility with the computer industry and the fact that the HDTV gold standard as set by ATSC is 1080 P, the availability of which is just a few years away.

At NAB, the different camps were stating their cases loud and clear. "We are abandoning interlace since it is an obsolete technology," said Fox's Andy Setos, executive vice president. News Corp.'s news

technology group. "Progressive holds much more promise in terms of features, flexibility and better-looking pictures."

But Joseph Flaherty, senior vice president, technology, CBS, argues that, "Everybody is at 1080i but two people [ABC and Fox]. That tells the story....These fellows are shoveling against the tide."

Flaherty's argument for 1080i starts with his belief that the format is simply better.

It delivers pictures with a million

Karmazin named CBS president

Mel Karmazin's already-rising star got a further boost Tuesday when CBS Corp. bumped the broadcaster's station division head to the company's number-two post, a position that includes oversight of both the stations and of CBS network President Les Moonves. The company named Karmazin president and COO, second only to chairman Michael Jordan.

Previously, Karmazin had served as chairman and CEO of the CBS Station Group, in charge of the company's 14 owned-and-operated TV stations and its radio operation, which will soon swell to 150 stations after pending acquisitions close. He now will keep control of the stations and add supervision of the broadcast and cable networks, plus CBS's syndication and production arm.

Karmazin has been heavily praised on Wall Street since taking over the stations post last May. Founder and chairman of radio giant Infinity Broadcasting, he was handed control of both the TV and radio stations

after what was then known as Westinghouse Corp. acquired Infinity in December 1996. He has been credited with immediately energizing the TV station operations, the real cash generator of any TV network, working hard to model its local sales operation after a radio station's.

Industry executives have seen Karmazin as pitted against Moonves for power inside CBS.

In the short run, the move is a big change for Moonves, who gets a bit of a promotion in the deal. Previously, he had been president of CBS Television, responsible primarily for evening dramas and sitcoms, ad sales and promotion. Now he adds the title of CEO of the network division, including CBS's news, sports and syndication operations to his responsibilities. However, rather than reporting directly to Jordan, Moonves now reports to Karmazin.

Moonves plans to install a new president of CBS Entertainment. CBS Cable President Don Mitzner also now reports to Karmazin instead of Jordan. —John M. Higgins

Where They Stand



The alphabet network is going progressive scan for both HDTV (720 P) and standard definition (480 P, 60 frame). ABC executives are as passionate in their belief that 720 P offers the best quality HDTV pictures as CBS executives are about 1080 I. ABC talks about "artifacts" when knocking interlace. CBS argues that that pixel count gives 1080 I a decided advantage over 720 P. ABC's bet is that consumers will embrace second-generation flat screen digital sets, which will offer native 720 P displays.



The Tiffany network remains committed to the interlace format for both HDTV and standard-definition digital TV. It will air 1080 I as a high-definition format, with a commitment to broadcast five hours of HDTV programming per week starting in November. The network's standard-definition digital format choice is 480 I (60 frames-per-second). The network told engineers earlier this week that it would roll out its standard digital format several months after it launches its HDTV format.



Like ABC, Fox believes in progressive, calling interlace an "obsolete" format. Last week it announced a "firm commitment" to broadcast some portion of its schedule in 720 P HDTV. Its standard-definition format choice is 480 P (30 frames). The progressive standard offers a more flexible "family" of digital formats that allow for easier adjustability as the marketplace warrants, Fox argues. It's also more convergence-friendly, it says.



The peacock network has placed its feet firmly in both the progressive and interlace camps. NBC officially confirmed for the first time at NAB its selection of 1080 I for HDTV and 480 P (60 frame) for its standard-definition digital format. For most viewers, network executives say, picture quality is virtually indistinguishable between 1080 I and 720 P. Per a deal with Sony, "The Late Show" will be shot in HDTV starting next year.

more elements than 720 P, he said. But, he acknowledged, the superiority of 1080 I is fully apparent only on big-screen TVs.

But Flaherty's bosses, CBS Chairman Michael Jordan and Executive Vice President Bill Korn, both said the network is keeping all of its digital options open. "We want to comply with our commitment but also gain experience so we can gauge consumer reaction," to different products and services, said Jordan. "We will experiment with a lot of different formats and multiplexing and other" techniques that may yield new business opportunities.

Korn is the CBS executive responsible for overseeing the transition to digital. Right now he said there are more questions than answers about digital applications. "This ambiguity suggests we have to be flexible and agile in our approach and keep our options open as we move down the road."

Gary Shapiro, head of the Consumer Electronics Manufacturers Association, praised CBS for embracing 1080 I and criticized Fox and ABC for selecting 720 P. "CBS has chosen the highest standard," said Shapiro, and by doing so has "chosen to respect its viewers." As to "those who do less," says Shapiro, "it's like switching to color but saying let's just try one color for a while and add the others incrementally."

But ABC Network Television President Preston Padden fires back that 720 P is simply better and not less than 1080 I. "This is an upgrade over 1080 I," he argues, for many of the same reasons expressed by Fox.

Of course, Shapiro and Padden have different agendas when it comes to digital TV sets. Manufacturers have invested \$1 billion in developing the first generation of digital sets. Those sets can receive all digital formats, but will display them in 1080 I, not 720 P. CEMA wants to see as many first-generation sets sold as possible to recoup the industry's investment. ABC, on the other hand, is betting that consumers will be more likely to buy second-generation flat-panel sets, which will natively display 720 P.

Preston Davis, ABC president of engineering, admitted that broadcasting in 720 P might put ABC's pictures at a disadvantage on some early 1080 I sets. "But our sights are set a little further down the road," said Davis.

There's another issue of concern about first-generation receivers—whether they're good enough to receive pictures with just an indoor antenna in the home. Both Fox and Sinclair Broadcasting (Fox's largest affiliate group) say they've both had extensive talks about that issue with manufacturers. "We've talked to them and it's not too encouraging," said Nat

Ostroff, vice president engineering, Sinclair. It's an important issue because, as Fox's Setos puts it, "these DTV signals won't be coming down the cable, at least initially."

Padden also said that ABC's engineers, and others, believe that progressive scan compresses more efficiently than 1080 I. In effect, that means more of the network's allotted spectrum will be available for other business applications. "That's at the heart of it for me," he said, quickly adding that he has no idea what those other businesses are.

Meanwhile, NBC showed its cards at the NAB show for the first time. It's going with 1080 I for HDTV and 480 P for standard definition TV. The network said last week it signed a deal with Sony to build an HDTV production facility for the "Tonight Show with Jay Leno" in Burbank, Calif. The deal is actually an extension of an earlier agreement under which Sony will develop digital production facilities for the five upcoming Olympics that NBC has the rights to.

NBC Stations president Scott Sassa said the network would initially broadcast prime time programs in HDTV that are shot on film, which include the network's entire Thursday night lineup. But as of last week, no specific shows were being committed for HDTV display.

But while NBC has joined CBS in supporting 1080 I, the network is taking



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a different technical approach to 1080 I. While CBS is advocating full-bandwidth 1.5 Gb/s routing and effects equipment at both the network and affiliate level, NBC has figured out a cost-effective way to support 1080 I within its existing "GEnesis" 601 component digital (270 Mb/s) plant in New York. According to NBC vice president of broadcast and network engineering Charles Jablonski, NBC will compress 1.5 Gb/s 1080 I to a mezzanine level of 270 Mb/s, allowing it to use its existing Tektronix Profile video servers and Grass Valley 601 routers.

"We'll be able to use all our 601 plumbing," said Jablonski. Jablonski added that NBC affiliates and O&O's will also be able to route the hi-def signal at 270 Mb/s through their plants, only decoding the signal back to baseband 1080 I (1.5 Mb/s) before the final compression at 19.4 Mb/s for local HDTV broadcast.

For NBC's 480 P transmission in non-prime dayparts, the network will probably use the same strategy as ABC, sending a 480 I/60 satellite feed to affiliates and relying on them to deinterlace the signal to 480 P/60. "We have no plans for multicasting [in 480 P]," said Jablonski. "We'll just be upconverting what we have on the network."

NBC will obviously need some upconversion and downconversion equipment, but has not yet picked a supplier. The network also hasn't picked a master tape format for its 1080 I material, but Jablonski said the 1080 I material demonstrated to affiliates at NAB was mastered on JVC's 50 Mb/s Digital-S format. "So we could use DVCPRO 50 too," he said, alluding to Panasonic's new 50 Mb/s format. Jablonski said that NBC doesn't need to use Panasonic D-5 HD tape, which is the HDTV master format of choice for both CBS in 1080 I and ABC in 720 P.

For the most part, public broadcasting is staying out of the format fray. Marilyn Mohrman-Gillis, a vice president of

America's Public Television Stations, said public stations are split on the HDTV format issue. Some will air 1080 I; others, 720 P, she said. "They'll go with both formats and allow consumers to make the choice."

Public stations intend to broadcast HDTV only in prime time, Mohrman-

the 1950s.

"HDTV is a giant step, not an incremental step, forward in the state of the video arts."

The computer industry seems pleased by the direction the format debate has taken. Intel's Ron Whittier said he was encouraged by the movement the com-

puter and broadcasting industries have made toward each other over the past year. While ABC and Fox have committed to computer-friendly progressive formats, Intel has said it will support reception of all formats—interlace and progressive. "Both sides are looking at the opportunities presented by the others."

Only yesterday, Microsoft struck a deal with Sony Corp. to collaborate on the convergence of PC and consumer AV electronics platforms. Sony will license Windows CE from Microsoft for future products, while Microsoft will license Sony's Home Networking Module for use in Windows CE. Microsoft also said it will support 1080 I as a production and archiving format, while Sony agreed to develop 480 P production equipment (it already has developed a 480 P downconverter for its 1080 I studio cameras).

Their mutual endorsement of 1080 I as the digital production format of choice doesn't represent any retrenchment in Microsoft's position on digital TV transmissions, said Craig Mundie,

group vice president of Microsoft's digital TV group. "We have always recommended that people capture video in the highest quality they can afford," said Mundie.

But the deal also indicates Sony's interest in progressive scan, according to Mundie, who points to the objective of defining interfaces for PCs and consumer AV devices as the crux of the pact. ■

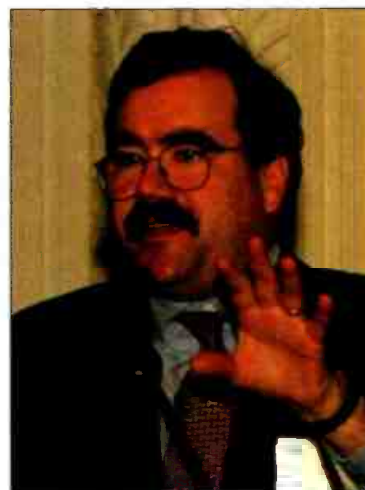
Richard Tedesco contributed to this story.

Take your pick—ABC Network Television president Preston Padden (l) tells the press progressive scan is where it's at.

Fox's chief technologist Andy Setos (below) says progressive offers better pictures and that the interlace format is "obsolete."



Joseph Flaherty, senior vice president, technology, CBS, says interlace is best.



NBC engineering head Charles Jablonski likes interlace for HDTV and progressive for standard-definition digital TV.

Gillis said. During the day, she said, they will opt for lower-resolution SDTV so they can send multiple channels of instructional programming over their channels. A progressive format may be more practical and, because of its compatibility with computers, "more consistent with our mission of broadcasting multiple educational services."

Dick Wiley, the former FCC chairman who chaired the DTV standards committee, argues against settling for SDTV formats. Promoting SDTV instead of HDTV would have been like promoting "sepia-toned television" over color TV in

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Mundie, Stearns see progressive future

By Richard Tedesco

Microsoft Corp. and Compaq Computer are confident that the progressive-scan transmission scheme they back will win a major share of the marketplace initially and, ultimately, prevail over interlace.

Both companies see recent announcements that ABC and Fox will employ the progressive-scan format as particularly encouraging. ABC is going with 720-line progressive and Fox earlier declared its preference for 480-line progressive—a format NBC will use alongside 1,080-line interlace. Fox will also try out 720 P as an HDTV format. And both the companies expect PBS, which recently aligned with Intel on digital broadcasting, to play a role in setting the digital pace for broadcasters. “My sense is that even within the public broadcasting environment, you’re going to see split decisions,” says Craig Mundie, group vice president of Microsoft’s digital TV unit.

Mundie anticipates some PBS stations will commit to progressive scan exclusively in preference to interlace. “The focus on it has enabled people to have a freer choice in determining equipment availability,” says Mundie, who adds that he views the past year as an educational experience since the pitch Microsoft, Compaq and Intel Corp. made touting progressive at last year’s NAB.

Mundie offers no predictions on similar split decisions by commercial network affiliates, but points out that station groups that own affiliates of different networks could create a similar scenario. The business sense progressive makes will really drive the market, according to Microsoft and Compaq. “They’re not coming over to our side. I think they’re making the right business judgments for their businesses,” says Bob Stearns, Compaq senior vice president.

In Mundie’s view, Fox has a particularly aggressive interest in developing “new applications” for their spectrum. He notes that ABC had been inclined toward progressive even before the proselytizing from the computer triumvirate. Mundie sees NBC’s endorsement of 1080 I for HDTV as a politically “safe” one.

And Microsoft’s leading progressive-scan evangelist suggests convergence in

Since last year, Intel has modified its position on the respective digital broadcast standards, declaring its intention to decode from any format, while continuing to push progressive.

the smart set-top/TV business that it seeks to dominate is the crucial point about emerging digital technologies. “We think digital TV is all about having intelligence in the receiver,” he says, noting that the cost of digital set-tops is a prime concern to Tele-Communications Inc., which will have Microsoft’s CE operating system incorporated in digital boxes now in the design phase.

Stearns also says that the cost of deployment is among Compaq’s prime concerns, and predicts there will be “millions” of PCTV receivers in the con-

sumer pipeline by next year. That harkens back to his predictions last year that there would be tens of thousands of high-end PCs in retail outlets ready to receive progressive-scan programming. And Stearns is confident that there will be progressive-scan content available for distribution by this time next year, when he expects the progressive-versus-interlace debate to be largely resolved.

Since last year, Intel has modified its position on the respective digital broadcast standards, declaring its intention to decode from any format, while continuing to push progressive. While Microsoft and Compaq insist they’re still on the same wavelength about the impending advent of digital TV, Stearns points out that Intel sells chips to enable decoding, whatever the formats. “Our problem is, we need to go to the marketplace,” says Stearns. “Intel wins either way.”

Microsoft and Compaq see the coming year as one of implementation for the broadcasters, and Mundie followed up last year’s progressive sermon with one essential message to broadcasters this year: “Build products.” ■

McCain protects digital turf

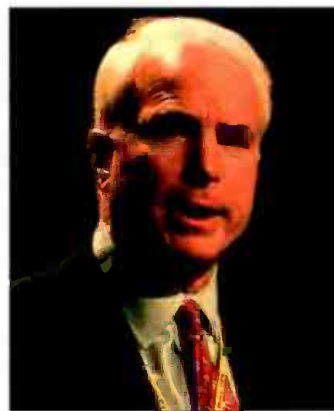
Says any new broadcaster DTV public interest obligations should come from Congress, not FCC or Gore commission

By Elizabeth A. Rathbun

Senate Commerce Committee Chairman John McCain (R-Ariz.) has warned the FCC and the Gore Commission that any new public-interest requirements in a digital-TV world should be decided by Congress, not “unelected bureaucrats.”

At NAB ’98 on Sunday (April 5), McCain said the groups are “engaged in a curious foot race with one another.” As the Gore Commission “ruminate[s] about new programming obligations” that may be required of digital broadcasters, “the FCC, apparently unable to contain its enthusiasm, is proceeding apace on the same issues.”

His comments apparently were aimed



McCain doesn't want FCC infringing on Congress

at FCC Chairman William Kennard’s recent proposal to require free airtime for political candidates. Kennard backed off last month after he was met with a congressional fire storm of resistance.

The FCC’s role in the DTV-conversion process is “cleaning up interference problems, making sure tower siting pro-

ceeds smoothly and sorting out must-carry,” McCain said. “In short, it means creating DTV channels. It doesn’t mean programming DTV channels.”

While broadcasters should provide some return to the public for their use of the digital spectrum, which McCain



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did not specify, that should be decided "by Congress, not by three unelected bureaucrats."

McCain's swipes at the commission continued. It is not acting swiftly enough in re-examining the broadcast ownership rules, as directed by the Telecommunications Act of 1996, he said. "I intend to make sure the FCC follows the will of the Congress, not its own whims," he said.

But he endorsed Republican Commissioner Michael Powell's and Democrat Kennard's encouragement of industry-based initiatives to encourage more women and minorities to own stations. ■

McCain criticizes NBC, BET

Senate Commerce Committee Chairman John McCain (R-Ariz.) says he feels "deep and bitter disappointment" that NBC and BET have dropped out of the TV ratings system. Without a uniform front, broadcasters might find themselves the target of increasing calls for what McCain called censorship.

"I adamantly oppose anything that approaches censorship," McCain said on Sunday. But, he said, he "strongly support[s] a uniform ratings system."

As the number of program choices rises with digital TV, content criticism will rise, McCain predicted. "The best way to fight off efforts of censorship of broadcasting ... is to provide parents with the tools [to help make program choices], just like the movie business does," he said.

