# The Selling of *HDTV*

## The Message is the Medium

**by Rob Sabin**

THE DEADLINE for this story passed with the last cycle of the moon, and the editors have taken to pleading into my answering machine for a sign, any sign, that I am still alive. I have been blocked for weeks. There is nothing left to do now but bypass the waking state and connect with the subconscious; just hook the fingers directly to the primal force, then stand back and watch as they perform their frenzied mating ritual with the keyboard. I will try anything, at this point, to escape the torturous prison of HDTV.

It began innocently many months ago when I suggested to *TPV* editors a series on the business, political, and technical aspects of high definition television (HDTV). I knew the subject was multi-faceted, but unbeknownst at the time, it was also prismatic, reflecting and distorting each established "fact" when viewed from a different angle. And there were many angles. My file, containing clippings, government and industry reports, transcripts, press kits, spec sheets, notes, etc., now stands in the corner at three feet high, its loose pages flapping, the whole mess looming like some ugly monument to chaos. I have read it all. I have listened to hour after endless hour of rhetoric at HDTV seminars and conferences. I have heard, I believe, every possible scenario for the future of HDTV.

And the only thing I'm sure of is that I have walked head-on into a reporter's nightmare. Now I stand (with deadline long gone) mired in HDTV quicksand. So, before it is too late, it is time to tell the folks at home what I've learned by diving into this madness. Surely, there must be some redeeming theme in HDTV? What can be said about a powerful medium called television and its beastly hunger for more power? Why are scores of people in a dozen trade groups and government panels scrambling around trying to make sense of high definition television? Where is the HDTV gravy train, and who's running to catch it? Why, after all, has the press focused on the haggling over technical standards, when the real story is a crippled American industrial complex, and the ramifications of bigger, better televisions on a society that has never asked for them and is already in frightening trouble from those it has?

These are indeed the questions for our time. The rest is just mindless foreplay until some *decisions* are made about how to proceed with the new medium. And it appears that any decision, by anybody, about anything, is a long way off. Until we see what the Japanese will do in the US with their available technology; until we see whether the broadcasters can develop and choose an HDTV transmission system that competes with other media; until we discover just how far the cable TV industry is willing to go in its quest for market supremacy; until we see what the government will do about making long-term industrial research and manufacturing more attractive to US companies . . .

That's a lot of untils, but it proves that for all the hullaballoo, HDTV is still a non-story waiting to happen. More fascinating than what's being repeated by industry and government spokespeople is who these people are, and what they or their organizations stand to gain by forcing HDTV on an unwary American consumerate. I have seen their faces time and again at industry events or their names in the news: they are, I see now, a family. HDTV has become their baby, and the proud parents seem filled with conscience and the knowledge that they're doing what's right for their industry, science, or government—which boils down to doing what's right for the people.

Yes, they are out there now behind the scenes, shaping a future that will affect everyone who's ever fallen asleep watching *Laverne & Shirley* reruns, or gotten the news from the networks instead of *The New York Times*, or bought some product because of a subtle message received on a commercial break.

Lest I be accused later of being alarmist: I have a relationship with TV that dates back several years

to a stint as a technician for CBS News. On the day of my interview, I recall wandering around the Broadcast Center on West 57th Street in New York and finding the air charged with an almost physically palpable energy—borne from housing the electronics to reach every television in America. At one point, I walked by a 1-inch tape machine with its reels spinning and, looking up at the monitor, realized it was playing back a nerve-gas soap opera being fed to several time zones. It would have taken only a second to pluck the tape from the guides and bring the network down to black.

It was a nasty impulse that was never acted upon, but then, someone should make the point about a medium that is known to cause an alpha-wave-producing state of hypnosis in the viewer. We could spend the next decade arguing about how bad television is for society in general and intellectualism in particular; how it puts people to sleep and changes the way we perceive the world, and worse, places unspeakable power in the hands of the media manipulators. But others have done that. Jerry Mander's classic book *Four Arguments for the Elimination of Television*[1] could sufficiently overwhelm you on the topic. Coupled with Neil Postman's *Amusing Ourselves to Death*,[2] the pair is enough to make you throw a brick through your Trinitron. Both are highly recommended for "light" reading, *if* you can tear yourself away from the screen.

For now, let's just say that as viewers we become physically and emotionally involved with our TVs, and come to rely on them heavily for *what we perceive* as information. But is it really? We all know what's happened to presidential elections ever since Richard Nixon figured out that it's not who you are and what you stand for that swings the vote, but rather, what kind of plastic impression you can leave in a 10- or 20-second news bite, or a 30-second commercial.

Who can say what effects HDTV will have on the world at large, or how badly it might magnify these existing problems? What will happen to politics or the selling of products—or to the impact of TV news, when the horrifying carnage from China slaps us across the face in 16 : 9 aspect ratio and the immediacy of 35mm film? Will we all freak out? Will we become numb like zombies? Will we go broke and fat eating fast food after repeated exposure to the 4-1/2 foot, high-resolution image of a double deluxe cheeseburger sizzling on the grill in four-channel digital surround? Who knows—but no one seems to care about that, or if anyone even wants HDTV.

No, the men and women behind HDTV are too busy guiding the huge, pulsating Machine they've created to stop and worry about whether we're marching squarely toward intellectual wasteland. Business is business, after all, and there are industries to be protected and governments to be held secure and, of course, careers to be built.

JUNE 1, 1989 was a sweltering hot, humid day in New York City, but inside the Marriott Marquis at Times Square, the central air blew cold and hard to the point of discomfort. The event was HDTV Conference 1989, the "First Annual" as declared by the program. It consisted of two days of seminars and panel discussions on the various aspects of HDTV: Standards, Delivery Media, Production, Non-Broadcast Uses, Electronic Theaters, Manufacturing and Government among them. The conference, a neat microcosm of the whole HDTV universe, had been organized by Dale Cripps of *HDTV Newsletter*,[3] which has become *the* primary media outlet for new developments in HDTV.

