

TELEVISION: 20 Years From Now

By FOREST H. BELT / Contributing Editor

Two decades can change a world. At the doorway to the 1990's what will U.S. television be like? Will TV still be free? Will telecasting be over the air or on cable? What about programming and TV servicing in the future? Here are some of the answers from leaders in the industry.

TODAY, at the threshold of the 1970's, a giant specter of change looms over the television-broadcasting industry in this country. Its nature and extent seem sure to penetrate every corner of our living—even into situations barely touched by TV today. As the next 20 years unroll, some changes will be startling, some exciting, others perplexing; a lot of them will provoke resistance and conflict in one quarter or another.

The overwhelming question right now, in 1970, is: *Will national telecasting in 1990 be over the air or through cables?* A controversy has been building up around that question for nearly 10 years.

Cable television (formerly called *community antenna television* or CATV) has grown phenomenally in that time. Some watched it, some ignored it; some hid their heads in the sand and hoped it wasn't real, some fought it, some joined it, some hampered it; but certainly nothing stopped it. And now the question is, how far can it go?

The story of CATV is marked by controversy. In the 1950's, systems were quietly installed in mountain communities where normal TV reception was poor or impossible. They offered a unique community service.

Then around 1960 someone realized not all towns getting community antennas were isolated. A closer look revealed why: there's a chunk of money to be made in CATV. People will pay to receive more stations and stronger signals than a rooftop antenna can provide.

Antenna manufacturers set out to stop the cable systems from setting up in towns where some TV could be received. They wasted most of their efforts. CATV went wherever it wanted to.

The dollars attracted large companies. Early CATV systems were "mom and pop" operations. But wheeling and dealing soon spawned the CATV conglomerates that are still growing today.

AUTHOR'S NOTE: People in all sorts of vocations and avocations, in and out of the TV field, show concern for the future of TV. The more articulate of them willingly shared their views of the next 20 years. Naturally, they didn't always agree.

Several, particularly in high circles within the industry, carefully avoided meaningful commitment. Some we talked with obviously prefer the status quo; others like change, but merely for its own sake. Some didn't seem willing or able to face unwanted possibilities. Discussions with a few seemed hindered by "keep it for

ourselves" secrecy. One slogan we heard paraphrased fairly often was "let the market (in this case, the viewing public) decide," as if dollars alone are arbiters of what is good or bad.

Futurology leans heavily on present and past. You examine existing technology and trends, compare them with history, and then extrapolate your own assessment of what's to come. That's how this analysis of 20-years-hence was prepared. The conclusions are my own, seasoned by opinion from the editors of this publication and from the field's top thinkers and doers.

More opposition sprang up. Broadcasters, suddenly fearful for their own future status, raised a ruckus. They went all the way to Washington and the Government got into the melee. Eventually, not long ago, the Federal Communications Commission asserted its right to regulate cable-TV systems like it does broadcasting.

At broadcaster instigation, copyright owners decided they would try to collect royalties from cable operators. They failed.

Cable-TV has been held back only vaguely in any direction. Much heat today centers around what opponents call broken promises by cable owners. Here are some examples:

Before 1960, CATV people insisted their only purpose was to serve communities that were without TV service. Their purpose has since been amended; they serve communities that don't have *adequate* TV service. The term "adequate" gets loose interpretation. New York and Los

“The wired country is a strong possibility. Once it's really started, broadcasters themselves will switch, or else become suppliers of mass-appeal entertainment. The cable owners themselves for years had no idea of the extent to which the public was going to accept—even demand—the many services that have developed in CATV.”

Frederick W. Ford/President,
National Cable Television Association

Angeles, both with plenty of local stations, are getting cable systems "because of reception problems." The most-quoted excuse today for cable expansion is "demand of the market."

In 1964, cable spokesmen insisted they had no intention of originating programs. They would only rebroadcast signals. Within the year some cable systems were carrying weather reports and news, and later, movies. Thirty percent of all cable systems now have their own programs. Proposed FCC rules will *require* them to include original programming.