"I am not threatening no one with nothing," McCain hurried to add. "But I hope that good sense would prevail." —Elizabeth A. Rathbun

Marcus Cable sold for \$2.7 billion

Buyer is former Microsoft co-founder Paul Allen; Jeffrey Marcus to stay

By Price Colman

Billionaire investor Paul Allen is buying Marcus Cable Co. for \$2.775 billion in his largest personal investment to date.

Terms of the deal call for Allen to buy out all limited partnership interests. Limited partners include Goldman Sachs, with a 35.68% interest; Hicks, Muse, Tate & Furst with 18.63%; Freeman Spogli & Co. with 15.99%; Greenwich Street Capital Partners with 7.67%; Jeffrey Marcus with 14.28% and Marcus Cable Co. with 6.24%.

Marcus Cable founder Jeffrey Marcus will stay on, as will much of the Marcus Cable's current management team. As a result of the deal, Jeff Marcus becomes managing general partner and retains titles of chairman, president and CEO.

That's good news for Marcus employees who will be less likely to see turmoil in the ranks as a result of continuity at the top.

A Marcus spokesman said Jeff Marcus will retain an interest in the company but did not specify how much that interest is. Also unclear is how much of the \$2.775 billion will be used to retire portions of Marcus's \$1.6 billion in long-term debt.

Allen, who co-founded Microsoft with Bill Gates, says his acquisition of privately held Marcus, the nation's 10th largest cable MSO with 1.2 million subscribers, will help further his

vision of a connected world.

"Over 20 years ago, even before I founded Microsoft, I began thinking about a connected future ... I called that future the wired world," Allen said during a press conference announcing the deal with Marcus. "I have been investing in companies that are different components of that strategy. ... By investing in Marcus, I will finally have some wires for my wired world."

Unlike Microsoft's \$1 billion investment in Comcast a year ago, Allen's acquisition of Marcus had little immediate impact on the price of cable stocks. One reason: The deal did not raise the bar on cable system valuations.

Cable investors clearly were unimpressed. Cable stocks traded up only slightly on the news and by late Monday afternoon had actually dropped around 50 cents across the board.

According to terms that Allen, his chief investment strategist William Savoy and Marcus founder Jeffrey Marcus worked out a week ago, the deal values Marcus's cable systems at about 11 times running-rate cash flow when the deal closes.

"If this were going to be a real mover for the cable industry, you would have seen a consortium consisting of Comcast, Cox and TCI come together for the purpose of bidding on Marcus and taking the properties they wanted," said Denver cable analyst Chuck Kersch.

"If those cable operators were not willing to belly up to bar, they know

there's a premium being paid above and beyond what they know these cable systems are worth."

Among other Marcus bidders were Comcast, Charter Communications and a TCI-led consortium. An executive at one MSO that was bidding on Marcus said the price was simply too high. Although Allen's involvement comes as a surprise, the deal itself does not.

Jeff Marcus disclosed earlier this year that he had retained Goldman Sachs & Co. to advise the company on strategic alternatives, including possibly selling it.

Allen is best known as co-founder of Microsoft in 1975 with Bill Gates. Allen left Microsoft as executive vice president of research and product development in 1983 after being diagnosed with Hodgkins disease. But after treatment brought the condition into remission, he began aggressively investing in technology companies that played to his vision of a wire-world that uses high-speed networks as the links between computer communications devices.

Through his Vulcan funds, Allen holds roughly \$1.6 billion in shares of technology firms. Those investments are largely overseen by Savoy.

Allen also recently invested \$500 million in Dreamworks SKG and is owner of the National Football League's Seattle Seahawks and National Basketball Association's Portland Trailblazers. ■



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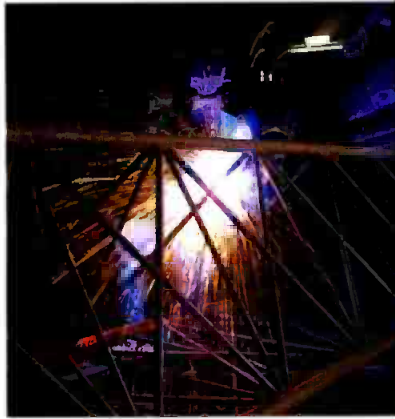
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Service with a \$6.85 billion smile

NAB, Bonneville announce joint effort to continue spotlighting public service

By Chris McConnell

NAB President Eddie Fritts this week officially pulled the curtain on the association's report pegging broadcast annual public service efforts at \$6.85 billion (BROADCASTING & CABLE, April 6).

"That's billion with a B," Fritts said in announcing the report. "For the first time in the history of our industry, we have a number that quantifies broadcasters' voluntary contributions to improving the quality of life in towns across America."

Fritts urged the association's members to promote the study results in their own communities, while the NAB takes the number to regulators and lawmakers. "Use our new information to graphically demonstrate the value of broadcasters' community involvement," Fritts said.

He also stressed the opposition broadcasters face in Washington. "Many in Washington persist in looking at thousands of local communities in the collective—and they have a hard time resisting the temptation to dictate new broadcast rules and responsibilities to help cure the nation's ills."



Eddie Fritts promotes broadcasting's public service.

To support the assertion, Fritts showed his audience a series of video clips beginning with President Clinton's State of the Union call for free airtime for political candidates. Convention attendees also saw clips of Vice President Al Gore, FCC Chairman William Kennard and participants in the "Gore commission."

"Let me say unequivocally to all that challenge us: There is no industry more dedicated to bringing community service

home than broadcasting," Fritts said.

He also said the NAB Education Foundation and Bonneville International Corp. are embarking on a joint effort to continue spotlighting the public service efforts of local stations. The groups will be holding an "Annual Community Service Summit" in Washington. The summit will feature awards for children's programming along with a day-long symposium on broadcast public service.

NAB officials highlighted the association's report by donning yellow buttons bearing the \$7 billion estimate.

The industry's public service effort was not the only issue cited by Fritts, however.

Opening the convention, Fritts also recited a list of concerns facing the association in Washington. Among them: digital TV tower siting, digital TV must-carry, broadcast ownership restrictions and pirate radio.

Fritts also discussed the FCC's recent interest in studying proposals to establish a low-power radio service.

"It is the FCC's role to ensure spectrum integrity, and the micro-power radio proposal challenges that premise," Fritts said. ■

Harris rolls out DTV Express

Harris and PBS officially introduced their "DTV Express" truck on the NAB exhibit floor Monday, realizing the cooperative DTV educational effort they announced at NAB '97. Harris executives Bruce Allan and E. Van Cullens and PBS President Ervin Duggan were joined on the dais by FCC Chairman William Kennard, who said that DTV technology "has been birthed—now it's time to hit the road."

Kennard said that now that the "naysayers" in Washington are quieting down, "DTV is becoming a reality." He also said that the FCC's job in the DTV roll-out is "over now," with the exception of settling DTV must-carry and the fee structure for ancillary DTV services.

DTV Express also got a boost from Philips, which has come on board as the major sponsor of the project. While Philips didn't disclose financial details of its participation in the Harris/PBS project, Philips VP/GM of North American sales and marketing Jeff Rosica said that "it's a major investment on our part, but it's necessary" for educating stations and consumers. While the DTV Express currently



Harris is quickly netting orders for its FlexiCoder HDTV/SDTV encoding system.

has 1080 I and 480 I production equipment, Rosica indicated that it will soon have Philips' new 480 P cameras (the truck's consumer exhibit area already has a 480 P flat panel display from Philips).

The 66-foot DTV Express truck will soon embark on a 20-city educational tour, beginning with a stop in Los Angeles May 4-8. Forty-three manufacturers have donated equipment to the vehicle, which includes production, transmission and display capabilities.

In other Harris news, the company is racking up sales of its FlexiCoder HDTV/SDTV decoder, which was developed by Lucent Technologies. New sales include A.H. Belo's KING-TV Seattle, Scripps-

Howard's WXYZ-TV Detroit, Allbritton's WJLA-TV Washington, and Gannett's WUSA Washington and wxia Atlanta.

"We're doing very well with encoders, and a lot of people are buying encoders along with transmitters on a one-for-one basis," said Allan, VP/GM of Harris's Broadcast Division. "They like the fact that it's a total hi-def system."

—By Glen Dickson

Blazing a trail in Philadelphia

WCAU(TV) Philadelphia

Owner: NBC
Analog channel: 10
Digital channel: 67
Network affiliation: NBC
Expected DTV launch date: Nov. 1, 1998

To meet the pledge of digital TV transmission by the Nov. 1 deadline, early adopters such as WCAU(TV) are going to have to work harder and smarter than the latecomers. "There's close to 40 of us that need to figure out for ourselves a solution to get on the air," says Sim Kolliner, WCAU director of engineering and operations.

Permanent solutions to complex DTV operational issues may have to wait as markets mature for both DTV transmission and receiving products.

For example, a dual-fed power system with back-up is being designed for WCAU's digital transmitter site—not unusual, considering the size of the market.

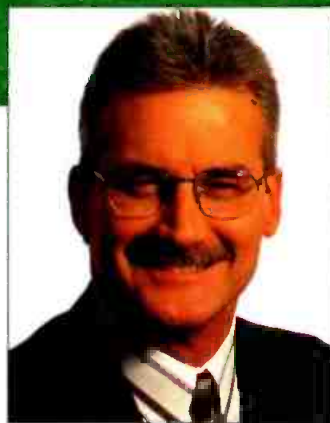
However, only one transformer goes in for now, and the generator might not be installed for another year or two. "There's no sense backing up a transmitter if there are only four people out there who can't watch if it goes down," Kolliner says.

Sets (or at least converters) will be sold, however, especially in a market such as Philadelphia, where all four major network affiliates are expected to go on-air with digital by the Nov. 1 deadline.

But for WCAU, if the money doesn't have to be spent up front, it won't be,



Engineering director Sim Kolliner says one important equipment acquisition remains: 'I need ... a set for my home. I'll be damned if I'm going to put this thing on the air and not be able to watch it.'



according to Kolliner.

WCAU plans to begin broadcasting on Nov. 1 with a 50-kw Comark transmitter and a Dielectric stacked antenna (the UHF digital antenna on the bottom supports the VHF NTSC antenna), which will be installed on the station's existing tower. Some tower modification and strengthening will be required to accommodate the additional load. "We're going to remove the top three sections of cantilever, put in a new 26-foot section, and then the double stack, which will put us back at the same height we are now," says Kolliner.

A construction permit has not been obtained, but the station's executives are not expecting problems or delays in the permitting process.

Upgrading to digital equipment is expected to cost between \$2 million and \$4 million, depending on

communications have been identified as possible STL solution providers. "We're going to talk to those companies and see what they've got going," Kolliner says. "There probably will be more companies unveiling solutions at NAB."

Kolliner expects a standard mezzanine-level bit rate will be hashed out some time soon after NAB, which likely will be followed by a flurry of

equipment purchases, including satellite receivers, distribution equipment, routers and switchers. "The manufacturers are all going to say, 'this is what we have,' and the industry is going to say, 'this sounds good,' and start ordering," he says.

Promotion is proving to be a sticky issue. While discussions with Philadelphia area retailers have taken place, "it's a little difficult now when you're talking about something that the client can't see," Kolliner says.

Retail tie-ins aside, WCAU plans to wow the public with an off-air HDTV demo in mid-April at a three-day fitness expo that the NBC affiliate sponsors in the Philadelphia area.

One more important equipment acquisition remains. "Sometime between now and November, I need to find a manufacturer of a set for my home," Kolliner says. "I'll be damned if I'm going to put this thing on the air and not be able to watch it."

—Andrew Bowser,
B&C correspondent

Leading the charge from South Bend

WNDU-TV South Bend, Ind.

Owner: University of Notre Dame
Operator: Michiana Telecasting Corp.
Analog channel: 16
Digital channel: 42 (preliminary assignment)
Network affiliation: PBS
Expected DTV launch date: Late 1998



"The station wants to 'move ahead as soon as we can despite the fact that we are a smaller market. ... We want to be at the forefront of digital television."

—Michiana President Jim Behling

TV viewers in Indiana may not even be thinking about buying digital sets when NBC offers its first HDTV signal, but affiliate WNDU-TV plans to be right there to pass that signal along.

"Our plans are to move ahead as soon as we can, despite the fact that we are a smaller market," says Jim Behling, president of Michiana Telecasting Corp., the station's operator. "We want to be at the forefront of digital television."

Owned by the University of Notre Dame, WNDU-TV has been a leader in technological developments since it went on the air in the mid-1950s. Over the years it's been the first in its market with color cameras, instant replay (initially used for golf remotes back in the '60s), live helicopter coverage and, most recently, remote-controlled location cameras.

In terms of digital, there's only one snag: South Bend sits about 170 miles from the Canadian border, and neither Canada nor the United States is sure what to do about stations that fall within 250 miles of the border. "We have to wait for that, and we don't know how long it's going to be," Behling says. "It's frustrating, but not unusual, if

you know how government—or in this case governments—work."

As part of market 85, WNDU-TV doesn't have to worry about construction deadlines for several years. Not having a confirmed channel assignment, however, could be a major challenge if the station expects to make retransmission of network digital pictures a reality by NBC's unofficial start date of fall 1998. For example, although the station's application for a construction permit has been filed, it will be granted only after the two countries can resolve the border issue.

Short-term costs of digital conversion are expected to total \$2 million–\$2.5 million, including the cost of the antenna, transmitter and supporting infrastructure. WNDU-TV initially will broadcast from a Comark-built antenna, which will allow transmission of digital and analog signals. All the paperwork and contracting are in place for the enlargement of the station's transmitter building and construction of the station's transmitter, which it also will purchase from Comark.

Completion hinges on WNDU-TV's final channel

for it," Behling says.

The eventual cost of digital transmission will depend on future decisions—what kind of digital or high-definition cameras are used, what news studio redesigns are necessary to accommodate a 16:9 ratio, and to what extent production equipment will go digital.

Like most other broadcasters, WNDU-TV expects HDTV to air initially in prime time and for special events, while the off-hours may be filled with local programming or news, weather and sports networks. "There may be some wonderful

opportunities there, and I'm sure NBC realizes that," Behling says. "It wouldn't surprise me in the next round of discussions if the network [were to] look for some clearances on digital spectrum where they are not providing us with HDTV."

Behling has no illusions about consumer readiness for converters or pricey digital sets in market 85; like most of middle America, South Bend still has its share of homes with black-and-white sets in workshops or back bedrooms. Even so, he projects that six to seven years after digital TV is deployed, up to 50% of households in this market will use at least one digital set.

"If history holds true, these kinds of technical innovations are costly at first, but come down in price fairly rapidly," he says.

The overall package also includes a new routing system, additional microwave equipment and other equipment that will support digital transmission. "The supporting infrastructure is extensive and expensive—I think that's the watchword

for it," Behling says. "The overall package also includes a new routing system, additional microwave equipment and other equipment that will support digital transmission. "The supporting infrastructure is extensive and expensive—I think that's the watchword

for it," Behling says. "The overall package also includes a new routing system, additional microwave equipment and other equipment that will support digital transmission. "The supporting infrastructure is extensive and expensive—I think that's the watchword

—Andrew Bowser

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WSB-TV Atlanta

Owner: Cox
Broadcasting
Analog channel: 2
Digital channel: 39
Network affiliation: ABC
**Expected DTV launch
date:** mid-1998

As one of the 24 stations that has pledged to be up and running with digital transmission by November 1998, WSB-TV is ahead of schedule. The station's FCC construction permit has been in place since October 1997. Currently, the station is dubbing some 4,000 spots and interstitials from analog to digital.

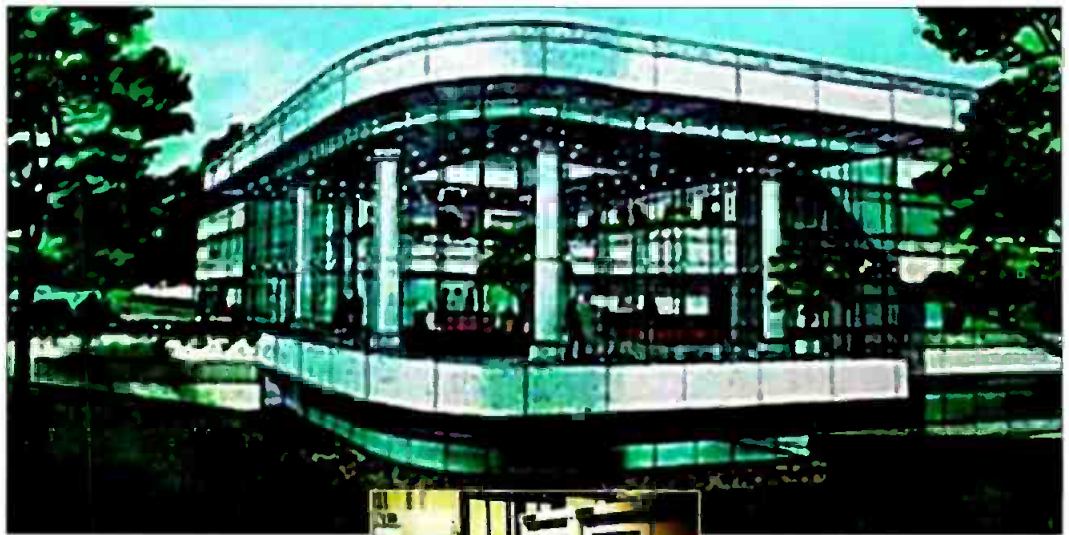
"We are dubbing spots into the file servers now," says John Swanson, vice president of engineering. "We should have those on the air in the next two to three weeks."