About four years ago, Cripps got the idea that HDTV was going to happen and that there would be the need for a dedicated source of information, and indeed he was right. He and editor Sam Bush have done an admirable job of reporting and analyzing a complex topic, and their stature has risen with the industry. The newsletter, which has a limited but presumably growing readership, costs $387 for a 10-issue annual subscription.

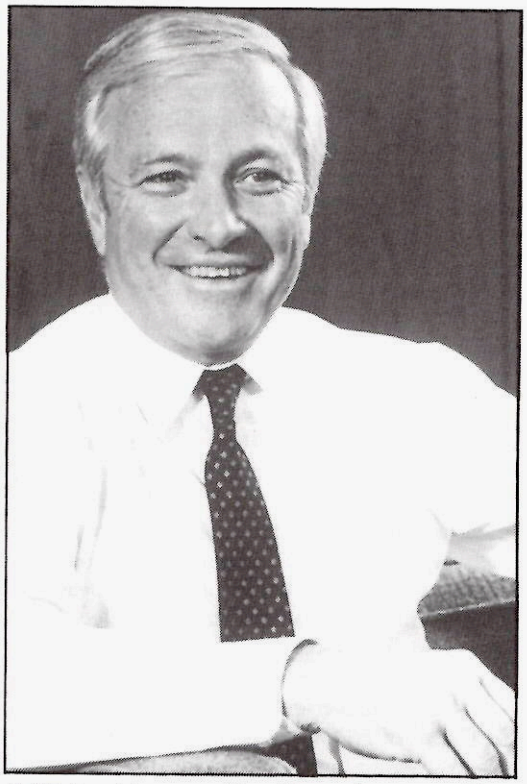
For this event, which industry execs paid $595 each to attend, Cripps and Bush teamed up with a firm called Meckler Conference Management. They also announced, in the back of the program, two new "Meckler publications" written and/or edited by them: *The New TV - An Essential Guide To HDTV*, a reference book priced-to-sell at $29.95, and a quarterly magazine called *HDTV Review* at $77. The team is also involved in industry research and consulting, and development of two specialty HDTV delivery services expected to go on line in the early 1990s. Good marketing dictates expanding to fill an expanding market, and Cripps and Bush are to be commended—not only for opening important lines of communication in a fledgling industry, but for taking advantage of rising demand for HDTV books and services.

The list of speakers for the conference reads like a Who's Who of HDTV, or more appropriately, the

[1] *1977 Quill/William Morrow & Co. Inc., New York, New York.*

[2] *1985 Viking Penguin Inc., New York, New York.*

[3] *Advanced Television Publishing, PO Box 5247, Portland, Oregon 97208-5247.*



**J. Richard Iverson President, American Electronics Association.**

roster at the HDTV All-Star Game. Among the key players were:

- Pete McCloskey, president of the Electronics Industries Association, which has been fighting to guarantee that Japanese and European TV makers won't be boxed from the US HDTV market by paranoid protectionist legislation;
- J. Richard Iverson, president of the American Electronics Association, which has been telling anyone who'll listen that if the US doesn't get back into building TVs, VCRs, or the chips that go inside them, it could become a second-class technological power and slip into military mediocrity;
- Representative Edward J. Markey, D-Massachusetts who, as chairman of the House Subcommittee on Telecommunications and Finance, has zeroed in on HDTV and made it a key issue on Capitol Hill;
- Greg DePriest, vice president of the Association of Maximum Service Telecasters, who now spends all of his waking hours backed against the wall as one of terrestrial broadcast's most vocal defenders in an age that threatens to pass it by; and
- "Stormin' Eddie" Horowitz, formerly of Home Box Office, now senior vice president of Viacom International, who first put The Fear into broadcasters over cable's plans for HDTV, and still staunchly defends his industry's right to program what it wants, when it wants.

Stormin' Eddie. That's not my appellation, but a friendly poke from Greg DePriest when I mentioned Horowitz's name in this context. I'd heard of Horowitz for the first time over a year ago, when *TPV* editors handed me an HBO White Paper they had obtained, dated June 19, 1987, which had been distributed to various parties within the cable industry.

The paper was an overview that defined HDTV and pressed hard for cable's participation in the new medium. While it never explicitly suggested jumping the broadcasters on HDTV as a competitive measure, it stressed the spectrum handicap terrestrial broadcasters were expected to have in deploying HDTV and the copy I had been given was marked up with editor's notes like "Fascinating, let's excerpt . . . " and the working headline "HBO's Preemptive Strike." The letter sent along with the paper on HBO letterhead was a call to arms, urging cooperation between cable programmers and local operators in establishing a standard and working with the industry to ensure cable's competitive position in HDTV. The signature at the bottom was that of Edward D. Horowitz, Senior Vice President of Technology and Operations.

Horowitz's name came up again without my prompting during a telephone interview early this year with Hal Protter, vice president of Gaylord Broadcasting Co. and general manager of independent TV station WVTV in Milwaukee. He is also chairman of the National Association of Broadcasters' Advanced Television Task Force and, along with DePriest, a key spokesman for his industry.

I had been asking Protter if the broadcasters were at all nervous about this little spectrum problem they seemed to be having, and like other broadcast representatives I've spoken with, he said no, not at all. Plenty of time now to work up a good system that meets the new FCC spectrum constraints. Last year, he said, things got a little hairy when the Japanese were still talking about bringing consumer HDTV monitors and disc players to the US, and "the HBOs of this world were hell-bent on pushing HDTV into the American home through some combination of cable and DBS (direct broadcast satellite) in 1989."

Since then, he explained, the economic realities of Japanese HDTV have clearly prohibited a mass acceptance of product anytime soon, and cable has adopted a more conciliatory attitude—its chief proponent being John Sie of TeleCommunications Inc., the nation's largest cable system. "A year ago, everyone was putting forth Ed Horowitz's statements that cable had to deliver the absolute best picture as quickly as possible," Protter said emphatically. "Well, the John Sies have won against the Horowitzes."