One justification of the monthly cable charge was that it frees programming from the constraints of commercials. But there have been commercials on cable systems for years now; and there's every assurance they'll be a part of all cable programming.

It's no wonder, then, that very few expect any other "taboos" to hold. Outsiders worry about: Extra charges (pay-TV) for special-interest movies or sports events. New-set sales by cable companies. Set-servicing charges added right into the monthly cable charge. Set leasing with captive servicing. Nothing has barred cable operators from other activities they decided on; there's no reason to believe they won't get into these too, whenever they're ready.

Why not? The income potential is there. Cable is a ready medium for promoting whatever package an imaginative entrepreneur dreams up. And cable men are imaginative.

The conclusion seems inescapable. Television in 1990, barring drastic unforeseen and powerful blocks to cable systems, will be wired and nationwide.

An official of the National Cable Television Association (NCTA) predicts 90% of U.S. television homes will be wired for cable within 10 years, let alone 20 years. Even allowing for optimism of industry politics, that estimate seems exaggerated.

But accurate or not, this prediction reflects the intention of the cable-TV industry. What's more, enthusiasm and power are not the only reasons a TV-wired nation is likely. Other powerful forces are influencing a shift from air TV to wire TV.

One is a clamor after more spectrum for public-safety radio services, and for radios in land, sea, and air vehicles. Needs multiply faster than technical improvements. One so-

lution is to put TV on r.f. cables, freeing the television spectrum for operations that can't be tied down to a wire.

There's another good reason wire TV looks like the way



An advanced antenna system for direct broadcast of TV programs from an orbiting satellite to home receivers is being designed today for NASA by Sylvania. By concentrating programming to small areas of the earth and transmitting about 100 times the power of present satellites, the antenna system will provide signals strong enough for reception by modified home equipment. A two-foot diameter antenna and small converter, like the early u.h.f. TV converters, will be required.

to go. A cable system, even a large contiguous one, is easily divided into small local segments. This offers a medium for community self-expression that may be paramount to the social and cultural ferment in our cities and suburbs. Multiple channels give a cable operator flexibility for minority interests without every program having to "pay." Air TV, as it exists, can't pinpoint multiple audiences like that, either technically or economically.

We hear those who contend an all-wire system is out of the question. They offer various reasons.

One fellow says, "The broadcasters won't let it happen. They're too powerful."

Don't kid yourself. Antenna makers and broadcasters both tried. Neither was more than an annoyance to cable progress. Several broadcasters (and at least two antenna firms) gave up trying to lick the cable operators and quietly joined them. Half of all cable systems now are owned partly by broadcasters; 30% are *controlled* by companies that also own broadcast stations. Why would broadcasters scuttle cable-TV at this stage?

"Several Congressmen own broadcast properties. They won't let cable take over."

Wishful thinking. You can't pin down what most Congressmen own. But it's an even gamble that just as many own cable systems as own broadcast stations.

“I'm skeptical about direct satellite broadcasting, because of cost. It might be a way to serve rural areas through ground stations. The key (would be) to accommodate satellites to local broadcasting.”

Robert E. Lee/Commissioner,
Federal Communications Commission



"The networks. . ."

Forget it. Networks supply programs for distribution to the viewing public. Whether by air TV or cable, outlets won't affect their profit sheets. There are indications that cable may *enhance* profits. *Columbia Broadcasting System* already has bought a couple dozen cable systems in the U.S. and Canada; they're shrewdly hedging their bets.

"The Federal Communications Commission. . ."

Yes, the FCC has put some brakes on cable recently. But the FCC is highly vulnerable to the vagaries of politics. Its attitude today doesn't mean much four years from now—nor twenty.

Actually, the most valid FCC concern is over "concentration of media control." If a market has nine TV stations, they're owned and controlled by nine different companies. But a cable system, even with 20 channels, is in the hands of one company. A market as large as New York City has been divided up so at least four cable companies are involved. But smaller markets won't be. Here's a legitimate danger to deal with. A cable system under biased control would be a powerful propaganda machine.