The station's transmitter facility, budgeted for \$1.5 million–\$2 million in equipment cost, was completed in November 1997. "We could almost put it [digital] on the air this week if we had to," Swanson says. The facility contains a Dielectric DTV antenna, hooked up on the mast right below the station's NTSC antenna, which is located a few miles away from the main studio. In addition, the facility uses a single-channel standard-definition Harris-Lucent Technologies FlexiCoder. The device allows stations to adapt to multichannel, 1080 I, 720 P and other formats by plugging in add-on boards.

The transmitter itself is a Harris SigmaCD with a single IOT power amplifier running about 25 kw.

Although licensed to run at a megawatt ERP, the station is set to start broadcast-

Ahead of schedule in Atlanta



WSB-TV will begin moving into a \$35 million all-digital facility in May. At right is the station's new DTV Harris 100 kw transmitter, outfitted with an ATSC-compliant encoder.



ing at 480 kilowatts on digital ch. 39, at least until digital sets proliferate in Atlanta and the station can afford to run digital at higher power.

WSB-TV's extensive digital studio component won't be fully ready to go until at least early summer. Built around the existing WSB-TV plant in downtown Atlanta, across town from Cox Broadcasting's national corporate headquarters, the new 200,000-square-foot digital facility carries a price tag of some \$35 million, according to Swanson. Parking lots, maintenance areas and growth space add about 100,000 additional square feet to the construction project.

The all-digital plant, based on a mezzanine compression data rate of 270 Mb/s, contains mostly Sony-manufactured equipment, including 16:9 switchable cameras, digital betacams, routers, switchers and file servers. Most of the high-end graphics equipment is supplied by Quantel.

A discount-pricing structure has been set up with both Sony and Harris to equip all 11 of Cox Broadcasting's

owned and/or operated stations. KTVU(TV) also should be on the air with digital by the end of the year, although this San Francisco-based station's plans are not moving along as quickly as management would like because of complex local regulatory requirements. "The permitting processes are just extremely difficult and slow," Swanson says.

Back in Atlanta, the full-scale move to the digital facilities isn't scheduled until early summer, so that the news operation won't be interrupted until after the May book is over. And while all the construction and purchasing ducks are in a row, WSB-TV has yet to settle on an official launch date. Lining up the station's dignitaries for a well-publicized launch ceremony is proving to be harder than implementing the transmitter plan. June or July looks

most likely at this point. "We've tried about three times now and have not been able to coordinate schedules yet," Swanson says. "It's not easy when the ducks keep swimming in all directions."

Taking ABC at their word that they will start transmitting Disney movies in HDTV by Nov. 1, WSB-TV is equipping for 720 P pass-through. The rest of the broadcast day will be transmitted at 480.

It's unclear whether additional formats will be used. "We are still going through a lot of management strategy meetings trying to determine just how we want to equip the [Cox Broadcasting] stations and how we want to program them," Swanson says. "Those decisions haven't really been made yet."

Likewise, WSB-TV's digital strategy is definitely still in the preliminary stages. Management is scheduling regular meetings to discuss a plethora of issues, including multicasting, datacasting, and retailer cross-promotions.

"Internally, we talk about it all, but no decisions have been made," Swanson says. "We're just trying to keep an open mind and fulfill our promise of compliance to the FCC."—Andrew Bowser, B&C correspondent



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Out front in Honolulu

KITV(TV) began digital simulcasting of standard-definition programming on Jan. 15, putting this smaller market ahead of many counterparts. The station plans to broadcast ABC's HDTV signal as soon as the network delivers it.

KITV's lead in DTV deployment can be traced back nearly three years, when station management



Engineering director Greg Johnson says: 'Sure, we're using quite a bit of electricity transmitting to no one at the moment, but we're learning.'

to carry on with it is already available," Johnson says. "You could get into digital-video broadcasting in a not-really-too-expensive way and lay the groundwork for whatever is going to come along in the next few years."

Since KITV relies heavily on microwave transmission to cover great distances, the expenditure for microwave technology is necessarily higher than it would be for a typical station in a dense urban area. "That would not be typical of a mainland station where they just have a one-hop STL. We have an inter-island microwave system that we have to maintain," Johnson notes.

The big question today is how the station and its satellites will interface with network DTV fare. There are uncertainties as to what format or formats ABC will use and what equipment will be needed to interface the station's current 480 I system with the 720 P programming that ABC is saying it will provide.

"The missing piece is how we will either down-convert their signal to match ours or upconvert our signal to match theirs before trans-

mitted its all-new facility would be outfitted with serial digital video. Then the station leadership decided that compressing and transmitting digital video was the next logical step.

"Our management said, 'Why not? Let's do it. Let's go ahead and buy some transmitters and see if we can make this stuff go out over the air,'" says Greg Johnson, director of engineering.

KITV purchased Itelco water-cooled solid-state digital transmitters for its three transmitters: one for its flagship enterprise in Honolulu and one each for its unmanned satellite stations—KHVO(TV) Hilo (best known as the recipient of the first construction permit for commercial DTV broadcast) and KMAU(TV) Maui. (The Maui satellite is currently off the air following a regulatory problem involving RF interference with nearby telescopes and astronomical instruments that share the

unit's volcanic-mountain perch.)

Small-panel antennas from Australian vendor Radio Frequency Systems were purchased for the UHF DTV transmitter and attached to the station's existing masts. The antennas are small enough that the masts are still within existing wind-loading, weight and height restrictions, Johnson says.

The station then purchased Itelco microwave radio equipment.

Johnson says that so far capital outlay for the early-bird upgrade is about \$940,000 for the three transmitters; another \$400,000 for digital microwave equipment; about \$150,000 for the antenna project, installed, and another \$300,000-\$400,000 for digital compression equipment.

"Our philosophy was that we didn't need to be scared of being a digital-video broadcaster, and that much of the technology that is needed

KITV(TV) Honolulu

Owner: Hearst-Argyle Television

Analog channel: 4

Digital channel: 40

Network affiliation: ABC

DTV launch date: Jan. 15, 1998

mission," Johnson says. "We haven't answered those questions yet, but they're not insurmountable."

Although simulcasting is the order of the day, the station is ready for DTV production using a 16:9-capable 525-line serial digital-video system, which can be broadcast as straight 480 I or converted to another standard.

Johnson doesn't believe that the smaller Hawaiian market will be either ahead of or behind the curve in embracing the new digital television sets, although he expects that the vast majority of consumers will purchase set-top decoders and use their existing NTSC 4:3 screens for a while.

For the present, KITV's digital-signal audience is small, with not even a shopping mall demo to wow consumers. "Sure, we're using up quite a bit of electricity transmitting to no one at the moment, but we are also learning," Johnson says.

Among the lessons: digital transmitters are "very easy" to operate, requiring about as much attention and maintenance as comparable analog TV transmitters. In addition, monitoring and adjusting digital compression equipment is not treacherous terrain for staff accustomed to working with analog. "That's important, too," Johnson says. "There's virtually no change in how the station operates on a day-to-day basis."

—Andrew Bowser
B&C correspondent

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KOMO-TV Seattle

Owner: Fisher Broadcasting
Analog channel: 4
Digital channel: 38
Network affiliation: ABC
DTV launch date: April 2, 1998

All systems are go at KOMO-TV

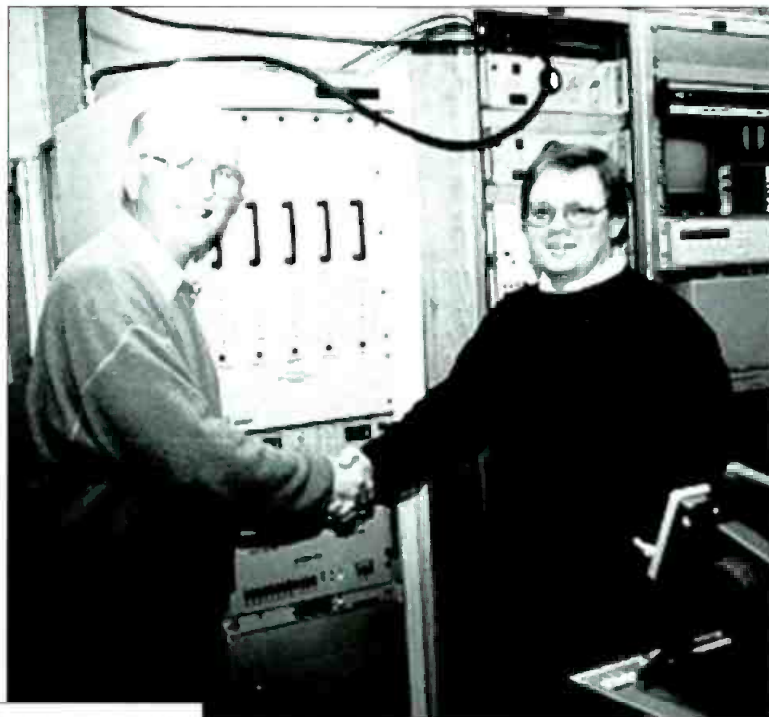
Patrick Holland, vice president and director of engineering for KOMO-TV Seattle, spoke to BROADCASTING & CABLE on March 31, the day after the FCC granted KOMO-TV authorization to begin digital transmission on ch. 38.

"We're cleared and ready to go. In the wake of interference to heart monitors involving WFAA-TV, I want to emphasize that the FCC has been very supportive and interactive with us. Hats off to the FCC," Holland says. "In the next day or two, we will start our high-power DTV transmission using a Divicom encoder for the SDTV stream and a Larcen Landmark-series transmitter."

KOMO-TV faces an "unusual situation" in the form of a formidable mix of terrain, water, proximity to market and airport approaches, according to Holland. He describes their tower, which lies just north of the Space Needle, as in "excellent shape."

Dielectric provided the antenna. Larcen was selected because of "remarkably clean design," according to Donald Wilkinson, vice president and director of engineering for Fisher Broadcasting, which also owns KATU-TV Portland, Ore. Divicom's encoder is undergoing evaluation.

Holland says up-conversion is not an issue at KOMO-TV, not yet anyway. "It's a



Donald Wilkinson, director of engineering for Fisher Broadcasting, which owns KOMO-TV, and Patrick Holland, director of engineering for KOMO-TV, congratulated each other in January 1997 when the station began experimental DTV.

learning process. Not all

encoders appear to be created equal, although Divicom is clearly one of the leaders. This is a journey, not a destination.... We're in a progressive neighborhood."

Otherwise, Holland has settled on 720 P as the most suitable format for KOMO-TV, at this time. Holland believes that KOMO-TV's commitment to 720 P parallels the emphasis and developmental activity at the network level. (ABC last week announced its commitment to 720 P.)

"All of these HDTV and DTV technologies demand intense dialogue between the affiliates and the networks," Holland says. "We'll have to bond a little closer over the next few years."

As for transcoding, Hol-

land believes there are fewer artifact problems when one moves from progressive to interlace, as opposed to jumping from interlace to progressive: "Progressive gives us a foot up. It's a little easier to work with. Most broadcasters would like to avail themselves of 1080 P, but we have to deal with what technology currently provides."

720 P or not, Holland has many concerns about how the industry is addressing vital issues. The fact that Fisher Broadcasting is rebuilding KOMO-TV "from the ground up over the next two years" only adds to Holland's sense of urgency.

Although he anticipates major announcements at NAB from several large hardware providers that may elect to abandon proprietary solutions in favor of a more

flexible and user-friendly emphasis on interoperability and interface standards, Holland wants to see more progress in this area.

"We are looking for systems that are migratable and interoperable. With mandates out there for the top markets, standards need to move quicker. We're living in a complex world that will be easier to implement if there are interface standards," Holland says. "I hope to see strong statements coming from vendors involving a shift from proprietary systems to those that are interoperable. One of these companies—Tektronix—is in our backyard."

"Still, we cannot afford to proceed over the next two years at the pace we have been running over the past five years," Holland adds.

KOMO-TV is evaluating DVCPRO, and is using Grass Valley 300 switchers, along with Tektronix RF test and monitoring equipment.

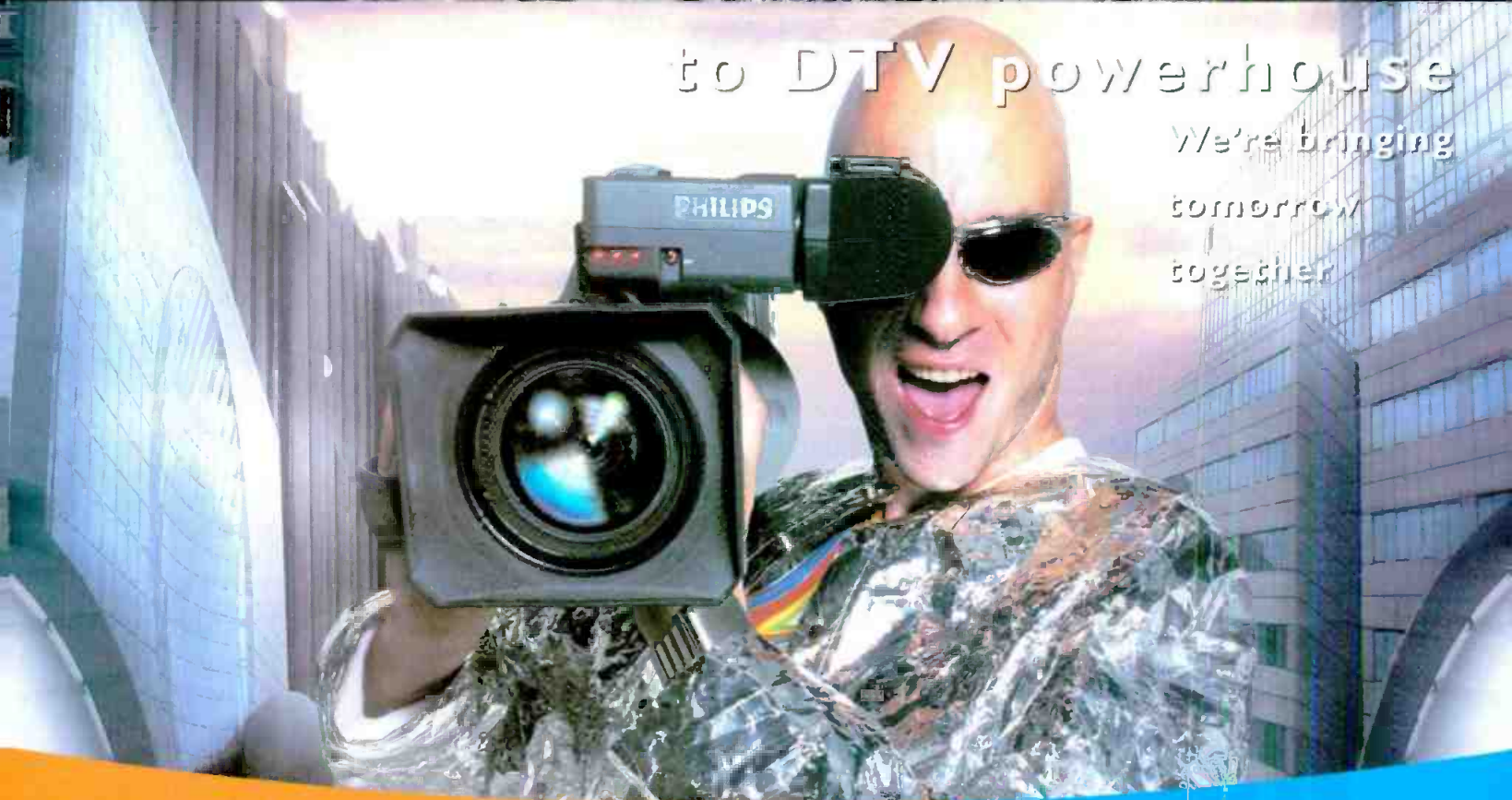
For a central routing infrastructure, Holland believes that a 1.5 ghz full-bandwidth system is less than practical, and that ultimately, what makes the most sense is a mezzanine compression standard.

Holland says: "The answer is pretty apparent if you look at it from the standpoint of affordability and workability. You have to look at how practical the system really is."

—Peter J. Brown,
B&C correspondent

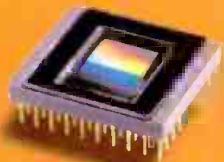


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KMOV(TV)**St. Louis**

Owner: A.H. Belo
Analog channel: 4
Digital channel: 56
Network affiliation: CBS
Expected DTV launch date: June 1999

While KMOV(TV)'s June 1999 deadline for digital transmission puts the station in the early-adopter category, chief engineer Walter Nichol counts himself among those who are glad they're not the very first—and faced with going on the air with whatever equipment they can patch together.

As a CBS affiliate, KMOV expects to carry 1080 I for the network's high-definition programming, but beyond that, the format (or formats) is still up in the air.

"I am somewhat frustrated that the industry hasn't settled on a production standard," Nichol says. "It keeps everything floating. You're afraid to make any real commitments beyond what you absolutely have to [buy]. If you make the wrong decision, it can get really expensive."

Nichol expects that Congress will stay out of the format debate, leaving the industry players to settle it among themselves. "It looked like it was pretty strongly migrating to 1080 I for a while," he says. "I get some whiffs that that may be turning a little bit. And I just don't know where it's going to end."

In the short haul, KMOV will merely convert NTSC signals to digital, creating a simulcast of the station's regular offerings. Nichol thinks multichannel won't provide enough income to justify the cost. He already has consigned multichannel to the dustbin of bad ideas, predict-

ing that true high-definition will be the catalyst that drives set sales and the DTV industry in general.