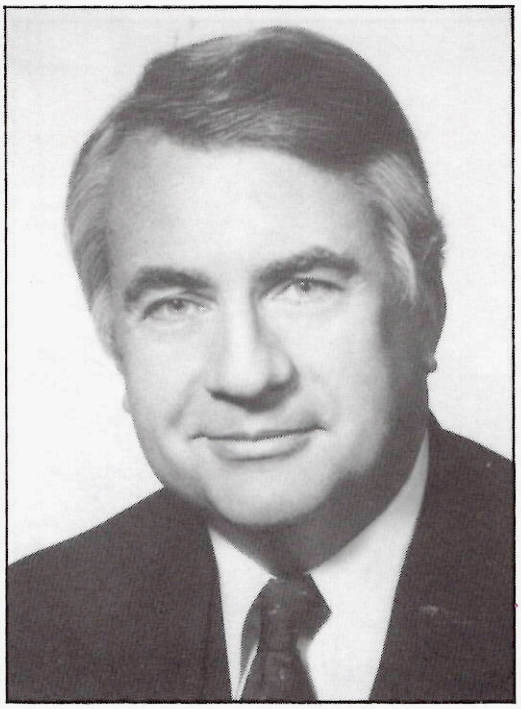
Horowitz is a man whose reputation clearly precedes him, but it was not until the conference that I discovered he had moved to a position of broad responsibility at Viacom. The entertainment conglomerate is involved in both broadcasting and cable operations, and Horowitz, a cable pioneer whose list of credentials reads like a Tolstoy novel, now oversees technical planning for HBO's competitor, Showtime, plus Nickolodeon, MTV, VH-1, and the soon-to-be-launched Comedy Channel. Among other professional titles, Horowitz is also chairman of the working group that's investigating the Broadcast/Cable Interface within the FCC's mammoth Advisory Committee on Advanced Television.[4] His move came right in the midst of this emerging HDTV turmoil, and it's probably safe to say his expertise and industry leadership on the subject held significant value for his new employers.

The first seminar I attended at the conference was a panel entitled "Delivery Media," and despite the air-conditioned chill in the hall that morning, the broadcasters were sweating. None of them will admit this publicly. But it is hard to deny your situation when you're out there in the open staring down the barrel of a shotgun—which is precisely where terrestrial broadcast has been since HDTV became a *fait accompli*.

Broadcasting is the only one of the proposed media that suffers a shortage of necessary spectrum to transmit HDTV. And while this doesn't preclude its participation, it does mean that it'll have to come up with a compression scheme that delivers a signal of high enough visual quality to compete with whatever cable, DBS, or home video can offer.

According to Wes Vivian, an independent HDTV consultant and lecturer on telecommunications policy for the University of Michigan at Ann Arbor, this will be no simple trick. "Any damn fool engineer just out of college could deliver you superb definition easily," he told me recently. "What's hard to deliver is superb definition with good motion rendition. That's where an enormous amount of engineering talent will be going—to get better resolution, but also to get a basketball game to look like a basketball game instead of a comedy."

Other media can, if necessary, tap the spectrum needed to deliver both. But the future of broadcasting will remain in doubt for most of the next two years while a slew of proposed transmission systems are implemented in hardware and tested at the Advanced Television Test Center set up by the broadcasters. This alone places the industry in a precarious position. "Their goal is to get the best quality they can in the spectrum the FCC is likely to give them," Vivian observes. "That is not likely to be as good as their competitors', but it may be good enough for a great many people."



**Peter F. McCloskey President, Electronic Industries Association.**

Which means good enough to stave off a mass exodus of HDTV-hungry viewers—who would flip forever to cable or satellite with one quick look, the way they once flipped from AM to FM after their first 10 seconds of Elvis's crooning "Don't Be Cruel." Only a fool would try to pass off a common mule as a trained thoroughbred, and the broadcasters know there will be no pulling the wool over the public's eyes if their HDTV system turns out to be a sterile barnyard animal next to a cable feed or the output of a VCR.

As if the quality of their signal weren't question enough, the broadcasters have had to deal with a veritable onslaught of competitors on HDTV. The newest players in the game are proposed satellite networks and the regional telephone companies—the Baby Bells—which are pushing hard to break down anti-trust rules that now prevent them from extending their fiber optic trunk lines right into your home for HDTV video delivery. The VCR/videodisc industry, of course, will also be an early participant in HDTV. And then there's cable.

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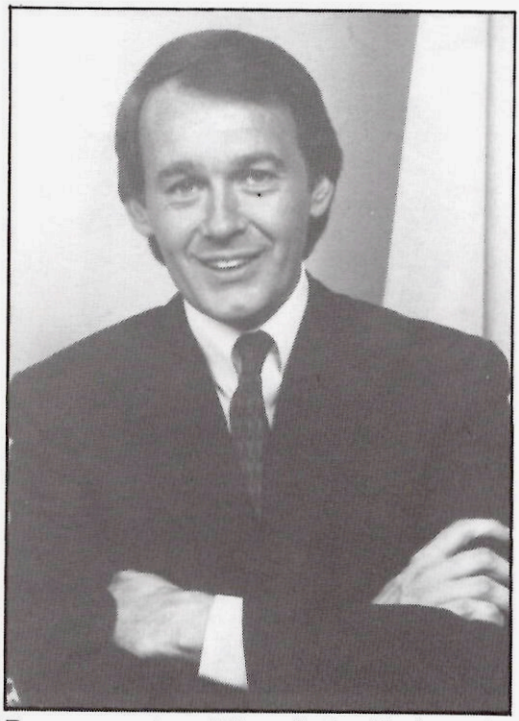
[4] *Founded in October 1987, the FCC Advisory Committee on Advanced TV is comprised of 25 top executives from all branches of the HDTV community, including many CEOs like Laurence Tisch of CBS and Neil Vander Dussen of Sony America. The FCC's choice of a broadcast format is likely to hinge on the findings of the Committee's three subcommittees and 14 working groups, which are now studying nearly every facet of the HDTV question. Altogether, more than 70 industry execs are participating in the Committee.*



**Representative Edward J. Markey (D-MA) Chairman, House Subcommittee on Telecommunications and Finance.**

All of these were represented on the panel that day, and each had its points. Direct broadcast satellite was promoted by Robert Hubbard, vice president of Hubbard Broadcasting Inc. and one of a third generation of Hubbards working in the family business. A Hubbard subsidiary called United States Broadcasting Company is planning an HDTV DBS service, and Robert Hubbard is now highly engaged with the design and procurement of the satellites to be used.