One answer to this is a common-carrier concept. The cable operator is permitted only one channel for his own use. Whatever other channels are not carrying "network" or educational telecasts must be leased to non-owner cablecasters for their own programs. A whole channel could be leased, or merely time on a channel.

From what we can make out, only the public has any

“The leasing idea isn't impossible. It is already done with hotels, motels, and hospitals. There will definitely be changes in the means of getting instruments into the hands of the consumer, but I don't think they'll be that drastic.”

**B.S. Durant/former Chairman,
RCA Sales Corp.**

power to stop cable-TV. If viewers refuse to pay, no cable-TV.

But don't count too heavily on that happening. As limited as cable-TV offerings are today by comparison with what's in store, subscribers seem surprisingly ready to accept it. It's common for 40 to 50 percent of the TV homes in a wired community to sign up right away for installations. Viewers even go out and buy new TV sets—especially color—to take advantage of the numerous and (ostensibly) better signals.

We can't agree with the doubters. Good or bad, right or wrong, the television wave of the future looks like cable.

What happens 20 years from now depends a lot on political and economic factors. Predicting technical changes is easy by comparison.

The population of the U.S. by 1990 will have grown to about 300 million. Barring economic or political disaster,

the gross national product should have reached \$2 trillion. More than half the families in the country will be earning nearly \$20,000 a year (based on today's dollars). Everyone will have more leisure time, and there'll be more cultural and educational interests than there are today.

The wire-TV system will be a nationwide grid of coaxial cables, made up of regional systems. A cable will be able to carry 50 channels or so of TV. A few giant companies will own the big regionals; but there'll be a few hundred independent operators, mostly with small semi-rural systems that aren't economical for the biggies. These little systems will tie into the big ones for many of their programs.

Who will these giants be? Among the networks, *CBS* is already a cable company. Top cable operators are growing

“Discussing the future of broadcasting is a somewhat sensitive undertaking. Any projections would be inappropriate.”

**Vincent T. Wasilewski/President,
National Association of Broadcasters**

fast even now, merging small companies and starting new ones. Phone companies like the looks of cable too; *Continental Telephone* in St. Louis and *United Utilities* in Kansas City (Mo.) each own cable systems with nearly 50,000 subscribers. Publishers, looking for new ways to beat printing costs, are eyeing cable to distribute news, pictures, and other information; *Time, Inc.* has \$15 million invested in cable operations so far.

Watch for cable giants to evolve on the order of communications monopolies like *American Telephone and Telegraph, et al.* When that happens, you can look for even more serious effects than those we'll be telling you about later.

Regional or local systems will probably carry no more than 25 channels of television.

There'll be at least six national entertainment networks. Their programs may be fed to regional systems by s.h.f. satellites or by network cables. They'll offer a large variety of entertainment. What's carried at different times of the

THE TV SERVICE TECHNICIAN OF THE FUTURE

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day will be determined by audience research, much as it is today. The six entertainment channels will still carry commercials.

There will be a national and international news channel, maybe fed alternately by two or three news services. This channel will operate 24 hours a day. A separate news chan-

“I feel it would not be appropriate to discuss (CATV, pay-TV, and domestic satellite services for broadcasters) for publication, at this time.”

**Leonard H. Goldenson/President,
American Broadcasting Companies, Inc.**

nel will be reserved for local interest—much like a town newspaper. The local news channel will also carry time, weather, and special bulletins, but no commercials.

At least six channels will be reserved for education. Four of them will be regularly programmed by a national education network. One may handle adult self-improvement, and another, professional studies. Or the six may carry school curricula by day and adult courses by night. Whether at home or in “resource” rooms at school, children will get a significant part of their instruction over these education channels.

Five channels will carry cultural cablecasts. Local schools, drama groups, churches, civic clubs, and libraries will use two of these, probably at no cost. Two will carry cultural telecasts generated by national groups like the Corporation for Public Broadcasting, the Metropolitan Opera, the Museum of Modern Art, and similar groups. One will be for cultural telecasts from overseas *via* satellite.