"There may be some spaces where multichannel makes some sense, but from an economic point of view, you are fractionalizing your own audience," he says. "I doubt seriously that most any programming we could afford to put on the air would draw measurable audience away from cable or satellite."

KMOV's existing tower can be reused for digital with a little structural strengthening and with no increase in height. An existing five-bay NTSC antenna will be replaced by a smaller three-bay antenna, allowing room for a new three-bay combined NTSC/high-definition antenna from Dielectric. Transmission lines will be replaced, and power will be increased on the smaller NTSC antenna so 100 kw ERP can be maintained.

The digital TV construction permit, along with an application for a minor modification to the station's NTSC license, have been filed. The NTSC application modification was necessary because the combined antenna raises the center of radiation by about 15 feet. "Because we are staying in our assigned site and at our assigned antenna height at full power, from what the commission says, the DTV license application is pretty much going to be handled pro forma," says Nichol.

Pending corporate approval from A.H. Belo, a Harris IOT transmitter will be purchased and installed in the existing physical plant. It won't be the only recent purchase from Harris; the station replaced a pair of RCA G Line NTSC transmitters with a Harris Platinum. Harris's



Chief engineer Walter Nichol thinks HDTV will drive set sales and the DTV industry.

transmitter manufacturing facility, in Quincy, Ill., is located about two hours away from KMOV, which receives a discount on Harris equipment through a corporate discount arrangement.

Besides transmitter and antenna, the only other DTV equipment in place is Microwave Radio Corp. digital-ready STL and TSL microwave equipment, recently purchased to replace some old Farinon equipment. The rest of the station's DTV purchase decisions will be made based on information culled from this year's NAB meeting. High on the shopping list are converters, downconverters and a 1.5 gigabyte master control. "I think we'll find most everything we'll need at the show," Nichol says.

That is, almost everything. "For a while, there was really a question as to who would make the ATV encoder," he adds. "We were hearing it was [only one] Japanese manufacturer, but it appears now that at least two or three other manufacturers are climbing on the bandwagon, so it looks like we will have some choice."



Three new Sony HDC 750 cameras are already in place. Installed on Vinten robotic pedestals, the high-definition cameras will capture images that will be broadcast (and also downconverted for the standard-definition broadcast). A Sony high-definition monitor has been purchased, so production people can start working on the logistical problems that emerge when the same programming must fit big- and small-screen ratios simultaneously.

Widescreen promos will be produced fairly quickly after the station rolls out digital, but the station decision about eventually retrofitting the existing studio or building a full 16:9 plant won't be made until sometime later. "I expect the price for high-definition production equipment is going to drop rather rapidly," Nichol says. "Two to three years out, it may make sense to build a high-definition plant."

—Andrew Bowser,
B&C correspondent

DIGITAL TELEVISION SYSTEMS



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WFAA-TV is off the ground in Dallas

WFAA-TV Dallas

Owner: A.H. Belo
Analog channel: 8
Digital channel: 9
Network affiliation: ABC
Expected DTV launch date: April 1998

Residents of Dallas and Fort Worth got their first taste of the digital future at the Texas State Fair Texas last fall, courtesy of WFAA-TV.

The ABC affiliate aired an eight-minute videotape. It was shown in a 16:9 high-definition theater as well as on a 32-inch monitor in a home living room setting.

An estimated 75,000-100,000 people got a glimpse of the off-air demo, which included talking heads, Dallas Cowboys Super Bowl action shot with a high-definition 16:9 camera, nature scenes, computer graphics and a music video, *Kiss the Frog*.

The promotion worked well, generating the longest lines at the fair. Local newspaper columnists wrote editorials praising the station and its technological leadership.

But the buzz was tempered when it was determined that WFAA-TV's initial digital forays were causing interference problems with heart monitors at local hospitals (B&C, March 9).

"We've been up and down a number of times," says engineering technical manager Wayne Kube. "It seems like every time we turn on, another hospital comes out with problems."

The station's digital signal is currently down. By FCC rules, it's up to hospi-



Engineering manager Wayne Kube says the station has broadcast digitally 'a number of times,' but has had interference problems with local hospitals.

tals to accept the interference or move to another frequency, and that's what WFAA-TV is waiting for, according to Kube.

When it is on the air, WFAA-TV's digital signal is broadcast from a tower in Cedar Hill, Tex., about 18 miles south of downtown Dallas. Owned jointly with Fox affiliate KDFW-TV, the tower has a three-point star mount, one arm of which is occupied by WFAA-TV's analog ch. 8. Another is occupied by Fox affiliate analog ch. 4.

The third arm, which will support both stations' DTV antennas, is still empty; WFAA-TV is utilizing a two-bay, bat-wing temporary antenna from Dielectric, side-mounted to the tower at 900 feet. A traveling-wave, horizontally polarized antenna unit manufactured by Dielectric is scheduled to be placed on the third arm of the star mount, stacked atop KDFW-TV's digital ch. 35 antenna.

The antennas are provided through a corporate agreement that WFAA-TV owner A. H. Belo has with Dielectric for antennas and

transmission lines. The same holds true for the station's Harris digital transmitter, which is housed with the analog transmitter in a facility at the base of the tower.

The station estimates that \$1 million has been spent on transmitter, antenna, line and tower modifications. "We have an advantage being VHF," Kube explains. "It's a relatively low-power transmitter compared with UHF, so it's less expensive." (Licensed for 18.5 kw, digital ch. 9's current broadcast power is 7 kw.)

Despite the activity, WFAA-TV's construction permit is still pending, since the center of radiation of the station's digital antenna is 17 meters higher than the station's table of allocation allows. The station was expecting the FCC to rule on the permit by early this month.

When the transmitter is not off the air because of hospital interference problems, WFAA-TV digital ch. 9 broadcasts an hour-long loop of HDTV programming produced by HD Vision, a high-definition

production house in Irving, Tex. The loop includes a short intro from A.H. Belo Chairman Robert Decherd; a 20-minute simulated newscast featuring station personnel from news, sports and weather; upconverted standard-definition news footage shot on the scene with a 16:9 camera leased from Sony, and a half-hour of high-definition nature scenes shot in Texas.

On tap is upconverted standard-definition programming and, of course, network HDTV fare.

The station has a Snell & Wilcox upconverter on hand, which is capable of converting standard definition to 1080 I. Belo's official format choice for digital broadcasting. "We're seeking and gaining more high-definition content as we go along," Kube says.

He says the station is "very comfortable" pursuing 1080 I. "The equipment is out there right now for 1080 I," he says. "There's very little 720 P equipment. That certainly contributes to the decision."

Meanwhile, promotions continue. A scaled-down version of the state fair demo was presented at a large livestock show in Fort Worth, and two shopping mall kiosks are making the rounds in the metro area.

WFAA-TV's promotion department is talking with local retailers to arrange promotions.

"I'm sure there will be some sets there, and we'll have an over-the-air picture on them," Kube predicts.

—Andrew Bowser,
B&C correspondent



A SALUTE TO
JOE FLAHERTY

1998 Digital Television Pioneer Award Recipient

JOE FLAHERTY: Putting the Vision in Television

On the eve of a new era in television, BROADCASTING & CABLE and *Digital Television* magazine are paying tribute to the man largely responsible for getting it this far: CBS Senior Vice President of Technology Joseph A. Flaherty.

Ask his peers about him and they respond almost with one voice: Joe Flaherty's vision guided them through long years of work on high-definition television.

To honor that vision and the commitment to transform it into reality, Flaherty is being given the 1998 Digital Television Pioneer Award.

"He really has a long-term, broad vision for broadcasting, as you can tell by the fact that he got under this [HDTV] issue so early," says



Joe Flaherty puts forward his vision of TV's future. It is a future he has been instrumental in shaping

Jonathan Blake. Blake is a partner in the Washington law firm of Covington and Burling, which represents the Association for Maximum Service

A SALUTE TO
JOE FLAHERTY

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HIGH DEFINITION TELEVISION AND HIS
PIONEERING WORK TO DEVELOP STANDARDS
FOR DIGITAL TELEVISION



A SALUTE TO

JOE FLAHERTY

1998 Digital Television Pioneer Award Recipient



"The rate at which technology is advancing will totally change the face of television by the turn of the century," said then-CBS/Broadcast Group VP of Engineering Development Joe Flaherty in accepting the NAB's Engineering Achievement Award in 1983.

"To me, he is a real American hero in this process. I don't know of anybody who had a greater practical grasp of the subject technically and of its overall impact on the industry. When the history of this is written someday, Joe Flaherty's contributions cannot be overstated."—**Richard Wiley**

already had pioneered electronic newsgathering (ENG) and other technologies—in themselves crowning achievements for any career.

Flaherty's interest in broadcasting and engineering ran in the family.

Joe Flaherty senior was the chief engineer for radio and TV stations in

Kansas City (a check of the BROADCASTING & CABLE Yearbook for 1939 shows J.A. Flaherty as head of engineering for WDAF[AM] Kansas City). Father and son also shared an interest in ham radio—Flaherty senior took up the hobby in 1922; Flaherty junior followed in 1948 after the World War II freeze on amateur use of the airwaves had been lifted.

Flaherty attended Rockhurst College in Kansas City, where he studied physics. After graduating in 1952, he went to the Army Signal Corps of Engineers, where he made training films during the Korean War using early television production techniques. The studio was at the old Paramount Studios in New York. That operation made films "more quickly than could be made in the normal film way," he says. Finding newer and better ways to do things would become the hallmark of Joe Flaherty's professional career.

Once in New York, he never wanted to return to the Midwest. "When you are a kid in New York City, you never want to go anywhere else," Flaherty says. He never has.

In 1955, Flaherty left the Army and began his commercial broadcasting career. After a short stint at NBC, he moved to CBS and began the work that would define his career and help to define a growing industry.

Panasonic salutes Joe Flaherty for his leadership and commitment to HDTV

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vide that," says Kelly.

The 720 P format, while providing "virtually the

...should be bought? Where do you place it, what exactly does it do and how do you control it?

level of power and flexibility."

—Andrew Bowser,
B&C correspondent

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KCTS-TV Seattle

Licensee: KCTS Television

Analog channel: 9

Digital channel: 41

Network affiliation: PBS

Launch date: After NAB

KCTS-TV Director of Engineering Clifford Anderson says viewers who have seen HDTV want to know when they can buy it.

Shooting HDTV in Seattle

KCTS-TV Seattle is one of six PBS stations that make up the Digital Broadcast Alliance (DBA).

The station also joined last year in a strategic alliance with Seattle-based American Production Service to develop HDTV programming. KCTS-TV has 14 hours of HDTV content, primarily aerial footage of Washington, Ireland and British Columbia shot from helicopters equipped with Tyler mounts.

"Wherever we have shown analog 1035 HDTV on 32-inch consumer sets, the reaction has always been very positive. 'My goodness,' viewers exclaim, 'it's like looking through a window.' They all ask when they can buy it," says Clifford Anderson, director of engineering at KCTS-TV.

Experimental digital transmissions for the DBA have been under way since early last year at KCTS-TV, noncommercial KOPB-TV Portland, Ore., and noncommercial WETA-TV Washington, which has conducted the only high-power testing for the DBA.

"We're low power, and yet it holds up better than you might expect. We're transmitting random bits and checking the signal with our spectrum analyzer," Anderson says. "For the tests, we have been using a two-panel antenna loaned by Dielec-

tric, and a transmitter loaned by Harris Corp."

According to Anderson, KCTS-TV could begin transmitting test program material on its low-power experimental transmitter as soon as PBS puts up its test signal and makes the switch to the new EF Data SDM-2020 satellite modem. PBS currently uses the older EF Data 9000 series. KCTS-TV has recently installed its 2020 satellite demodulator.

KCTS-TV could begin transmitting with high power on its assigned DTV channel as early as January 1999.

"There are so many ways to go right now," he adds. "As a public broadcaster, the multichannel capability is well suited for us. We will grow with the ability to program to our various constituencies, both in prime time and non-prime time."

Testing is a necessity, and Anderson is not happy about the lack of test equipment on the market. For example, he is still awaiting delivery of a demodulator for 8-VSB transmissions that KCTS-TV ordered through PBS. The demodulator was shown at last year's NAB convention. It is manufactured at the University of Wuppertal in Germany.

"We want to test various formats, as well as get a good look at what receiver manufacturers are up to.

How much money will manufacturers be willing to put into these boxes, and will the quality of these units hold up? Those are big questions. Among other things, we want to minimize the time that any receiver goes dark," Anderson says. "Limiting transmissions to 480 I, 480 P and 720 P modes may minimize problems with reception between those using conventional ATSC digital televisions and those using PC-TVs. We hope that 720 P/60 will become available soon."

With the exception of the exclusion of side-mounted antennas, Anderson indicates that KCTS-TV has no pending tower issues, other than FAA approval for a small increase in height. While no contracts have been signed, KCTS-TV has been working with Dielectric on stacked NTSC/DTV antennas, and with Harris on the transmitter. A new 6 1/8-inch transmission line also is being installed.

While Anderson appears to be leaning toward a Harris/Lucent Technologies' Flexicoder, he also is studying the new Tiernan "THE-1." The ability to use dual-purpose encoders (SDTV and HDTV) using multislot architecture may be one way to keep costs down while maintaining versatility,

according to Anderson.

He will purchase downconverters at the NAB. He has been using a Snell & Wilcox downconverter on loan from PBS.

Anderson is working with a budget of roughly \$2 million for antennas, transmission lines, transmitter, encoders and STLs.

"Within PBS, all the stations are independent, although we are working on some group purchases. The early adopters in this case are probably going on too early to benefit from any collective purchasing," Anderson says.

Four years ago, KCTS-TV purchased its first Sony HDC-500 camera. KCTS-TV now uses a Panasonic D-5 HD recorder for most of its aerial HD acquisition. At last year's NAB, the station bought an HDC-750 and an HDW-700 camcorder, the latter which just arrived at the station. It has full-bandwidth output capability when tied to an external recorder, or it can be used as a camcorder for EFP, according to Anderson.

The alliance with APS is a big step forward for KCTS-TV. APS will take delivery of a full Sony HD editing suite including Sony's 3ME HDTV production switcher following NAB.—Peter J. Brown, B&C correspondent



Thomas Fabian
Director of Global Broadcast Marketing
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Teleglobe International Corporation

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DTV in Cincinnati: Big plans for small signal

WLWT(TV)'s digital signal went live on ch. 35 earlier this year, timed to coincide with the station's 50th anniversary on Feb. 9. A small on-air promotional campaign trumpeted the fact that WLWT was the first in Cincinnati to go digital, playing off the station's news slogan, "First, Fast, Accurate."

Today, WLWT is only simulcasting its NTSC programming at a portion (65 kw) of its full legal power for digital (1 megawatt), splitting the signal off the NTSC studio transmitter link before it goes to the analog transmitter and transferring it to the station's new solid-state, liquid-cooled, digital-ready UHF transmitter, manufactured by Iteco.

A 35-foot-long, six-bay panel antenna from Andrew Corp. (ALP series) broadcasts the signal from the station's existing tower—from underneath its analog ch. 5 panel antenna. "It's the biggest antenna I can put on my tower," says Cindy Hutter, station manager and director of engineering. "If I want to go full power and

put up a great big antenna, I'm going to have to move, because the tower won't support it."

About \$2 million is being spent on the transmission portion of the DTV operation.

Now that the transmitter is in place, WLWT is set to upgrade its physical plant to digital. The entire television station will be moved from a 1922 building originally used as an Elks Lodge. "It's kind of falling down around our ears," Hutter says. "It would be very difficult to do digital television in this building."

A new building has been purchased, and an architect has been contracted to fashion an add-on that will house WLWT's digital operations. It is expected that the new digital TV station itself will be ready to go next spring at a projected cost of \$5 million.

Even so, Hutter says, it's not likely that local news will be produced in

high-definition "anytime soon."

One of the biggest impediments is the cost of high-definition cameras—in the \$250,000 range for a single unit, by Hutter's estimate. Another problem is the complexity of production in the 16x9 aspect, which may carry a steep learning curve.

And don't even mention format. "These engineering breakfasts at NAB are going



Station manager-engineering director Cindy Hutter says the station is moving to a new building, and the digital operation will be ready next spring.

WLWT(TV) Cincinnati

Owner: Hearst-Argyle Television

Analog channel: 5

Digital channel: 35

Network affiliation: NBC

DTV launched: Limited launch Feb. 1998

to be bonkers," Hutter says. "Everybody's a little nutty, because if you make a mistake at this point or in the next few years, it's going to be a very expensive mistake."

It is assumed that NBC, which has not stated for the record what it is going to transmit or what format it will use, will provide some prime time HDTV programming that WLWT will pass on to viewers.

As one of 16 Hearst-Argyle Television stations, WLWT's official position on format is that its DTV push centers on taking advantage of the high-definition signal and passing that along to viewers. "It's not politically correct to say you're going to do multicasting," Hutter says.

Even so, WLWT has technology in place to support multicasting, should the tide turn again. No gear has been purchased, but the transmitter is wired to support the format.

It's that kind of planning that might be a prerequisite for the wild ride ahead.

"Everyone can compare this all they like to the change from black and white to color, but there's nothing like this," she added. "When we went to color in the early '60s, the standard was carved in stone. This time, everything's carved in Jell-O."