First off, Hubbard noted that DBS is so far the only proven delivery medium for HDTV. The Japanese have been broadcasting HDTV via satellite sporadically since 1987 using their MUSE E transmission system; they recently began broadcasting one hour a day to public screens around the country, and will go on line full-time in 1992 with the launch of a new satellite. Closer to home, a Canadian firm recently announced that it will begin broadcasting an HDTV satellite signal across Canada on a test basis this fall, using both MUSE E and Scientific Atlanta's HD-MAC system.

Besides wide bandwidth capabilities, the real advantage to DBS delivery of HDTV, Hubbard explained, is rapid, cost-effective implementation for every household in America. According to Hubbard, the cost of a direct broadcast satellite receiving system, which will use a small Ku-band dish, is expected to run consumers about $500. Because satellite signals are received nationwide, satellite programmers can amortize their costs over a wide viewership almost immediately. Considering the extremely high cost expected for the first HDTV monitors, this may be the only way for the first viewers to get HDTV programming.

As an example, Hubbard said, assume that HDTV monitors and VCRs have just come on the market, and there are two million potential households across the country ready to jump right in. For the cost of $500 beyond the several-thousand-dollar monitor, they could receive a satellite-delivered signal. "But if you translate that to cable, the same two million households averages out to 250 subscribers per cable system, or 50 customers per video store," Hubbard observed. "Will a local cable system give up two channels of NTSC programming to deliver one channel of HDTV service for only 250 subscribers? Can a video store afford to stock the first selection of programming if it only gets 50 customers to rent them?"

The point is well taken. Consultant Wes Vivian agrees that initially low viewership spread over a wide area could keep sleek HDTV signals jammed up worse than a Corvette on an LA freeway at rush hour. Despite the good intentions of cable programmers and broadcast networks, it's not clear that local cable systems or broadcast affiliates will bother to deliver an available HDTV feed until their audience grows. "HBO, for example, may start its HDTV feed right away, and they may do it very deliberately to get the process going," says Vivian. "But a whole lot of cable systems are going to say, 'You mean you want me to put all this crap in just for 220 users in my territory?' ."

So, DBS may grow with the advent of HDTV, but no one expects it to become the primary delivery mode in any but the deep rural areas where satellite is already strong today. There are still sparsely populated mountain and farm regions where cable won't go and a broadcast signal looks like the fog rolling in; DBS will be perfect for those spots. But most observers believe the densely populated regions will continue to rely on cable, or terrestrial broadcast, or even telco fiber for HDTV signals.

THE TELEPHONE companies are becoming a critical piece in the HDTV puzzle. I went to the conference expecting an update on telco efforts to break down legislative barriers to video delivery and to hear some debate, but I was disappointed. The telco presentation, made by Robert Osborne of BellSouth, was a slide show detailing a fiber optic HDTV installation his firm had done at Kennedy Space Center in conjunction with NASA. The photos were set to what sounded like the soundtrack from the film *2001: A Space Odys-*

*sey*. Osborne proved that the telcos have the HDTV and fiber technology to pull this project off, but the audience already knew that. After staring at an endless stream of 35mm slides depicting the space shuttle and racks of video equipment, I had that creeping sensation you get when you've been bamboozled into watching your next door neighbor's version of What I Did On My Summer Vacation.

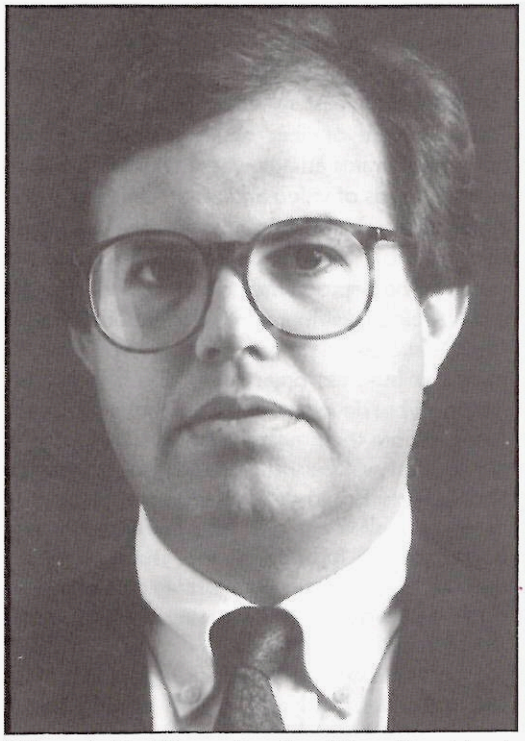
As it turned out, an event that took place just three weeks later would unlock the telco mystery. It was a speech made by John D. Abel, executive vice president of the powerful National Association of Broadcasters (NAB). On June 20, 1989, a day that will live on in broadcasting infamy, Abel stood before the NAB Joint Board of Directors and delivered what I have come to call broadcasting's "Telco Manifesto." After an initial NAB study of the potential effects of telco entry into video delivery, Abel briefed the board on the possible scenarios and made specific policy recommendations. On that day, the broadcasters looked deeply into the future and discovered, no doubt to their horror, that it did not belong to them.

At least not in their present skin. I have a transcript of Abel's speech. It is a lengthy document, running 18 single-spaced pages, and covering a multitude of angles and issues. The subject is immensely complex, but several key points emerge.

Abel began by telling his peers that it seems likely the telcos will be granted *some* rights to deliver video and other "information services" using fiber optic technology. The Justice Department, the FCC, and the National Telecommunications and Information Agency of the Commerce Department are all recommending lifting the ban that was established to protect the cable industry with the break-up of AT&T in 1984.

There are several motivations, he explained. One is international competitiveness, and fear that the US will become a second-class communications society unless it gets on with installing fiber in the home. Another is the fear that the deregulated cable industry is now gathering too much control over programming and distribution, and that introducing competitors is the easiest way to keep them in check.