One channel will be for political activity and debate—with time divided up among national, state, local, or minority politics, or any far-out political philosophy. The years of political spoon-feeding we live in now will have created a strong desire to have all sides of major issues aired, no matter who holds a view or how little others may agree with it.

Of the remaining five channels, one will be for the cable company to program as it wishes, with commercials if it pleases; probably, fare on this channel will be largely local entertainment.

The other four will be leased to cablecasters who don't own systems; this is the common-carrier concept mentioned earlier. Users of these channels may offer entertainment, education, or whatever, with or without commercials. They

may even be used for pay-TV; a subscriber will pay a fee to the pay-TV operator for a descrambler to watch special programs.

Obviously, this has been an exercise in educated guesswork. Additional ways to use channels will develop, too. But you can surely begin to see why wire-TV is so likely to be the system by then.

About 80% of the U.S. population will live in the “top 100” television markets. That's where the concentration of cable systems will be. Another 10% will live in non-rural places that won't be hard to serve with cable.

But what about rural locales? Wire won't reach them economically. One cable-association executive suggests that Congress will pass an act resembling the Rural Electrification Act. (That's what finally brought electricity to virtually all the nation's rural areas.)

Here's a plausible alternative. By 1989, the two or three s.h.f. satellites will be technically sufficient to reach right into any home that has a suitable antenna and converter. They may already be feeding network TV to cable systems, as well as being used for education purposes. Instead of

“Cable, if left alone, will kill broadcasting as we know it today—especially pay-TV by cable, which is a direct and immediate threat to broadcast TV. But the FCC will prevent total wipeout, leaving at least the small markets for broadcasting.”

**Isaac S. Blonder/Chairman of the Board,
Blonder-Tongue Laboratories, Inc.**

buying cable service, rural viewers could spend their money on s.h.f. receiving gear. Even such curtailed service would be more than is available to them today.

One of the first casualties of tomorrow's television system may be today's way of distributing, merchandising, and maintaining television receivers. You can expect the giant companies to lease them to subscribers directly, maintenance included.

With today's rampant consumer complaints, the concept will be easy to sell. It won't necessarily be any better, actually, because ordinary people will still build, install, and repair the sets. But there are reasons it *could* be better. And the cable operator has a market that is psychologically ready.

The effect on manufacturers may be for the public good. There'll be fewer, and they'll build a limited number of standard models—some plain, some fancy. With repairs cutting into cable company profits, receiver quality will be top priority. Maintenance aids will be built in. Sets may cost more to build, but direct selling in huge lots will trim distribution and sales markups. Some giants may make their own sets. Consumer cost in the long run will be less—and for more dependable operation.

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A LOCAL 25-CHANNEL TV SYSTEM MAY PROVIDE:

- 6 National entertainment networks, with commercials
- 1 National and international news channel
- 1 Local news, time, and weather channel
- 6 Educational channels, including 4 on national networks
- 2 Local cultural channels
- 2 National cultural channels
- 1 International cultural channel
- 1 Political activity and debate channel
- 1 For use by cable company, for local entertainment
- 4 For lease to cablecasters, for pay-TV or other services

“The electronic box office (pay-TV) can deliver the products of the finest creative talents directly to the home more conveniently and more economically than any other method.”

**Joseph S. Wright/Chairman,
Zenith Radio Corp.**

may be the owner of a small cable operation somewhere.

To the viewer, who pays all the bills in the long run, the system described for 1990 will have countless advantages. Programs will be, if not better, at least more numerous and fit a broader range of tastes. Equipment will be more dependable and service more competent. Cost may well be no higher than it is today—perhaps even less. Rates will be tied to costs by Federal regulation, and there are many chances for substantial economies.

Whenever a writer ventures into electronics futurology, readers sooner or later expect some way-out technical predictions. This sort of thing has already been done over and over. Besides, the set makers like to surprise everyone. But, not to disappoint any readers who are interested, a few 1989 technical secrets can be revealed.