—Andrew Bowser,
B&C correspondent

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Michael Andres, Managing Director, Broadcasting, at (770) 673-2662 (Atlanta) or (212) 605-1632 (New York)*

Towering task in Los Angeles

KNBC(TV) Los Angeles

Owner: NBC-TV
Analog channel: 4
Digital channel: 36
Expected DTV launch date: Nov. 1, 1998

KNBC(TV) Los Angeles is going through a DTV overlay in preparation for a Nov. 1 launch, according to Charles Jablonski, NBC vice president of broadcast and network engineering. NBC intends to have four O&O's of its 13-station group into digital by Nov. 1.

As indicated in **BROADCASTING & CABLE** (Feb. 23), KNBC will use a Dielectric antenna, although an order for the KNBC unit had not been placed as of late March, according to Jablonski, due to the fact that the final design of the antenna has not been determined. Comark will supply transmitters.

"We are stressing uniformity on a groupwide basis, or at least as much as there can be to maximize our buying leverage," Jablonski says.

Major structural work has to be done to the tower atop 5,400-foot-high Mount Wilson before a new stack can be installed. It is 12 miles from KNBC studios in Burbank. Numerous rivets must be replaced with stainless steel bolts.

KNBC may purchase digital STLs or it may use fiber; no deal has been made, Jablonski says. The same is true with the bulk of pass-through equipment. "We have the block diagram all

set. We just have not filled in all of the boxes. Transmitters and the antennas are the hardest part. I see no reason to adopt first-strike capability. We have to get the big plumbing out of the way first," Jablonski says. "I don't want to trivialize the process, but it's not like there are going to be two or three more antenna manufacturers springing up like sunflowers."

"Let's face it. There are some neat solutions out there. We don't want to lock in early," Jablonski says.

KNBC is not about to throw out and replace its five-year-old NTSC analog broadcast plant, unlike another NBC station, WRC-TV Washington.

"We want to do what needs to be done at minimal cost. We want to pass through the network signal, do the bug and the voiceover and simply turn it around and get it up to the transmitter," Jablonski says. "We want to be as cheap and frugal as possible. And I want to emphasize that despite the enormous challenge posed by this undertaking, not a single person has been added for this process."

"Five years from now, we're all going to look back and wonder what the heck we were so worried about."

—Charles Jablonski, NBC vice president of broadcast and network engineering

"A year ago at NAB, encoders sported price tags of up to \$600,000.

Now, everywhere you look, you see single-purpose encoders for \$40,000-\$50,000," Jablonski says. "At the same time, as they begin to open their checkbooks to write those \$2 million or \$3 million checks, we see a lot of general managers suddenly struck by severe cases of writer's cramp."

KNBC's new studio has been converted to Grass Valley 4000 switchers. The video portion of the control room is digital, while BTS analog routers remain in the loop. Any updating of the routing infrastructure at KNBC will not include a 1.5 Gb/s solution.

"Of course, we intend to replace our 10-year-old video Wurlitzers, but we don't want to do it simply because DTV is here. We are not looking at 1.5 Gb/s infrastructure. We've found that it is not a cost-effective or sane way to get into this war. It just does not solve a problem," Jablonski says.

The groupwide adoption of DVCPRO took place last year, and it was described

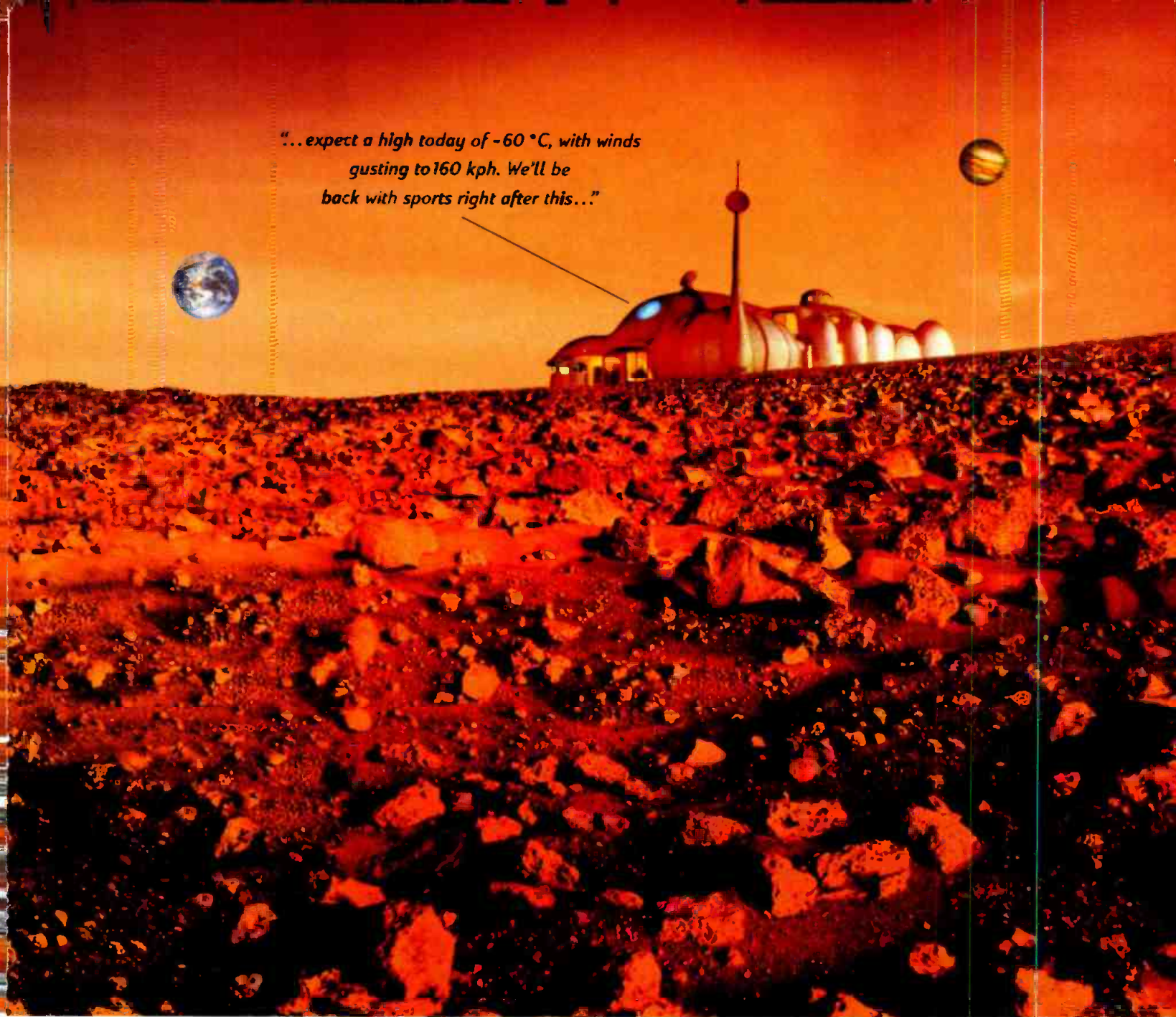


by Jablonski as a smooth transition. KNBC devoted much of its budget last year to newsgathering hardware including three new ENG vans from Concord, Calif.-based ENG Corp.

One of the more upbeat results of the "aggressive rollout schedule," Jablonski says, has been the sudden shift in the role of station engineers. "Engineers have risen to the challenge. They are answering critical questions, and now they are the first guys to be called on. It is something that this industry has not experienced since the conversion to ENG 25 years ago," Jablonski says. "The vendors, manufacturers and equipment suppliers also are doing a superb job of rising to the challenge."

"Five years from now, we're all going to look back and wonder what the heck we were so worried about," Jablonski says. "You want to know how we are pitching it to our guys? We are telling them to do what makes sense."

***—Peter J. Brown,
B&C correspondent***



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Getting a jump on digital in New Hampshire

The upcoming New Hampshire primary adds extra significance to WMUR-TV's November 1998 deadline for digital deployment. The ABC affiliate, licensed to Manchester, N.H., but serving the Boston market, intends to fill the

year's primary, that more than tripled available space to 75,000 square feet.

Knowing the digital revolution was nigh, WMUR-TV spent approximately \$8 million to \$9



WMUR-TV got a jump start on digital when it moved in 1995 into a renovated facility with a digital platform. The station spent \$8 million-\$9 million.

WMUR-TV

Manchester, N.H.

Owner: Imes Communications

Analog channel: 9

Digital channel: 59

Network affiliation: ABC

Expected DTV Launch

date: November 1998

digital airwaves with programming that complements the typical program stream during this political event.

No one at WMUR-TV is sure what form that additional programming will take. Multicasting would be nothing new to the station, which operates a cable-access channel and a Fox program stream broadcast to northern New Hampshire. (One-half of the station's master control room runs an ABC program stream, while the other half runs Fox.)

"We should be established by then, if all goes well," says director of engineering Joe Paciorkowski. "I don't want to call it 'value added,' but there will be compelling information out there that will drive the market to want to either buy set-top converter boxes or new sets, if they're affordable."

WMUR-TV got a jump start on digital deployment, beginning with a move to a renovated facility on Dec. 18, 1995, eight weeks before that



million on the facility and equipment to build up a digital platform.

The DI format is used for all of the plant's routing switchers, production switchers and edit rooms. The acquisition format presently used is DVC Pro. "A couple more million dollars is going to put us on the air with a decent signal, no doubt about that," Paciorkowski says.

A new tower is in the works, since the station's rather short tower—a reincarnated FM radio tower 149 feet tall that climbs to 227 feet with its 12-bay bat-wing antenna—has already reached the height limit specified by the FCC. "If we did a side mount [UHF antenna], the ANSI non-ionizing radiation would be too high there, and the cross section [of the tower] is so big that we would

end up with a tremendous amount of pattern distortion," Paciorkowski says.

Both the existing tower and the prospective tower site are located on land already owned by the broadcasting company, on top of Mount Uncanoonic. The site serves as the antenna farm for the southern part of New Hampshire, and provides a clear line of sight to Boston to the south.

The digital transmitter will be located there as well, although it is expected that WMUR-TV won't decide which transmitter to purchase until NAB.

The station has not applied for its construction permit because zoning proceedings for the new tower are pending, but should clear in April. A certification checklist application will be filed up front, while directional antenna issues will be dealt with in a later re-filing, he adds.

"Things are starting to fall into place pretty well," Paciorkowski says. "It's certainly do-able to make the timeline, but there's going to be quite a bit of work involved."

No word yet on what manufacturer will supply WMUR-TV's antenna, but

Paciorkowski indicates it will definitely be a center-fed, slot-type antenna. "I'm convinced that the antenna, filter and transmission line components are just as important as the transmitter and the multiplexer," he says.

Paciorkowski acknowledges the presence of Comark as a transmitter provider, but cites Lucent and Harris as other providers with attractive solutions. "I'm looking at Harris, and I'm looking at them strongly," he says.

The studio-to-transmitter delivery mechanism is yet to be determined. Coincidentally, several fiberoptic cables from an old telephone tower lay only about 100 feet away from the new digital tower site, but using those is just a possibility at this point.

Another possibility is 18-ghz common-carrier microwave spectrum. ATI is being considered as a microwave vendor. "Obviously, Microwave Radio [Communications] is not out of the loop, but the Part 74 frequencies are either congested or not policed very well," Paciorkowski says. "And with an STL, I think it's very important to be secure, because you don't want any interference."

—Andrew Bowser,
B&C correspondent

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WCBS-TV New York

Owner: CBS Corp.
Analog channel: 2
Digital channel: 56
Expected DTV launch date: Nov. 1, 1998

Robert J. Ross, vice president of engineering and operations at CBS, can identify with the recent talk about the possibility that rivets may be responsible for the sinking of the Titanic.

He has encountered his own rivet problem atop the Empire State Building, where WCBS-TV's antennas are located. Workers are replacing rivets on the mast with steel bolts.

Otherwise, the station's digital objective is firmly in place.

Work began six months ago, and hundreds of rivets have been replaced. Ross estimates that the work will be completed in mid-May.

"It's been a time-consuming process. After the first week, it was obvious that these rivets were not going to come out easily. Tower work in the winter is slow anyway. I estimate that we have about 40 more days of work left," Ross says. "I would describe the problem here in New York as a very unusual installation."

The original plan was to remove the backup NTSC ch. 2 antenna and replace it with a Harris two-bay bat wing-style antenna, for NTSC backup, and a Harris eight-bay broadband panel antenna, for digital transmissions.

WCBS-TV hoped to begin full-power digital TV transmission last fall. In addition, the station is adding two transmission lines from the

Riveting new television comes to New York



CBS Engineering and Operations Vice President Robert Ross says CBS will demonstrate HDTV at NAB.

transmitter space on the 83rd floor of the Empire State Building to the tower array on the mast. This involves the installation of 468 feet of Dielectric 6-1/8-inch Digitline transmission lines. It also has become "a complex job with 26 tuneable elbows in each line," according to Ross.

WCBS-TV has been operating a 2 kw transmitter and DTV antenna on the 81st floor since last April. Beaming to the Northwest, the signal is little more than a bitstream interspersed occasionally with an upconverted ch. 2 signal or HDTV demo material.

Ross indicates that the modulator is running primarily to provide the receiver manufacturers with something to run through their bit-error rate counters. Sharp and Sony, among others, have reported receiving this signal "quite a few miles out," according to Ross.

"We had hoped to complete the testing of the transmission characteristics in a

canyon [skyscraper] city by now. There is really very little actual data—and almost none on the issue of indoor reception," Ross says. "We have built our own test truck to take field measurements."

The new Harris 2-tube Sigma Plus transmitter, operating at full power, is running into the dummy load. "We just can't get into the antenna yet," Ross says. Three new 7 ghz digital microwave systems capable of combining the ATSC and digital NTSC signals are being tested, including Nucomm and Microwave Radio units. These will beam the WCBS-TV signal from the broadcast center on 57th Street in midtown Manhattan to the Empire State Building on 34th Street.

"Over the past year, we have built an appropriate amount of hardware to begin testing," Ross says. "We own two Mitsubishi encoders, and we have upgraded the software in each several times. We are focused on a flexible-output data-rate box. We also have a couple of switchers from Sony and Panasonic. We're running the Panasonic D-5s with their HD converter at 4:1 compression right now. We have built a small HD edit room and master control area."

All systems are go for a full end-to-end HDTV demonstration at NAB. CBS will generate a 1.5 Gb/s HDTV feed from its new temporary master-control facility and send it via fiber-optic cable to the Group W Network Services

center in Stamford, Conn. The digital TV signal then will be uplinked using a 45 Mb/s digital data rate (DS-3). The satellite downlink will be located at KLAS-DT Las Vegas, where the signal will be decoded to baseband video and audio with a data rate of 1.5 Gb/s per second.

This network signal then will be integrated with local programming, promotional announcements and commercials in the KLAS-DT master control.

The output of the KLAS-DT master control will be compressed to ATSC 19.3 Mb/s and broadcast on ch. 52 to the Las Vegas area.

CBS has been granted special transmission authorization by the FCC. The 1080 I signal will be demonstrated on HDTV receivers at the NAB convention. The broadcast will feature highlights from the Olympics in Nagano, along with promotional excerpts from CBS prime time programs.

"This will be the first end-to-end demonstration that will use the systems we will need in the fall for our affiliates," Ross says.

The CBS executive is perplexed about the indoor antenna reception equation—in canyon cities as well as in suburban areas—given the fact that despite cable's high penetration, well under half of the total subscribing population has a second set hooked up to cable. The lack of reliable data taken in multiple settings and seasons to date does not sit well with Ross.

—Peter J. Brown,
B&C correspondent

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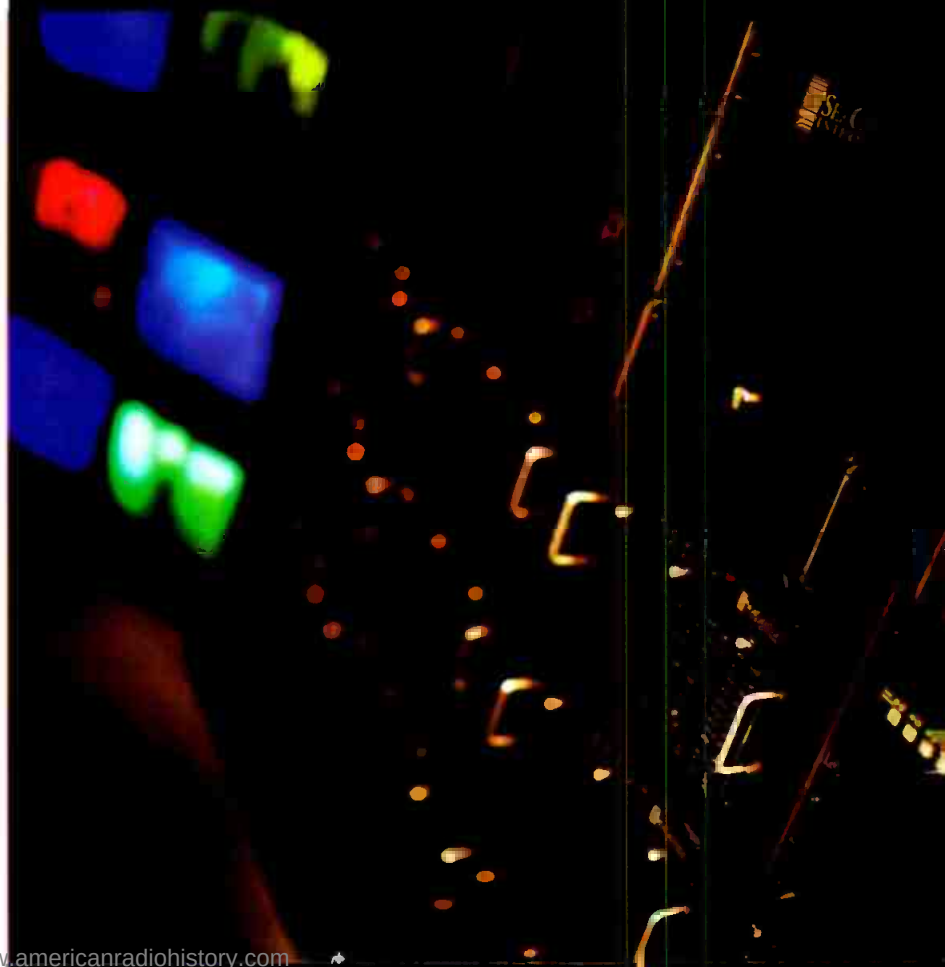
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KBME(TV)**Bismarck, N.D.****Owner:** Prairie Public Television**Analog channel:** 3**Digital channel:** 22**Network affiliation:** PBS**Expected DTV launch****date:** Fall 1999

The wide-open plains of North Dakota provide enviable geography for Prairie Public Television. With no mountains to get in the way, this state network has had no problem serving the entire state with NTSC by using just six VHF transmitters—four of them low-band VHF—and one small UHF transmitter.