Finally, he told the board, direct fiber to the home is expected to yield tremendous benefits for consumers—especially in the "switched" network configuration that the telcos would provide. Such a network, he said, would "theoretically permit a nearly infinite number of new services . . . including video-on-demand, home banking, video catalogue shopping, security and energy maintenance, full motion interactive video among phone users, high definition television, access to all kinds of film libraries, syndicated programs, and historical video



**Edward D. Horowitz Sr. Vice President, Viacom International, Inc.**

segments that might be preserved in libraries." He added that, "Even if cable installs fiber lines, the technology of a cable network is far inferior to that of a switched network provided by telephone companies for these advanced applications."

As a result of all the above, there's a movement afoot in Congress to wrench control of the 1984 Modified Final Judgment from District Court Judge Harold Greene and grant it, through legislation, to the FCC—an agency regarded as more expert on these matters than the Judge. Greene presided over the breakup of AT&T, and authored the MFJ as its blueprint. He is the only one who can change it, but he has resisted and his lock appears to be the last remaining barrier to the telcos.

Either way, more than one million miles of telco fiber trunk lines have already been laid in the US, and BellSouth, at least, intends to begin wiring new homes with fiber by 1992. "Fiber optic cable is going to go into American households no matter what," Abel said.

As his presentation wore on, Abel brought up "fragmentation," the TV vernacular used to describe the process by which television audiences seek programming specific to their interests or moods. Cable TV is based on the concept of having more channels available, and therefore the ability to devote an entire channel to non-stop sports, weather, news, movies, etc. To maintain its current share of audience, Abel explained, broadcast programming must begin to address the move toward

fragmentation. This in turn will call for broadcasters to develop and deliver additional channels—an impossibility with the limited spectrum of today's terrestrial broadcast system.

The advent of fiber optic switched networks, however, heralds an age where "literally hundreds and hundreds of video and audio channels will be available for local distribution." The underlying theme is that any boob with a camcorder who wants to be a programmer and can pay the rate will be able to distribute on the telephone network. But the *successful* programmers will be those who have the business organization (both locally and nationally) to develop quality programs of all varieties, promote them aggressively, and sell advertising in what will be a highly charged, competitive atmosphere. Broadcasters have been playing this game for half a century, and are correctly positioned for the future. "Now is the time to start thinking about this in your strategic planning sessions, especially if you plan to stay in this business," Abel warned his comrades.

Abel admitted that this refocusing of the business will be driven, in part, by the waning role of terrestrial broadcasting as a distribution system. "Today broadcasting is both distribution and programming, but we will probably lose the uniqueness of our distribution system," he predicted. "The uniqueness . . . of your transmitter and tower will probably nearly disappear . . . Other, more efficient and higher quality distribution systems will be the means of providing video signals."

Under these circumstances, he explained, broadcasters and their viewers stand to gain by telco entry into fiber video delivery. "If telcos have a competing wire into the home (competing with cable) it can only be better for us, because we can program additional channels, which we can't really do on cable systems, and we can have two additional methods [besides terrestrial broadcast] for getting into the home (the telco network and the cable network)."

Finally Abel ended by laying forth a series of conceptual guidelines for how broadcasters should deal with telco entry issues. As taken directly from the transcript, these include:

(1) Do not oppose (but don't necessarily lobby for) movement of the MFJ from Judge Greene to the FCC. We need to develop a very specific set of appropriate limitations, restrictions, and with proper oversight by Congress.

[Abel makes clear in his speech that the FCC is not to be entirely trusted to look after the broadcaster's best interest on this matter, and a Congressional check system would be appropriate.]

(2) The telcos should be permitted to serve as the conduit for advanced information and program service areas, but only in situations where they are overbuilding an existing cable system. The idea is to be pro-competitive with cable.

[In other words, the broadcasters would prefer that telcos only be allowed to deliver video where cable is already doing so. A monopoly by cable *or* the telcos in any given region is still a monopoly, and any monopoly on distribution could potentially leave broadcast programmers in the lurch.]

(3) The telcos should not be permitted to have any [program] content ownership interests, but we need to define what we mean by this.

[There are several complex issues surrounding telco program ownership, Abel said, up to and including the editorial control the telcos might have over video menus and directories—but clearly they would be least dangerous serving strictly as a conduit to the home.]

The bottom line to all of this is that broadcasters have awakened to the fact that they *need* a telco fiber delivery system. They need extra channel capacity to serve an increasingly fragmented audience, and they're not likely to get them from the cable systems. Further, and most important, today's broadcasters must have at least *two* possible conduits into the home in each locale to guarantee their survival in an age when they can no longer deliver their signal via transmitter. Don't put all your eggs in one basket, mother always said, and once in a while she was right.

The very first page of my notes from the Delivery Media panel includes this one, jotted a few moments after Greg DePriest took the podium: "Seems very defensive about fiber—he's suggesting it won't be viable in the time frame . . . ." His references to fiber surprised me; I had somehow expected broadcast's attack to focus on the cable industry. But I soon came to understand that much of the industry sees fiber optic delivery of HDTV as an eventuality. Even without the extra services described by Joe Abel, fiber's remarkable bandwidth capabilities make it the perfect medium for HDTV.

Still, as DePriest points out, when HDTV hits the market in the mid-1990s, fiber will be in only a handful of homes. Even the best estimates say fiber will be in less than 20 percent of all US homes by the year 2000, and place a full fiber roll-out at several decades and a cost of hundreds of billions of dollars. "If you go far enough out, certainly fiber to the home is a reality," DePriest told me during a phone interview after the conference. "But it's the transition you have to get through . . . and we're searching now to see if we can't find some way to provide this service over the air to carry the benefits of the current broadcast system into the future."

Those benefits, according to DePriest and Hal Protter, are several. The first is extremely wide penetration. A broadcast signal can presently be

received in 98 percent of American homes. Plug in your set, fidget with the rabbit ears, and go. By contrast, 90 percent of all households have access to cable systems, and 55 percent of all households subscribe.[5] In other words, if you eliminated terrestrial broadcasting today, the best the US could hope for is a 10-percent loss in television viewership. Factor out the people who can't or choose not to pay for cable service, and you've just disenfranchised nearly half of the television audience.