Twenty years is an awkward prediction cycle. TV is barely older than that. Yet, on the accelerating curve that traces electronic progress, 20 years of future bears little relation to 20 years of history. We shouldn't overcompensate, however.

Sets are the first thing most people ask about. They'll be big, and all color. They'll have thin screens, matrix-scanned. Size will be determined by viewing distance rather than by cost. New digital interlacing techniques will improve close-up viewing of large screens, within limits. A favorite size will be 3 by 4 feet.

Four-channel stereo television sound may be optional, to go with oversize screens. Three-dimensional television, though, will still be waiting for fiber-optic cables and laser-beam transmission. A few big local cable systems might offer this kind of service as a novelty, but it won't yet be part of the national wire system.

TV front-ends will have changed. The v.h.f. and u.h.f. TV bands will no longer have any significance. Much lower

frequencies will go better over the cable. Front-ends will be tuned by touch, probably with ten buttons on which you merely punch the numerals of whatever channel you want to watch. Tuning will be instant.

The cable will eventually carry all sorts of other services to and from your home. You've probably read about many of them. Not all of them will be in operation by 1989.

The huge school-age population will have made education top priority among these peripheral services. There won't be enough classroom space; some home instruction will be a necessity. But it won't be the insipid stuff that passes today for much of TV instruction.

Subliminal teaching lends itself handily to TV. Other high-speed programmed systems of teaching fit television formats. Pumping specific facts into a student's head can be

“We must look toward a day in which all usable frequencies will be crowded. When that happens, it would seem best to reserve radio transmission for those uses to which it is particularly adapted, such as communications with ships, airplanes, automobiles, and, in general, people on the move.”

**J.R. Pierce/Director of Research,
Communications Sciences,
Bell Telephone Labs**

done quickly then, leaving more time for teaching students to think and to put knowledge to work. Special technical gear will make these new education concepts work.

Yes, this is what you can expect the television industry to be like in 1990 . . . a mere 20 years from now. Of course, spokesmen in each segment of today's industry will have exceptions to take. But the louder they object, the less likely they are to hear the scratching finger that is writing on the wall. Every month, industry news heralds another step in the direction described. You'll recognize the trends if you watch for them.

Of course, you and the industry today can determine how true or how false these predictions prove. You have about 20 years to work out alternatives. ▲

WHERE CABLE-TV IS TODAY

Congress seems to be sitting on the issue of cable-TV expansion, evidently waiting for some kind of agreement among the various and powerful pressure groups that are involved with major issues. That isn't likely, but at least some compromises are expected before legislative action is undertaken. Major issues are:

Conditions under which cable can go into top-100 markets

Copyright and royalty payments

Pay-TV

Domestic-satellite policy

The Federal Communications Commission has laid down rules for cable-TV in top markets, but is willing to suspend them on application. Witness New York City and Los Angeles, which are getting cable systems. "Final" rulemaking is scheduled for December or early January. Final comments date is November 3rd.

Copyright legislation to affect all copyright law, but to finally include CATV, didn't get far at all in the 1969 session of Congress. It is in the works again for 1970 action,

but the outlook for passage is pessimistic. Maybe a watered-down, partial version will get through, but it is nigh impossible to guess its effect on cable operation. The National Cable Television Association expresses willingness of members to pay reasonable royalties, but Congress has to legislate to whom—and how much.

The FCC has approved over-the-air pay-TV. The approval is momentarily blocked by movie interests, in the courts. Meanwhile, however, subscription-TV principals are going ahead with plans. They are assured that, if the courts knock down the FCC decision, Congress will pass appropriate legislation. Pay-TV, insist its proponents, is inevitable.

At press time, no decision has been announced on domestic-satellite policy. Quite a bit hinges on the Intelsat negotiations now in progress. Educated guesswork says we'll have domestic satellites as we want them. FCC will then clear the way for satellite-to-home experiments. Hardware is already being put together. Besides, technological "fallout" from our space programs promises to cut the cost of lofting and operating communications satellites. And advanced communications capabilities seem to make domestic-TV satellites a foregone conclusion.