Yet from the beginning of digital television, the prospect of replicating that coverage with a digital signal was somewhat daunting to Bruce Jacobs.

"Potentially needing to build UHF facilities was frightening, just from an operating-cost standpoint, much less a capital-cost standpoint," says Jacobs, director of planning and technology for KBME(TV) Bismarck, which is owned by Prairie Public Television.

Jacobs and his colleagues can breathe easier now that the FCC has allowed some leeway. Today, KBME's plan is to seek local and state funding to match federal funding. Executives hope that the federal funding will materialize soon to pay for a changeover to transitional facilities that will operate in UHF at a moderate power level. At the end of the transition period, KBME might revert back to its original ch. 3.

The solution is not simple, but it's better than the alternative, especially in this smaller market: PPTV's transmitter in Dickinson,

Looking forward to multicasting in Bismarck

N.D., for instance, serves only about 40,000 individuals but would have operating costs of more than \$100,000 if it were to go UHF. By comparison, the transitional plan is expected to keep KBME's operating costs under control and allow for a better final coverage area.

"Here's the plan," when we don't know for sure what it is," Jacobs says.

The FCC construction permit has been applied for, but money must materialize before significant investment can begin. An estimated \$18 million–\$20 million must be collected to pur-

himself among those who think that 1080 I is no better and in some ways worse. "Theoretically, 720 P should in most ways outperform 1080 I in actual resolution," he says. "I'm very eager [to see] some shift in the industry at NAB [toward] 720 P."

The 1080 I format is better for CRT displays. Yet 720 P avoids interlaced artifacts, allows for easier conversion to other formats for multicasting and works better than 1080 I for progressive plasma panel display, according to Jacobs.

Like executives at other PBS stations, KBME leaders are looking forward to multicasting capability. Public station program directors who fret over certain day-parts—wondering whether

they're best filled with programming for preschool kids, grade-school kids or adults—will be able to rest easier once they can run programs for all three demographics at the same time.

The problem may be solved at the cost of digital picture quality, but many PBS viewers will take their favorite content any way they can get it. And presumably the youngest ones couldn't care less. "We recognize that *Barney* does not need to be in high-definition," Jacobs says.

—Andrew Bowser, B&C correspondent



Technology director Bruce Jacobs says this public station will buy the bulk of its digital equipment this fall, if the funding comes through.

The biggest sacrifice would be subpar digital transmission during the transition period.

It sounds good on paper, but where does the transitional path lead? After moderate-power UHF, must KBME ramp up to full-power UHF? Can the station move back to channel 3—a move that could save \$100,000 a year—now that the FCC has included low-band channels 2 through 6 in the core spectrum? Or will severe interference problems on those lower frequencies prevent the move back to ch. 3?

The final direction will have big implications for the long-term cost of operating the digital facilities—and for now, a cloudy crystal ball is slowing KBME's digital strategy. "It's hard to go to the legislature and say

chase and install PPTV's network of transmitters. A grant application for federal matching funds has been filed with the Public Telecommunication Facilities Program of the Department of Commerce. Assuming that funds appear according to plan, the station will purchase the bulk of its digital equipment this fall, just one year before it's scheduled to launch digital programming.

Creative collaborations with other local stations are being sought, especially for the transition period. "[Commercial broadcasters] face similar challenges in serving areas of small population," Jacobs explains.

The 720 P format looks best to Jacobs, who counts



Powell: Digital should be boon to First Amendment

By Harry A. Jessell

The convergence of mass media due to digital technology should bring an end to "two First Amendments, one for broadcasting and one for every other communications medium," said FCC Commissioner Michael Powell.

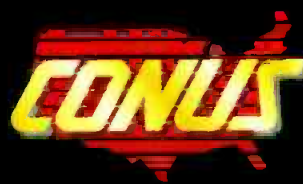
At the Association of Maximum Service Television meeting in Las Vegas Monday, Powell said the technology makes "it impossible to maintain that broadcasting is uniquely undeserving of full First Amendment protection. It is just fantastic to maintain that the First Amendment changes as you click through the channels on your television set."

Digital convergence also means more competition, Powell said. "Because of the infinite flexibility of digital, traditional market barriers will crumble." For broadcasting, "it opens up new programming options and offers new ways to compete with other media."

In the digital world, regulators must yield to market forces for allocating communications resources, adopt policies that promote innovation and not base rules solely on "how you send your message."

The commission must also pledge to work for regulatory efficiency. "We must make timely decisions, be sensitive to business realities and capital markets and shift our efforts away from prospective regulation toward enforcement."

A greater reliance on enforcement would "protect the public against certain harms without hindering companies from entering new markets that lie outside their traditional regulatory boundaries. If there are teeth in our enforcement efforts, companies will take heed or pay the price." ■



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Raycom adds stations from Malrite

Six TVs, one TBA, one LMA boost group to 8.9% U.S. coverage; price undisclosed

By Sara Brown

Raycom Media Inc. is buying six television stations plus one local marketing agreement and one time brokerage agreement from Malrite Communications Group. The stations will bring the group's total coverage to 8.9% of U.S. TV households.

The buy expands Raycom into two markets larger than any currently in its station group: Cleveland, Nielsen's 13th largest market, and Cincinnati, the nation's 30th market.

In Toledo, Ohio, another Malrite market, Raycom will have a duopoly problem and will to divest either the Malrite station, WNWO-TV, or Raycom's WUPW(TV).

Raycom has found creative ways to

get out of duopoly trouble in the past. Saving its WTOG-TV Savannah, Ga., Raycom swapped WSAV-TV Savannah to Media General for its Richmond station WTVR-TV. As part of the deal, Raycom added to the swap WJTV(TV) Jackson and WHLT(TV) Hattiesburg, both Mississippi, where it now owns WDAM-TV. The swap was valued at \$80 million.

The Malrite deal also marks Raycom's entry into the virtual-duopoly world of LMAs and similar agreements. Sale to an LMA partner may be the answer for Toledo.

Raycom and backer Retirement Systems of Alabama have been looking for a buy since last October when the group reportedly bid \$1.9 billion for LIN Television Corp. which was sold to Hicks-Muses. ■

The Malrite stations

Owned Stations

WOIO(TV) Cleveland
 WXIX-TV Cincinnati
 WFLX(TV) W. Palm Beach, Fla.
 WNWO-TV Toledo, Ohio
 WLII-TV San Juan, P.R.
 WSUR-TV Ponce, P.R.

Local Marketing and Time Brokerage Agreements

WUAB-TV Cleveland, Ohio
 WSTE-TV San Juan, P.R.

Intel gains decoder software rights from Hitachi

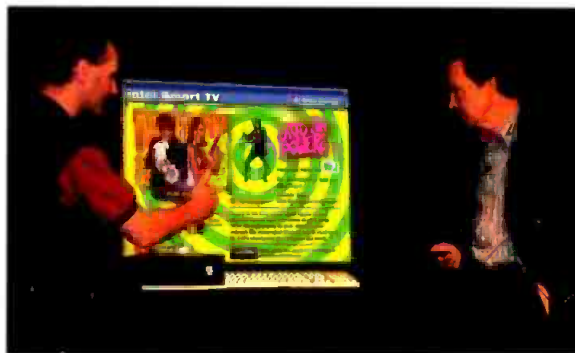
Whittier outlines digital TV horizon in multimedia keynote

By Richard Tedesco

Intel Corp. pushed its vision of the digital TV future into a new phase Monday in a deal giving Intel rights to All Format Decoder (AFD) technology from Hitachi America Ltd.

Under terms of the deal, Intel will work Hitachi's AFD technology into software to enable decoding of digital TV signals on PCs. Incorporation of the AFD technology in high-end broadcast-ready PCs means the machines will be able to decode any ATSC formats for high-definition or enhanced-definition formats.

All-format decoding translates to lower digital TV costs, according to Ron Whittier, senior vice president of Intel's content group, by enabling easy up- or down-converting of any digital signal, essentially solving the thorny problem of selecting from the myriad formats for all digital transmissions. "You can do the decoding of the signal in software," Whittier told his NAB audience at the Sands Expo Center.



Intel's Steve Young (l) demonstrates an Intel SmartTV during the keynote delivered by Ron Whittier, Intel senior VP (r).

He reported progress on development of receiver cards costing \$200-\$300 that Intel is planning to begin co-producing with Zenith Electronics by year's end. And he predicted a rapid evolution to digital broadcasts for carriage on a range of platforms. "The basic building blocks are available," Whittier said.

Low-cost PCTV systems are close to reaching the marketplace, according to Whittier, who says Philips and Gateway are producing high-end PCTV units in significant numbers.

On another digital front, Whittier demonstrated a prototype of the content

to be developed for a digital broadcasting service Intel begins testing with PBS later this year (B&C, April 6). Five PBS stations, including WETA-TV Washington, are committed to starting digital transmissions by year's end, according to John Hollar, PBS executive vice president.

Using Intel's Interact Tools 2.0, the companies will co-develop content to be integrated in enhanced digitized broadcasts of PBS history documentaries and children's programming. Hollar joined Whittier to show an interactive version of Ken Burns' "Lewis and Clark" documentary, with a rustic 19th century map of the U.S. framing video of the documentary in a window on screen. Supplementary data selected by the PC user with icons brings text and other material up in the window.

"People who watch PBS inherently want to know more," says Hollar, who sees PBS viewers as likely early adopters of the Pentium-driven technology for the digital Interact. PBS digital transmission formats remain undecided, according to Hollar, who says Intel's AFD software render moot the points of contention between proponents of interlace and progressive scan. ■

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Managing Agent



The E.W. Scripps Company

\$200MM Lead Managed
Notes Offering
\$65MM Sale of
The Pittsburgh Press
\$800MM Managing Agent
Bank Financing



\$75MM Lead Managed
Notes Offering



Evergreen Media Corporation

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Preferred Offering
\$1.75BN Agent Bank Financing



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Chyron talks DTV

Introduces HD router, effects systems

By Glen Dickson

Chyron Corp. unveiled its digital television product strategy last Sunday in Las Vegas, introducing HDTV-capable effects systems and a full-bandwidth 1.5-gigabit router from routing and automation subsidiary Pro-Bel.

Ed Grebow, Chyron president, spoke about how Chyron has evolved from a manufacturer of proprietary boxes to a leading supplier of open architecture Windows NT solutions. Grebow said that Chyron will focus on making DTV products that are "flexible and resolution-independent" and can handle all 18 ATSC formats.

One such product is Duet, Chyron's new real-time video processing platform. Duet's architecture can support 40 simultaneous, full-bandwidth video streams along with an object-oriented 2D/3D graphics engine that is scalable to any

ATSC resolution and scan rate. The retail price starts at \$30,900 for a base platform, and \$59,000 for an HD version.

"Duet can go from SDTV to HDTV by changing one board," said Grebow. He added that while many broadcasters believe entry-level DTV equipment will be cost-prohibitive, a hi-def Duet will cost less than Chyron's industry-standard Infini character generator for the NTSC world. American Production Services in Seattle is the first customer for the Duet system.

Chyron also introduced its Liberty version 6.5 paint and animation system, which provides cross-platform support for both SGI workstations and Windows NT and can handle HDTV and film applications.

In other Chyron news, the company



Pro-Bel's high-def 16x16 router will sell for about \$30K

announced an exclusive relationship with SportVision Systems of New York, the sports production enhancement company that was formed in January by ex-News Corp. executives Bill Squadron, Stan Honey and Jerry Gepner. Chyron will market SportVision's AIRfx system, which allows broadcasters to precisely measure the vertical leap of basketball players. AIRfx calculates vertical leap data for replay in a graphic produced by Chyron's Infini character generator. The AIRfx system made its on-air debut last week in a Golden State Warriors-Milwaukee Bucks game shown by Fox Sports Bay Area.

UK-based Pro-Bel, which joined the Chyron fold two NABs ago, is starting to make a name for itself in the United States. The company just closed a \$1.8 million deal to supply Primestar with a complete routing and monitoring system. For NAB, Pro-Bel has launched a 16x16 high-definition (1.5 Gb/s) router, that will sell for around \$30,000. SMA Video of New York has already ordered the hi-def routing switcher, which will begin shipping immediately after NAB. Pro-Bel is also working with Snell & Wilcox to develop a 32x32 hi-def router.

In other Pro-Bel news, the company is demonstrating a new MPEG-2 logo insertion technology that will allow broadcasters to insert bugs into a DTV picture. Instead of full decoding an MPEG-2 picture to insert a logo and then re-encoding it, which is the conventional wisdom for dealing with the varying frame sizes of MPEG-2 pictures, Pro-Bel's solution only decodes the part of the picture where the logo is going. This provides logo insertion

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Uplink Site Manager: We are seeking a self motivated, broad based, engineer to oversee the installation and operation of our new North Los Angeles uplink facility.

Encoder Systems Specialist: NDTC operates VCI+, DCI, DCII, SA and other video compression, encoding, and encryption. If your interests lie in computer networks, video and compression systems, we are interested in talking to you.

Monitoring and Control Technician: We are adding a second full-time position to increase our commitment to computer control of the NDTC transmission system. Networking knowledge and familiarity with Uplink control systems desirable.

Broadcast Technician: Successful candidates will have two plus years experience in component level VTR repair (Beta, Digital Betacam, etc.) and video monitor repair. Tektronix Profile and Alamar automation experience highly desirable. A high level of digital and analog audio and video knowledge and computer skills is essential.

"without the quality hit or cost" of fully decoding and re-encoding MPEG-2, says Roger Henderson, Pro-Bel managing director. The insertion process incurs a 200 millisecond delay, which Henderson says is small compared to the .8-1 second delay of fully decoding and re-encoding the

picture.

The Pro-Bel logo insertion solution borrows MPEG-2 transport stream manipulation technology developed by IRT, the research and development body of the public broadcasting authorities of Germany, Austria and Switzerland. It runs on a single PC card and

can perform logo insertion on both 480 I and 480 P pictures (the card will be available in third or fourth quarter 1998). Pro-Bel plans to continue development of the technology to support logo insertion in HDTV pictures. "We're totally committed to HDTV in the States," says Henderson. ■

Pluto outlines DTV strategy

Announces DVCPRO-ready disk recorder

By Glen Dickson

Pluto Technologies of Boulder, Colo., has followed up on the development agreement it signed with Avid Technology at last year's NAB by introducing a new server, AirSPACE, that supports Panasonic's popular DVCPRO tape format.

AirSPACE is a multi-channel broadcast server that features DV compression at 25 Mb/s, making it compatible with both DVCPRO and Sony's DVCAM, as well as DVCPRO 50 at 50 Mb/s. The unit accommodates up to 10 simultaneous input/outputs and can store from four to 20 hours of DVCPRO material. It is designed to work with Avid's DV-native editing and playback solution (the result of a development agreement between Avid and Panasonic).

But Pluto is especially pleased with its support of DVCPRO 50, which

Panasonic is marketing as a practical DTV acquisition format. "We think DVCPRO 50 may become the standard for broadcasters' production," says Dan Cole, Pluto vice president of marketing and sales. "It's good enough to do that."

AirSPACE will be available in fall 1998.

Pluto was also touting its HyperSPACE high-definition video recorder as a "basic building block" that can support all of the ATSC formats, including 480 P, 720 P and 1080 I. The 360 Mb/s recorder, which can also operate at 270 Mb/s (serial component 601), works

with Panasonic's HDP-500 hi-def codec to record 4-to-1 compressed HDTV. HyperSPACE can record three hours of video at 360 Mb/s.

"DTV has to be looked at in terms of multiple formats," says Pluto chairman and CEO Mark Gray, who says he will push for "new levels of open standards and interoperability" in DTV products.

Pluto also announced sales of its original VideoSPACE disk recorder to HBO Studio Productions in New York; Tribune O&O and WB affiliate WPIX-TV, New York, and the Canadian Broadcasting Corp. ■

Chaseman honored by MSTV

The Association for Maximum Service Television, at its annual meeting in Las Vegas Monday, awarded its Jack Harris Founders Award to Joel Chaseman. Chaseman, of Chaseman Enterprises, is the former chairman of Post-Newsweek stations. "When faced with problems with multiple solutions, he will calmly say, 'This is the way,'" said Belo's Ward Huey, who presented the award along with Fred Paxton of Paxton Media Group. Chaseman, who has been in the broadcast industry for 55 years, recalls most fondly his early days in the business: "I've always had a self-image as a DJ and a play-by-play guy." —Edna Malave-Hill

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Sony snags digital sales

Will build hi-def studio for NBC

By Glen Dickson

Sony opened its 1998 NAB exhibition by announcing orders for over \$100 million in digital equipment in the last 60 days, including the creation of the high-definition broadcast facility for NBC's "The Tonight Show with Jay Leno" and a three-year, \$15 million agreement with CNN to provide MPEG-2 technology such as Sony's Betacam SX tape format.