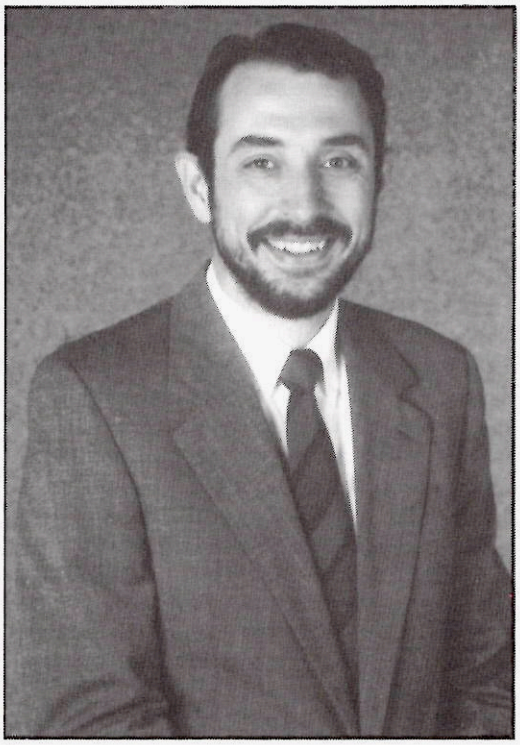
That's an interesting thought. According to Neil Postman, communications theorist at NYU and author of the aforementioned *Amusing Ourselves to Death*, 90 million Americans watch TV each night. What would happen if 40 million people suddenly regained the hours the average American family now uses for watching TV? Would they read books and magazines? Debate among themselves about politics or science? Probably not. More likely, they would stay home and watch Bill Cosby reruns on the VCR, the only thing still connected to their set. Those who didn't would join the wild mobs of news and sports junkies found in every local pub, climbing all over each other just to catch a glimpse of Dan Rather or *Monday Night Football*. . . but I'm getting away from myself.

The point here is that the cable systems, despite a 6.5 percent annual growth rate since 1986, aren't far enough along to simply eliminate terrestrial broadcasting from the coming age of HDTV. Too many people would be lost in the reshuffle, which is very bad for business when you get paid by advertisers based on viewership.

The concept of Free TV presents another problem. In theory at least, it seems good for democracy to keep television a free thing, not to mention the fact that today, at least, it's a boon to the broadcast programmer's Neilsen ratings. But if broadcasting didn't exist, how could this be preserved? It costs money to run a copper coaxial cable into a home, and far more to run a fiber optic line. Cable systems are not in the business to lose money by running a basic service to everyone's home in the name of mass communication, nor is it likely the telcos will be anxious to provide free TV, at least not at first.

The last argument made by the broadcasters is that of "localism." The current TV signal has limited reach without the use of a "repeater," the word often used to describe a network affiliate when it passes along the network's signal. But the affiliate, along with independent stations, also serves its market directly with the very real benefits of local programming and advertising.

[5] *Source: National Cable Television Association.*



**Greg DePriest Vice President, Association of Maximum Service Telecasters.**

In 1989, these are all sticky points. It seems clear that with only 55 percent penetration of cable, any plans for HDTV made today must include terrestrial broadcasting. It also appears that Free TV, while a nice idea, won't hold water in an age of cable and telco fiber delivery until the cost of linking everyone up has been long amortized. Unless, of course, the government steps in and somehow forces the issue.

And localism? Localism could, and will, be provided by cable or telco delivery. But for the reasons mentioned above, neither of these are fully viable today. Satellite delivery, which would provide universal reach, is inefficient for local programming, even if everyone in the country went out tomorrow and bought a receiver and dish. Why bounce a cross-country signal off an expensive bird just to reach the people across town with community news?

So that's the current situation. Cable is dominant and growing at a fairly steady pace, but not yet deeply pervasive. Satellite delivery is a good idea but can't really provide local programming cost-effectively. The telcos hold the key to the whole thing in their switched fiber networks, but they're a generation away from its implementation. The HDTV VCR and disc player will be viable, but they're strictly for non-realtime programming. And the broadcasters? The broadcasters—with their anemic, spectrum deficient environment—are the only ones who can reach everyone, and they still

provide more than three-quarters of all the programming watched by anyone, whether the signal comes via cable, satellite, or terrestrial transmitter.

Against this backdrop, several scenarios have unfurled for the initial roll-out of HDTV. More than a year ago, NHK, the Japanese national broadcasting company which first developed HDTV, announced that consumer HDTV equipment would be available in the US within three years. It was suggested that shortly after HDTV satellite delivery began in Japan, HDTV receivers and matching VCRs or disc players would begin washing up here like contaminated medical waste on a New Jersey beachfront, infecting the whole country with HDTV fever. Never mind that the sets wouldn't receive any terrestrial broadcast signal. There'd be that VCR, and the satellite networks and cable interests would probably jump on their extended spectrum capabilities and offer HDTV in the blink of an eye—just for the sport of throttling terrestrial broadcast and accelerating the slope of their growth curves. Yes indeed. "HBO's Preemptive Strike."

WELL, THAT'S PRETTY HEAVY stuff, but until this year, calm thinking was not the pervasive mode in HDTV circles. It really wasn't until the FCC's Tentative Decision in September 1988 that things began settling down. The landmark decision insisted that any new HDTV system for terrestrial broadcasting must accommodate existing NTSC sets. It also set guidelines for the use of spectrum, suggesting that the most broadcasters could hope for was to use one extra channel per station to deliver both HDTV and NTSC. This, coupled with the establishment of the FCC Advisory Committee on Advanced Television, signaled all parties that the US government would be the master of its own destiny on HDTV, and that a plan was now in the works to develop and implement a system of our own choosing.

This seemed to scrub any possibility of mass acceptance of Japanese receivers or monitors in advance of an established HDTV broadcast standard. Except for a few High End videophiles, no one in his right mind would chance buying an expensive monitor/VCR combo with no real assurance that it could eventually display or record ABC, NBC, and CBS.

In addition, it has become clear that even reasonably affordable consumer HDTV equipment anytime in the next few years is pretty much a midsummer night's dream. Last February, a delegation of broadcast representatives visited Japan for an HDTV factfinding mission, at the invitation of NHK. Greg DePriest and Hal Protter were among the delegates, as were scientists with the Advanced Television Test Center and representatives of the major networks. NAB vice president of science and technology, Michael Rau, indicated in his follow-up report that receiver manufacture is not quite as far along as we in the States might have been led to believe. Toshiba told the delegation that receivers containing MUSE decoders should appear on the Japanese consumer market in late 1990. But even at this late stage, there seems to be considerable disagreement among manufacturers over how much the sets will cost.

"At some point in the next year, the costs of the MUSE receiver will be determined, and perhaps an initial selling price," Rau said, adding, "This price appears to be controversial in Japan. We were presented with manufacturing cost estimates ranging from $4000 to $24,000." He further noted, however, that "the retail price may not bear any relation to the costs of manufacture."

Yes, that's $24,000. Some observers have said that the Japanese might eat a loss on the first-generation receivers and set prices in the $3000 to $4000 range—just to launch the product. But after his visit to Japan, Hal Protter suggests the cost of production for that television will easily be in the five figures. Right now, he says, the display is an immense part of that cost, and unless there's a breakthrough in flat screens or some other technology, this will probably remain so. The integrated circuit, or "chip" count in these televisions is also quite high—up to a hundred per set in some cases—and this must also be reduced before HDTV becomes affordable. "Yeah, the good news is that we've built the perfect TV," he joked. "The bad news is that it costs more than a luxury car."

Then there's the question of whether retailers would attempt to sell HDTV monitors and VCRs in the US in advance of a broadcast standard. As DePriest observes, even after a standard is chosen and receivers are equipped to receive it, HDTV programming will be scarce at first, and the initial sets will be too expensive for the mass market. Consumer electronics retailers will be hard pressed to demonstrate these systems on the floor without seriously cramping sales of High End, big screen NTSC TVs—the only sets they currently make a decent profit on. "That's the fear of the consumer electronics industry," says DePriest. "They can't figure out how to introduce this thing without shooting themselves in the foot."

So it appears that the broadcasters now have time—the most precious commodity in business—to tinker around and come up with an HDTV system. The Japanese seem to be on hold with consumer equipment for the US, which nixes any kind of "preemptive strike" by cable, satellite, or any other medium. The sets still cost too much for

anyone to take them seriously, and few would be likely to sell them anyway. Even without these influences, the current climate in Washington has created international trade pressures that would probably keep the Japanese in check. After attempting to establish their HiVision and MUSE systems as worldwide standards, they quickly discovered that the Europeans and Americans had other intentions. Their best bet now, says DePriest, is to let the American process run its course, then produce the necessary equipment. "Japan Inc. has suffered some serious blows in its goal to introduce high definition to the world," he observes. "The world didn't swallow."

Back at the conference, I was naturally anxious to hear what Stormin' Eddie would have to say. He followed Greg DePriest, who used the opportunity to reinforce broadcast's strong interest in participating in HDTV, and to suggest that an extra channel per station could indeed be found to deliver high quality HDTV. He also repeated his assertion that broadcasting must be first with delivery if HDTV is to succeed, "because they provide access to 98 percent of the market while other media provide significantly less."

Then Horowitz came on. His tone was even-handed, not at all antagonistic, and he discussed HDTV as a slow, evolutionary, not revolutionary change. HDTV was definitely coming, he said, and cable would be there along with everybody else. He told the assembled crowd that he envisioned a system where various delivery media would operate under *different* signal formats, using a single HDTV display that accepted them all—much the way the Barco HDTV projector being used in the conference hall could accept signals of varying scan line counts and frame rates. In his work on the design of interface standards with the FCC Advisory Board, he told the audience, "We've come up with the consensus that says it's possible to interconnect [various media] in the lowest common denominator, which is baseband video." Cable is already delivering multiple video standards to customers, he pointed out, in the form of scrambled and unscrambled NTSC signals. His message seemed to be that regardless of what broadcast or anyone else developed, cable would reserve its right to use whatever signal worked best for it.

He also directly addressed the question of competitive media's delivering HDTV. "The cable industry's objective is to coexist . . . " he said. "To coexist with the broadcast community, and at the same time make sure it's capable of competing with the alternate media that might deliver a much higher quality picture, whether it's VCR or satellite.

"No one is trying to put anyone out of business . . . " he went on. "All we're trying to do is gain appropriate market share, which any competitive system tries to do."

After his presentation, the panel broke for coffee, and I approached Horowitz, who was still chatting near the podium. I began by introducing myself and congratulating him on his new post at Viacom. I showed him a copy of Issue 4 of *The Perfect Vision*, explaining its High End videophile audience. Then I told him a concern of mine.

I had been following this story for the last six months and I was worried, I said, that the people on the panel were saying virtually the same things I had heard at a similar seminar back in January at the Consumer Electronics Show. Broadcasting seemed no closer to establishing a standard, and I was beginning to lose hope that any kind of coalition could be formed among the various media to roll this thing out in a civilized and timely fashion.

In days prior, I had been thinking about the immensely successful launch of the compact disc, in which the hardware and software manufacturers banded together to bring the new format to market in a unified show of force. The FCC Advisory Committee and other groups like the Advanced Television Systems Committee (ATSC) represented all the parties in the HDTV game. Surely, I thought, they were working together to bring HDTV to American homes in some unified manner.

But when I mentioned the word "coalition," Horowitz's response was quick and emphatic. "There *isn't* going to be any coalition," he told me. "There's going to be a threat. There's going to be that HDTV in the living room of your readers with a VCR."

As I followed him out to the lobby, he explained that marketplace pressures, not a planned launch, would ultimately drive HDTV into the home. When HDTV/VCR combinations became available and affordable to High End videophiles, it would then become cable's role to respond to that threat with an HDTV service that at least matched that quality. This could be easily implemented, he explained, simply by putting HDTV programming on the cable system using a signal of their own or someone else's design, then changing the converter box that already exists in the user's home to have it decode that signal. A premium could be charged to the viewer, much the way an additional premium is charged today for the pay-TV channels.