Sony continued to sing the praises of the 1080i high-definition format, which is "the best solution now in cost and performance since the equipment is already available," said Nobuyuki Idei, president of Sony Corporation. NBC agrees, and has tapped 1080i as the production format for "The Tonight Show" facilities in Burbank, Calif., where Sony will build a hi-def studio, master control room and edit suite.



Sony Corporation President Nobuyuki Idei said that digital technology is creating a "whole new world for Sony" where broadcast and consumer products overlap.

CNN has committed \$15 million over three years to replace its analog field acquisition gear for over 150 news crews with Sony MPEG-2 equipment.

"The Tonight Show" will use Sony HDC-700 and HDC-750 studio cameras and the HDW-700 camcorder for shooting remote footage, which is a big part of Leno's show. The control room and edit suite will use Sony HDVS-7000 switchers, HDME-7000 multi effects systems, HDS-V3232 video routers, HDW-500 VTRs and HDM-series monitors.

"When we came out of the box on DTV, we wanted to be the highest

quality for the most number of viewers," said Charles Jablonski, NBC VP of broadcast and network engineering. "That's 1080i." NBC will also be using 1080i for its prime-time programming.

NBC wasn't talking about when the "Tonight Show" studio will be ready for hi-def broadcast. "We don't want to give our friends across the country a target to try to beat," said Jim Powell, NBC vice president of entertainment production operations.

Sony has also closed another big 1080i deal in the mobile production market: National Mobile Television (NMT) has contracted with Sony to build two 1080i outside broadcast production (OB) trucks. One truck will be stationed in Los Angeles to provide hi-def production to the entertainment industry, while the other vehicle will be located in New York to cover sporting events. Both trucks will begin operation Sept. 1, 1998.

While Sony is finding orders for its 1080i gear, its biggest new contract is with CNN, which first bought Sony's MPEG-2 Betacam SX gear back in September 1996. Since then, CNN and Sony have worked closely to develop the SX format, which resulted in the creation of Sony's new DNW-A225 portable field editor, which was built to CNN's specs and is now part of the SX line.

Now CNN has committed \$15 million over three years to replace its analog field acquisition gear for over 150 news crews with Sony MPEG-2 equipment, serving all of its six networks worldwide with Sony MPEG-2 acquisition and editing gear. CNN's first installment will include a large purchase of Betacam SX equipment. CNN has also agreed to become the first beta test site in the U.S. for the new digital asset management/archiving system that Sony has developed with EDS (Broadcasting & Cable, March 30, 1997). CNN will evaluate the Sony/EDS system, which uses Sony's PetaSite mass storage library with software from EDS and Avalon, as a possible solution for digitizing over 70,000 hours of archive material.

In other Sony news, the company announced Betacam SX sales to KSL-TV Salt Lake City, WHDH-TV Boston and KTVT-TV Fort Worth, and sales of 12-bit digital signal processing cameras to NEP/Mobile Production Services of Pittsburgh, Bexel Corporation of New York and Los Angeles and KRON(TV) San Francisco. ■

Crash Kills Four Dow, Lohnes lawyers

Four lawyers from one of the premier media law firms were among those killed when two planes collided over Rosewell, Ga., last weekend.

Four of the five victims were members of Dow, Lohnes & Albertson, an Atlanta firm with a major practice in media, telecommunications and intellectual property, particularly in Washington. Among the dead was the firm's chairman, Chip Allen, who counted broadcaster and cable operator Cox Enterprises as one of his major clients and served as personal attorney for Anne Cox Chambers, one of the two sisters who controls the company. Allen was piloting one of the planes.

J. Eric Dahlgren was managing director of the firm's Atlanta office, specializing in corporate mergers and acquisitions, with clients including Cox. Michael Fisher was the principal attorney for Manheim Auction, the largest used car auction company in the world, a Cox subsidiary. Craig A. Folds was an associate who also worked on various corporate and merger assignments.

The lawyers were killed Saturday morning when their private Cessna 525 CitationJet collided with a single-engine plane piloted by an electric utility worker who surveyed transmission lines for Georgia Power. The planes had taken off around the same time at different airports. The wreckage dropped into a residential neighborhood in suburban Cobb County, but no one on the ground was injured.

—John M. Higgins

DBS unlikely to get new rules

Hill staffers say mood is to encourage cable competition

By Chris McConnell

With rate regulation headed for a sunset and competition to cable lacking, lawmakers have little wish to impose new rules such as must-carry on DBS operators, congressional staffers said Monday.

"Timing in this life is everything," Senate Commerce Committee Republican Counsel Pete Belvin said, citing both the prospect of a DBS must-carry rule and the increase in the satellite compulsory copyright fee.

Her comments followed similar remarks by Senate Commerce Committee Chairman John McCain (R-Ariz.), who told a Bloomberg Forum in Las Vegas that DBS companies should be allowed to carry local broadcast signals. "Right now there is little or no competition to cable," McCain said.

Belvin added that the technical limitations to today's DBS systems "almost forces you to look at some sort of interim must-carry relief." Belvin also said lawmakers want to see competition develop rather than re-regulate cable. And she added that time is short until next year's scheduled sunset of cable regulation.

Other staffers related a similar view. Whitney Fox, aide to House Telecommunications Subcommittee Chairman Billy Tauzin (R-La.), said her boss is "very interested in seeing local signals."

House Commerce Committee Minority Counsel Andy Levin said Rep. John Dingell (D-Mich.) agrees that lawmakers should promote satellite competition rather than place new regulations on the business. Levin added, however, that Dingell has not yet developed a position on satellite must-carry.

Neither has Sen. Ernest Hollings (D-S.C.), said Senate Communications Subcommittee Democratic Counsel Paula Ford. But Ford added Hollings is interested in promoting competition to cable and studying the technical limitations of satellites.

The collection of Hill staffers had less to say on the subject of digital TV must-carry. Asked by Anita Wallgren of the office of FCC Commissioner Susan Ness what the commission

should do about digital TV and the rule requiring cable operators to carry the analog signal of local broadcasters, staffers said their bosses have not made up their minds on the matter.

Belvin said the best option would be for broadcast and cable companies to hash out an arrangement themselves.

But she also acknowledged the odds against such an agreement.

Other staffers added that, regardless of whether a digital must-carry rule exists, lawmakers will not want to see any high-definition broadcasts blocked by cable settop boxes unable to relay the signal. "That would seem to be a

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fairly serious concern," Belvin said. Fox of Tauzin's office added that her boss recently watched a Washington demonstration of the Texas Rangers' home opener in hi-def and that Tauzin wants consumers to be able to see the improved pictures.

Staffers discussed the satellite and digital TV must-carry issues as they tackled a range of pending policy matters. Attending broadcasters asked about the FCC's recent interest in studying proposals to establish a low-power radio service—an idea that drew

some skepticism from the staffers.

"We're going to be taking a very close look at that," said Belvin. Ford added that Hollings, too, is concerned about how the commission is using its resources, but also is interested in promoting entrepreneurship. ■

Boning up on cluster management

NAB told that managers need help dealing with larger groups of stations

By Elizabeth A. Rathbun

Managers of newly minted radio-station clusters are doing business in a whole new way compared with when they ran just one or two stations. And they need help adjusting, says Greg Stefaniak, a professor of radio, television and film at the University of Arkansas at Little Rock.

"Basically, it's really different being a cluster manager," Stefaniak said Sunday in presenting research findings at NAB '98. The National Association of Broadcasters awarded \$25,000 last

year to fund Stefaniak's and five other studies of various radio and TV issues.

Stefaniak contacted every cluster manager in the country last fall and in January to try to determine how their job skills had changed. "A major shift appeared to be going on," Stefaniak said. Seventy-seven percent said they strongly agreed that they had a greater use for delegation skills. Time management came next at 75%, followed by "all organizational skills" (61%); "culture development skills" (50%), and conflict management and budgeting skills (both 45%).

Seventy percent agreed that they had

a greater need to accept and deal with change, while 61% found focus also was important.

"Everything they were doing [before consolidation] they had to do better and more of," Stefaniak said. They also felt their general role was shifting from one of a broadcaster to more of a businessperson.

And "they said they needed help" in making the adjustment, Stefaniak said. "Stress and frustration are high," one manager wrote in his comments. "We have huge responsibilities and the 'crisis management' style reigns."

Stefaniak encouraged NAB and other groups to offer more support, such as seminars and literature. These managers need to know that "they are not alone in dealing with this shift.... Obviously, they are not."

In fact, there were 344 general managers who once had managed one or two stations and in fall 1997 were managing three or more in one market, Stefaniak reported. The response rate was 33%.

In another radio research report presented Sunday, employees of a newly bought company reported a high level of satisfaction with the change, despite some drawbacks. While "there is more of an aura of working for a bank rather than that fun, laid-back aura of working for a radio station," employees felt their talents were recognized, that they had a better chance to advance and that the benefits were better, said Kathleen Fox of Ohio University at Athens.

Fox talked to employees in four markets six months after their company had been acquired by another. While "any type of change causes job dissatisfaction," most important six months later was how the new management handled it. Fox found. The new company "must follow through on their promises," she said.

Employees also said they like working for "a major player [that] gives us a better product." ■

Powell's 5-point public interest plan

Commissioner Michael Powell is developing a five-point plan for addressing the broadcast public interest standard.

Speaking to a gathering of the American Bar Association in Las Vegas, Powell compared the public interest standard to modern art, commenting that "people see in it what they want to see."

"That may be a fine quality for art, but it is a bit of a problem when that quality exists in a legal standard," Powell said. He added that the vagueness of the standard "invites mischief by regulators and politicians to advance parochial interest under the guise of public interest."

Lacking specifics on defining the public interest standard, Powell said he has attempted to draft his own "guiding principles" for applying the standard to FCC decisions: "Only by doing so, do I feel I can execute this haughty responsibility without feeling my decisions are the result of nothing more than my personal preferences or the skillful lobbying efforts of the most effective special interest groups or politicians."

He listed five questions to ask about potential FCC broadcast regulations in the public interest: (1) Does the FCC have the authority? (2) Should the matter be left to Congress? (3) Should the matter be addressed by another federal agency or a state agency? (4) Should government address the issue at all? (5) Would government action violate the Constitution?

Discussing the first question, Powell said Congress "has rightfully asked in the context of free airtime for candidates whether the specific provisions dealing with lowest unit cost bar free time under the broader general grant of jurisdiction." But Powell did not apply his five questions to other public interest issues facing the FCC. Discussing whether an issue is better left to Congress, Powell said regulators should not take up an issue merely because Congress has declined to act: "I vehemently reject the contention that the FCC is in place to do things for Congress that they can't or won't do for themselves. But invoking the general public interest standard to supplement Congressional authority is unconscionable."

—Chris McConnell

Out with the old, says Iger

Industry, regulators need to create new models; digitizing old order won't be enough

By Steve McClellan

Broadcasters have to reinvent the way they do business and the federal government has to rethink the way it regulates broadcasters in the digital age. Changes in the network-affiliate relationship are essential if broadcasting is to thrive going forward.

That was the message from NAB keynote speaker Robert Iger, president of ABC Inc., delivered in a luncheon speech Monday.



ABC's Iger says the entire business has to change.

The communications business has changed dramatically in the past two decades, he said, noting the development of remote controls, VCRs, satellites, multichannel cable, not to mention the computer and the Internet. "Yet the broadcasting industry is still trying to

conduct business in the same way it has for decades. The network-affiliate partnership has changed very little, and the same goes for relationships between studio and network, syndicator and local station."

The processes for everything from program development to promotion and ad sales have remained essentially the same over the years, said Iger. "All of this while viewers are consuming our product in a thoroughly different manner.... It is time to create a new paradigm for our business. It would be great to think digital will be our savior, but it won't be enough. Unless we create sweeping change, digital won't come close to fulfilling its promise."

The entire business has to be re-examined, he said. Currently, broadcast industry regulation is "ludicrous," he said, because it is based on a 1950's perspective. "We are still operating under too many limitations. Limits on station ownership, cross-ownership issues, network-affiliate relations, I could name more. All were conceived in an era that no longer exists."

Iger also said trade and labor unions have recognized the new realities of the

broadcasting business and make concessions. "Trade unions need to reconsider their residual formulas that are obstacles to new forms of distribution," he said. "They need to embrace, rather than deter, the innovations necessary to keep this business sound." If they don't, union jobs could be at risk, Iger suggested.

Cable networks have become the new cash cows of the business, said Iger. Of the major broadcast networks, only one (NBC) is on the top-10 list of most profitable television networks. Iger said that broadcasters, to remain viable, must find a way to develop subscription fees and thus mirror the cable model of both advertising and

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pay revenue streams. But for that to happen, he said, networks need the flexibility to "repurpose" programing, which broadcasting affiliates strongly object to.

Iger noted that some local stations are already beginning to reuse their own newscasts, on cable channels or in LMA relationships. Network repurposing, he said, "has been bogged down in debate about exclusivity for too long." He also said the affiliates are going to have to help pay for some expensive network programing, like the NFL. "We need to compare profit margins and we need to share risks," he said. The occasions when the network will need such help is limited, said Iger.

"It would be great to think digital will be our savior, but it won't be enough."

"But this support is critical, and without it, the losses and the risks cannot continue to be justified."

Iger also said the networks need to find ways to produce programing at a lower cost. "Spending is too unrestrained and we take fewer and fewer chances with new concepts and new creative people."

Iger also took a slap at Jerry Springer, saying his talk show shouldn't be on the air. "There is room on the air for adult-oriented programs of high quality," said Iger. But Springer is an "embarrassment" and "the entire industry suffers from the association." That comment drew a large round of applause from the audience.

The digital era gives broadcasters the opportunity to return to the forefront of technological improvement, said Iger. Disney and ABC intend to spearhead many industry advances. He said convergence represents a great opportunity—with estimates that \$7 billion in internet ad revenue will be generated by 2005. ■

NBC's Braun proposes new affiliate arrangement

Network heads discuss repurposing, network criticism

By Steve McClellan

Network compensation costs ABC, CBS and NBC \$200 million each annually. It's pure profit for the affiliates. Neil Braun, NBC Television Network president, wants to turn that network cost into an investment pool that makes profits for the network and bigger profits for the affiliates.

Braun said Monday (April 6) at the NAB convention that he would distribute a proposal to NBC affiliates later this month that affiliates invest most, if not all, of their network compensation dollars in joint ventures with the network.

The investments could include anything from expensive program rights to companies on the cutting edge of digital technology. The proposal, in part, is an attempt to defuse such hot button network-affiliate issues as compensation and program exclusivity, said Braun.

"What I'm trying to do is put the whole conversation about the changing network-affiliate relationship on a different level by putting something real on the table," he said. "We need to disengage from this argument we get into every two years" over compensation and exclusivity and find ways to maximize the return on pooled assets.

Long-term, Braun said, it is essential that affiliates understand that the com-

pensation pool "needs to be invested to compete."

But Braun said he doesn't expect all affiliates to participate in the venture. He does, however, hope that a "critical mass" of affiliates in perhaps the top 75 markets will at least say, "there's something here, let's figure it out."

Once the proposal is distributed, Braun said he expects to go on the "equivalent of an IPO

[initial public offering] road show" over the summer to sell affiliates on the idea. Braun says he wants to receive feedback and proposed changes from the affiliates by year's end so that a potential venture could be launched in the first quarter of 1999.

"This is really about asset management and developing new revenue streams" Braun said. His remarks came during and after a TVB/NAB panel session on key network issues. Both Braun and ABC Network President Preston Padden argued that the networks need to be able to aggressively "repurpose" programing in as many exhibition windows as possible to amortize the costs of increasingly



Braun has a plan to make money for both the network and affiliates.

expensive program rights.

"More fully exploiting those opportunities is key to keeping the business strong," Padden said. He noted that some local stations are repurposing their own programing (such as news) to maximize profits.

But many affiliates hate the idea of network program repurposing because they fear it will dilute the strength of the network brands. At NBC, for example, affiliates haven't been thrilled that the network has used many of its key news talent in its MSNBC cable/Internet venture or its co-owned cable network CNBC. But, said Braun, "our network news product is stronger now, concurrent with the growth of CNBC and MSNBC."

On the issue of program quality, Marty Franks, CBS senior vice president/general counsel, challenged network critics. "There's a real disconnection on this issue," he said. "It's dominated by cocktail party logic. Viewer choice doesn't mean there is going to be 80 channels of 'Leave it to Beaver.'"