AND BY NOW it should be clear why a reporter would rather crawl into a sinkhole than face this mind-bending story. The variables are so endless that it's almost impossible to discuss the subject coherently, much less try to predict with any certainty what will happen.

In the final analysis, though, the public discussions about HDTV delivery media have made at least two things quite clear. The first is that the broadcasters are currently holding all the aces, due to their wide penetration and their control of a broad base of highly desirable programming. As such, everyone else is now forced to wait while they get their act together and choose an HDTV signal format.

But the forum has also made it painfully obvious that terrestrial broadcasting is on its way out—for reasons that have nothing at all to do with HDTV. The steady growth of cable is a function of the wider programming options it provides, and it's not likely this growth will stop. HDTV or not, it seems only a matter of time before broadcasters are left with nothing to do but switch off the transmitters and function as commercial programmers—no better or worse than HBO or ESPN when it comes time to negotiate for the Olympics or Super Bowl rights.

There will be a lot of weeping in the halls at 524 West 57th Street when this happens, for no one deals well with being just another player after a half-century as King of the Hill. But it will happen, sooner or later. Even the broadcasters now seem cognizant of their fate. John Abel's Telco Manifesto is akin to the industry's writing its will: "As the father of television, we the Broadcasters hereby bequeath all our worldly viewers to Cable and Telco, the two squabbling siblings, thus ensuring that even in death, we will maintain control of our estate . . . "

Terrestrial broadcasting made a lot of sense in 1939. But in an age when most households can be hardwired to the studio or a satellite downlink, it is simply a redundant and piggish use of valuable radio spectrum—not to mention less than ideal for the bandwidth-rich environment the next wave of TV will demand. As a result, TV broadcasting is doomed. And like the body of an old warrior, it is about to be put out to sea in the SS Terrestrial HDTV: a patched rubber dinghy that will drift into a diminishing horizon for a decade or two, only to sink in a Darwinian whirlpool of new technol-

ogy, according to modern law for survival of the fittest.

WELL, THEN—There is one little question I'd like to take a shot at before I wind this thing down.

And that question is *why*? Why is this happening, anyway? Why is HDTV being driven into the marketplace when the average consumer has never seen it or asked for it? All this energy, all this money, all this discussion. Why here? Why now?

It is a rhetorical question, and the best I can deliver after winding my way through the HDTV maze is a rhetorical answer, and a cliché at that: Because it's there. Ed Horowitz scratched the surface of it when he told the conference attendees that HDTV will happen, "basically because the consumer electronics manufacturers are running out of bells and whistles to sell, and they've gotta change the rules." And the way you change the rules, he went on, is to establish new levels of resolution, or a new aspect ratio, or a flat screen as the new standard—anything, in fact, just so long as Average Joe will look at it and say, "Yes, Martha, we must throw out that old clunker and have this one—today."

That is the simplistic explanation, and it makes sense. It is easy to blame the whole thing on some Japanese engineers who got together after work 14 years ago to chat about the next age of television, then ran amuck on too much saké. It's easy to say that everyone simply followed suit after that—the Europeans saw it coming and responded, and then the Americans finally woke up. Then along the way, you could say, the HDTV gravy train picked up a few passengers who recognized that they would stand to win or lose when the new technology rolled into town, and that now was the time to buy property near the station, or try to get the tracks laid on their plot.

But there's something else at work here, something that's been completely ignored in the popular press and probably holds more weight than profit motive, political need, or patriotism. It is the heart of the HDTV machine, and it is found in the heart of those who now stand before it and attempt to push its buttons.

Only someone who's worked in television could appreciate the sense of honor that goes with the job. The "energy" I described that buzzes the air in the CBS Broadcast Center is not hyperbole: It is real, easily felt if you choose to tune into it, and largely ignored by those in the business of TV.

This blind ignorance is a prerequisite for success in that environment. I used to sit in a control room for the Morning News with my hand on a fader bar that shifted on-air between still graphics. If I sneezed, 3-1/2 million people saw it. And when I punched up the wrong graphic, as I often did, the same 3-1/2 million people got a map of the troubled Persian Gulf—complete with bomb blasts—just when they were expecting a bumper for Dr. Bob Arnot's next health spot. I'm sure I jangled a few nerves in my day, but I could never forget the link between my hand and all those TVs, and I never reconciled the awesome responsibility of putting electronic pictures into that many homes. Finally, I just quit my tech job and got sucked into journalism—where a dollar is harder and an itchy trigger finger only slightly more dangerous.

But it was a hell of a power trip while it lasted, and no one who's been there could possibly deny how *important* it made him or her feel. It's probably safe to say that anyone with even the slightest hint of social responsibility desires, deep down, to leave a mark—to do something good for the world. Most people go off to a job everyday that will have little or no effect on society-at-large, with few hopes or expectations beyond bringing home the rent. But people who work in TV feel that special satisfaction *every day*, whether they're hip to it or not.

By the same token, the people engaged today in discussions about high definition television know they are reshaping the most powerful communications medium that has ever existed, and that the decisions—and mistakes—they make today will affect virtually everyone in the modern world. Twenty years from now, the monument to their work will be found in 90 million American living rooms—right there, where you can point to it. For good or ill, that's a powerful drive, and those of us on the sidelines can only say: Good luck. After all, *somebody* has to do it.

But not me. I live in a large open loft, and lately I've been stuffing it with books like some Cold War paranoid loading his shelter for Armageddon. There are already several hundred texts in here, overflowing the shelves and in stacks along the floor. It's a good base to build on, beginning with prehistoric works like Virgil's *Aeneid* and the Bible, moving up through Donald Trump's autobiography in the marvelously appropriate cheap paperback version.

As I see it, there's still plenty of room, and more than enough time to have the place filled by 1999—just when HDTV should start looking like something ominous. At that time, I'll be ready to open the doors to anyone with the vision of a better future and the guts to step inside. Right now I'm thinking about free admission. But who knows? If I'm right about HDTV, I could find myself sitting on a goldmine—and hitching a ride on the new gravy train . . . □