Larry Jacobson, Fox network president, agreed with descriptions of some of its attacking animal and car chase specials as "trash." At the same time, they get good ratings and an upscale audience. Trash or not, "it's compelling television," he said. Jacobson stressed that such specials are a small part of the programming on Fox, which has the overall goal of delivering a range of "distinctive, well crafted and different shows." ■

Kennard pushes for women, minorities

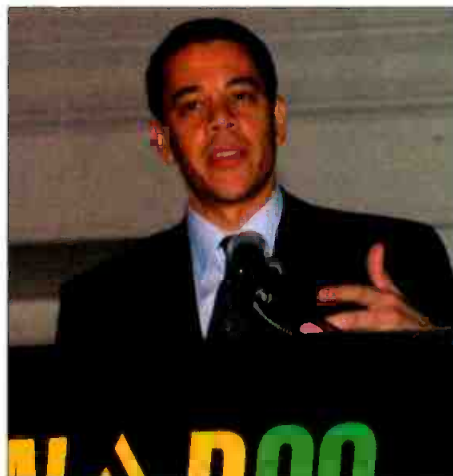
Tells broadcasters to come with a plan to encourage more participation

By Chris McConnell

FCC Chairman William Kennard this week challenged broadcasters to come up with some ideas in the next two months for improving minority and female ownership in their business.

"The person who owns the station has the ultimate power to shape public opinion," Kennard told broadcasters in his first address to the NAB convention as chairman. He voiced dismay at the dwindling level of minority broadcast ownership (2.8% in 1997) and said he is committed to reversing the trend.

The speech followed a series of meetings between Kennard and NAB board members in Las Vegas at which Kennard discussed his concerns about minority ownership. During an earlier speech to low-power TV broadcasters, Kennard cited those meetings and said he had heard little optimism for the



Kennard: "We have to get this spectrum working for the American public."

prospects of improving opportunities for new industry entrants.

"I've had meetings like that all day," Kennard told the low-power broadcasters. "I've heard a lot of nay-sayers."

Later Kennard's tone was more upbeat. "A number of people were very encouraging," Kennard said after his morning speech to the full-power broadcasters.

NAB President Eddie Fritts said his group has already begun holding talks with Kennard and other commission officials about ideas for improving minority ownership. He voiced hopes that broadcasters will "have things to talk about" in 60 days. Potential ideas Fritts cited included mentoring programs and scholarships.

Fritts also said the NAB would support a revised tax certificate policy, something Kennard has said he wants to explore.

NBC General Counsel Richard Cotton added that his company, too, will be trying to produce suggestions for improving minority ownership. But Cotton added that industry economics pose



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a hurdle to altering the current situation.

Broadcasters were less warm to another idea—low-power radio—Kennard has cited as a potential boon to minority participation in the industry. Kennard's proposal to explore the prospect of "microradio" stations has drawn fire from broadcasters in past weeks and was the subject of the first question the chairman received from the broadcast audience after his speech.

"Work with me on this," Kennard told the broadcasters, adding that the commission will look closely at concerns about interference among the small radio stations.

Later, Fritts said the association still views microradio as a "troubling proposal. We're concerned about spectrum integrity," he added.

Fritts opened the session by restating the results of the NAB study pegging the value of the industry's annual public service at \$6.85 billion. Kennard responded that he is aware most broadcasters "serve your communities in many valuable ways.

"Eddie, you don't have to do a study to tell me this," Kennard said. But he added that other broadcasters do not take their public interest obligations seriously. "Some do, some don't,"

Kennard said.

He restated plans to conduct an inquiry into broadcast public interest obligations in the age of digital TV. That inquiry will include the study of plans to require broadcasters to provide free airtime to political candidates. "I hope that I can count on you to participate in this process," Kennard said.

He also said the FCC plans to hold stations to the digital TV construction deadlines set by the commission last year. "The bottom line is this," Kennard said. "We have to get this spectrum working for the American public." ■

Avid goes uncompressed

Launches high-end Symphony editor

By Glen Dickson

Avid, which has established itself as a maker of M-JPEG compressed nonlinear editors, has introduced a new uncompressed nonlinear finishing system for high-end television programs and commercials.

The 601 digital product, Avid Symphony, features three uncompressed real-time streams (two for video and one for graphics and titles) and a "total conform" feature that will conform material according to offline edits made in Avid's Media Composer editor, including the recreation of all picture and sound layers and effects.

"It lets you go back and forth easi-

ly between the offline and uncompressed worlds," said Avid Chairman Bill Miller in a Sunday press conference.

Miller also announced that Avid is developing a high-definition editor, Highlighter, that uses mezzanine compression; the company is demonstrating a prototype at its NAB booth. Avid also is showing HDTV editing in its resolution-independent Media Illusion compositing and effects system by offlining in Media Composer and finishing in HDTV on Media Illusion, as well as the upconversion of 16:9 images edited on Media Composer, Film Composer and Symphony.

"You'd be surprised how good 601

upconversion looks," Miller said.

Avid also has introduced two products that use DV-native compression, allowing them to work with the popular Panasonic DVCPRO and Sony DVCAM formats. The first, developed under an agreement with Panasonic, is NewsCutter DV, a DV-native version of Avid's flagship nonlinear news editor. The other, developed with Pluto Technologies, is NewsPlayer DV, a multichannel playback server. The products will allow broadcasters to transfer media from DV decks, edit stories on the NewsCutter DV and send completed news stories over a Fibre Channel network to the NewsPlayer DV server for on-air playback. ■

Flaherty sets hi-def goal

Accepting **BROADCASTING & CABLE's** Digital Television Pioneer Award Monday evening, CBS's chief technologist Joe Flaherty urged the TV industry to adopt the highest-quality digital TV service it can. "Good enough is no longer perfect, and may become wholly unsatisfactory," said Flaherty, who believes other broadcasters should join CBS in offering HDTV in the 1080i format. "Quality is a moving target.... Our judgments as to the future must not be based on today's performance, nor on minor improvement thereto. After all, the future isn't what it used to be."

Don West, **BROADCASTING & CABLE** editor-at-large, who presented the award, called Flaherty the "father of HDTV" for introducing and promoting the technology in the U.S. for the past 17 years. West also noted that Flaherty, who has worked for CBS for 41 years, was chiefly responsible for the development of electronic news gathering.





Broadcasting & Cable



“Committed to the First Amendment...”

BROADCASTING & CABLE congratulates all the recipients of this year's Broadcast Pioneer awards, but we grant ourselves a “Pioneer's Preference” for B&C Editor at Large Don West.

For most of the past half century, West has chronicled the rise of the broadcasting and cable media in the news pages of this magazine while using the editorial page to urge them on to the higher ground of First Amendment parity with print. In that mission he has followed in the large footsteps of magazine founder Sol Taishoff.

In speeches, writings, interviews and industry appearances, West has argued tirelessly that the public interest is best served by an electronic press free of government control but constrained by the responsibility such freedom entails.

That is a claim worth staking and a legacy worth honoring.

Radio mergers raise flags

By Chris McConnell

FCC and Justice Department officials are conferring about a collection of proposed radio mergers that would give companies control over 60% or more of the local radio advertising revenue market.

"These cases give the commission some concern," FCC Mass Media Bureau Chief Roy Stewart said about the deals. He estimated about 10-12 such mergers are pending before the commission.

Speaking at a convention panel discussion of the FCC's ownership rules, Stewart added that the Justice Department lacks the resources to conduct its own review of every such radio merger that comes before it.

"Sometimes Justice doesn't touch it," Stewart said. He added that FCC and Justice officials are trying to develop a consensus on how to treat such radio deals. Stewart also said the dialogue between the commission and Justice has just begun, but he voiced hopes regulators will soon reach a resolution.

"This commission has a responsibility to develop some more clarity," Stewart added.

Justice Department officials previously have allowed radio mergers in which one company controlled up to 53% of the local radio advertising revenue. Stewart said some of the newer applications would push that threshold as high as 75%.

Stewart pointed to the precedent of the deal involving a 53% market share, but added that there is no "magic number" triggering a closer review by FCC officials.

Discussing the collection of broadcast ownership rules pending before regulators, Stewart also voiced hopes the commission will be able to wrap up its review of the rules

this summer.

Other participants in the discussion pushed for an FCC decision that will allow stations to retain local marketing agreements (LMAs) even if they are counted as "owned" stations under the FCC's attribution rules.

"I think it's a no-brainer," LIN Television's Gregory Schmidt said. He cited a new report that broadcasters are preparing on LMAs. The research shows that 75% or more of the agreements involve start-up stations or stations that were faltering financially before the agreement. ■

"These cases give the commission some concern," FCC Mass Media Bureau Chief Roy Stewart said about the deals. He estimated about 10-12 such mergers are pending before the commission.

'Springer' slammed in Vegas

"Jerry Springer" came under more fire in Las Vegas this week.

Sen. Joe Lieberman (D-Conn.) and former Education Secretary William Bennett brought clips of "The Jerry Springer Show" to the NAB convention to punctuate their calls for a cutback in TV sex and violence (and even ABC's Bob Iger took a swipe at the show [see page 51]).

"Something is going deeply wrong in our culture," Lieberman said. He pointed to last month's shooting at an Arkansas school as well as the decision by CBS to syndicate a new late-night show featuring Howard Stern. Lieberman called the CBS move "deeply disappointing."

Last month, Lieberman and Bennett sent Seagram Inc. a "Silver Sewer" award for the company's stake in the Springer show.

This week, Lieberman said he had spoken with USA Networks chief Barry Diller about the show and said he was encouraged by the company's response. He voiced hopes the company soon will deliver "a more detailed statement of what will become of the show in the future."

—By Chris McConnell



A.H. Belo has ordered Tektronix/Grass Valley's 110-HD production switcher, a high-definition version of Grass Valley's popular 110 switcher.

Tek snags HDTV sales

After announcing its commitment to produce full-bandwidth (1.5 Gb/s) high-definition routers and switchers in January, Tektronix cruised into NAB with contracts in hand from A.H. Belo Corp. and Scripps Howard Broadcasting for HDTV equipment.

Tektronix Video & Networking President Timothy Thorsteinson announced that Belo has ordered a Tektronix/Grass Valley 110-HD high-definition production switcher, and Scripps-Howard station WXYZ-TV Detroit has ordered a M2100-HD master control switcher.

At its NAB press conference on Sunday, Tektronix also signed a joint technology agreement with Mitsubishi to sell, market and service Mitsubishi's 1100 series HDTV and SDTV encoders and decoders, as well as Mitsubishi multiplexers and de-multiplexers. The products will be sold exclusively by Tek in the U.S. under the Mitsubishi-Tektronix Grass Valley Products name. Mitsubishi's hi-def encoder costs \$295,000 and the decoder costs \$130,000.

"There's been a lot of controversy over formats, but we firmly believe HDTV should come into this world," said Y. "Super" Yamaguchi, senior managing director of Mitsubishi Electric Corp. in Japan. "The U.S. can become a leader in this technology."

—Glen Dickson

Little radio stations, big issues

Broadcasters angered over unlicensed radio stations, worried about 'microradio'

By Elizabeth A. Rathbun

Pirates or operators of "microradio" stations?

By any name, the issue is an emotional one for licensed broadcasters, who tend to refer to their unlicensed, low-power counterparts as "pirates." And the debate is heating up as the FCC considers a proposal to establish a 1-watt "microradio" service on the AM and FM bands.

FCC Chairman William Kennard was forced to address the issue Tuesday at the FCC Chairman's Breakfast during NAB in Las Vegas. An irate broadcaster called microradio "a very bad idea." Pointing out a recent proliferation of so-called pirates, he asked, "How can you possibly maintain control over thousands of [microradio] stations?"

"Let's not confuse pirates with microbroadcasters," Kennard replied. "The FCC will do everything we can to get the illegal broadcaster off the air."

But groups like minorities, small business owners and church groups need access to the airwaves that is not currently being provided, Kennard said. "We will be cautious here," he promised.

Later, some local broadcasters at a panel called "Pirate Radio Stations: Will They be Walking the Plank?" shook in anger or spoke in heated language as they described situations in their markets. Additional security kept a close eye on the proceedings but a rumored demonstration did not materialize.

"If you don't have a license, get the hell off the air," said Mark Krieger, broadcast engineer of WGAR-FM Cleveland. There are six full-time pirates on the air in his market and at least one case of air-traffic interference and another of licensed FM interference, he said. One station airs "a continuous string of obscenity." The problem is, "if you don't have a license, you don't answer to anybody."

However, Krieger is sympathetic to the idea of licensed low-power FM. "There may be a general basis for dialogue here," he said.

Phil Roberts sees a billboard for an illegal station on his way to work as executive director of the New Jersey Broadcasters Association. "The ones I hear sound very much like commercial



FCC Bureau Chief Richard D. Lee tells an NAB panel that he is meeting with more unlicensed radio operators to try to persuade them to close down before they are fined or taken to court.

radio stations," complete with advertising, he said. People pushing for low-power radio have "wrapped [themselves] up in the First Amendment...and I think it's very clever."

Twenty-two pirates fill the airwaves along his 10-mile commute, said John Morris, chief engineer of WLYF(FM) Miami. "They keep increasing their power...and there just doesn't seem to be any action to stop them," he said.

On the contrary, "we have been very aggressive and will continue to be aggressive," said Richard D. Lee, chief of the FCC's Compliance and Information Bureau. The commission shut down 97 pirate stations last year and in the first quarter of this year closed 65. Five of those actions were announced Monday, when the FCC said it would fine unlicensed FM operators in Texas, Washington and Ohio \$11,000 each.

Operators of unlicensed stations "are voiceless," said San Francisco attorney Louis N. Hiken of the National

Lawyer's Guild Committee on Democratic Communications. And since "First Amendment speech is qualitatively different from commercial speech," they "are really taking what is theirs."

As for concerns about a scarcity of frequency, he urged the players to sit down and address the issue to make room for all. "These are not people who want to compete with your stations," Hiken told the broadcasters. Though "there are opportunists in every industry," the committee is seeking only noncommercial slots for low-power radio, he said.

Broadcasters don't fear the economic competition from pirates or microradio operators, said John Fiorini III, a Washington lawyer who represents the Radio Operators Caucus. What is of "grave concern [is] reserving the integrity of the signal.... If you don't reach the audience, you're out of business."

The AM and FM bands already are too congested, he said. He also questioned how the already-pressed FCC could enforce a new set of rules. The evidence so far "doesn't give you a lot of comfort that all these people will be good little broadcasters and do what they're supposed to be doing," Fiorini said.

The NAB has quickly taken a stand against the microradio proposal. "Interference on radio is always a massive problem," spokesman Dennis Wharton said Tuesday. "It would be folly to license hundreds of low-power stations when the FCC's ability to protect the integrity of the spectrum is questionable already."

Captain, our Captain

Bob Keeshan, star of the long-running children's show, 'Captain Kangaroo,' is the NAB's 1998 Hall of Fame inductee. Accepting his award on Monday at the NAB convention in Las Vegas, Keeshan told a luncheon crowd to keep focused on providing quality programming. "If you do, everything else will fall in line," he said. Shown in picture (from left): NAB president Eddie Fritts, Keeshan, and veteran broadcast executive Jim Babb.



Wall Street tuned to radio

Analysts impressed by medium's performance, calling it 'best of all possible worlds'

By Elizabeth A. Rathbun

Radio has never seen better days, according to a panel of Wall Street analysts gathered Sunday at NAB 98.

In fact, "we're not sure what radio could possibly do for an encore," said Bishop Cheen, vice president of First Union Capital Markets. The \$16.5 billion worth of radio deals last year were an impressive increase from \$3.4 billion in 1988, he said. The average radio stock price rose 400% in the past four years, 110% of that in 1997 alone.

All that was fueled by a low 7%-7 1/2% cost of capital and "a very giving and forgiving market," Cheen said.

Though double-digit gains are continuing this year, whether the huge gain of 1997 can be duplicated is doubtful, Cheen said.

"It's really the best of all worlds today," said Craig Dougherty, executive vice president and manager with Union Bank. "Money has never been this easy [to borrow]." He expressed concern, however, that managers new to running giant radio companies might create problems. "There's some executive risk and a number of these people might stumble," he said.

Since "Washington creates more value than the economy creates for the

industry," TV has not enjoyed the same benefits that radio did last year, said Victor Miller, with Bear Sterns. The Telecommunications Act of 1996 did much to deregulate radio, but put most TV issues in the hands of the FCC.

Thus, 1997 was a "small year" for TV, with \$8.7 billion worth of stations sold, Cheen said. As recently as 1991, only \$150 million worth of deals were done and TV "was not a legitimate business in terms of Wall Street," according to Miller.

Some deregulation by the FCC is "very important," he said, whether that's allowing same-market TV LMAs or relaxing the TV-radio ownership requirements. Meanwhile, companies like Paxson Communications and Sinclair Broadcasting are using the disparity in how UHF and VHF stations are counted at the FCC to pile on the stations.

Weather a TV or radio company, bigger is better, the panelists said. While 10 years ago there was a bias against being public, now there's "a strategic imperative that you be public," Dougherty said. It gives a company operating and financial leverage and improves its stock valuation, he said.

"Nobody knows how big these companies can get. That plays very well [on Wall Street]," Cheen said.

The panelists agreed that TV stocks

do not yet reflect the unknowns of the digital age. "Nobody really knows what's going to happen with digital," Dougherty said. Small- and mid-market broadcasters in particular are worried about getting a return on their investment, he said.

"This digital spectrum is worth something...I have to think it will offer some kind of promise," Miller said. ■

Kinder, gentler talk show

Children ages 9-15 are the target of a new radio talk show called "Your Feelings Friend." Hosted by Idaho psychologist Alexandra Delis-Abrams, the show will work like a standard talk show, with listeners calling in with comments and questions. "It's a place where children can come and feel comfortable. I want to be their friend and their confidant," Delis-Abrams said in a news release. Delis-Abrams also is the show's executive producer. The show is available to be stripped five days a week after school or as a standalone on weekends.

—Elizabeth A. Rathbun

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