

The Future of Television

by Eli M. Noam

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Columbia Institute for Tele-Information
Graduate School of Business
Columbia University
809 Uris Hall
New York, NY 10027
(212)854-4222

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A lot of people will use the first opportunity to tell you that they never watch TV, except perhaps McNeil-Lehrer. They will also tell you that although they never watch it, it's gone downhill from its early golden age. Where have you gone, Edward Morrow, they lament.

It is, of course, possible to look at the merits of criticism, which I will do later. But it's also important to put them into a historic context, of romanticism about the media past, when everybody was apparently walking down the street reciting Milton or discussing Voltaire.

The historical context is that new forms of media have always been badly treated at first. When movies were invented, they didn't show Shakespeare, but rather exhibited vaudeville dancers and even bare ankles. Traditionalists were outraged. Later, when sound was introduced into motion pictures, musicians' associations agitated publicly, and I quote "sound movies are economic and cultural murder." When the radio arrived, researchers noted that "Parents have become aware of a puzzling change in the behavior of their children" ¹ In Britain the headmaster of the elite Rugby School complained that ". . . people listen in to what was said to millions of people, which could not be the best thing." ² Indeed.

¹ Eisenberg, A.L. Children and Radio Programs. New York: Columbia University Press. 1936

² Daily Telegraph, Oct. 23, 1926. in Briggs, Asa. The Birth of Broadcasting. London: Oxford University Press. 1961, p. 14.

The telephone was no exception to the dismissal of a new medium as frivolous at best. Soon after its introduction, it was accused by a noted psychiatrist of driving people permanently insane. [He might have had a point]. Some religious groups urged their members not to use the telephone, which they believed was a device of Satan to make people lazy.³ As for computers, in the 1950s and 1960s, many believed that they would surely create a 1984-like state. But when the real 1984 rolled around, the fear had become that 12 years old would use computers to start a nuclear war on their own.

Today's restrictions

Today, the entry of new forms of media delivery — electronic mail, or electronic bulletin boards, or telepublishing — raise similar fears. Take 900 service as an example.

In the past, the telephone was mainly used for person-to-person, real-time voice conversations. Attempts to make the telephone into a mass medium carrier was limited to weather and time announcements, etc. Today, the telephone is beginning to become a mass medium in new and interesting ways. However, some of it is sexual in nature. In New York City, for example, there are about 100 such services. This tells you something about N.Y.C. On the other hand, there are none in upstate New York because NY Telephone, a common carrier, decided for several years now that upstate New Yorkers aren't ready for this yet and need to be shielded.

Sex isn't even the worst aspect. Some 900 services are used by various fly-by-night

³ Pool, Ithiel de Sola. Forecasting the Telephone: A Retrospective Technology Assessment of the Telephone. Norwood, NJ: Ablex. 1983, p. 125.

scams. And now, there are even 900 services by lawyers offering legal advice.

When TV emerged in the late '40s, it affected the dominant media negatively. Film attendance dropped sharply from 3.4 billion in 1948 to less than 1 billion in 1968.

Profits at the ten major Hollywood studios falling from \$122 million in 1946 to \$30 million three years later. The total number of theatrical features produced declined from about 488 in 1947 to 253 in 1954.

Hollywood went to war against TV. It's us or them, they said. If you work for them, don't come back. Ronald Reagan went to work for TV, and never made a movie again. He had to look for another line of work. Hollywood's hostility toward television began to crumble in the mid 1950s as producers realized their economic interests were not committed to any particular form of distribution.

Later when cable TV emerged, it was the same story, like the Bourbons in France, who had learned nothing and forgotten nothing, movie producers repeated virtually the same mistakes with cable television. First, they ignored cable television and let others take the lead in program distribution. When they finally realized the importance of the new medium, they went on an ineffective counter-offensive. And the TV broadcasters, the new establishment fought cable TV tooth and nail, tried to control it, to regulate it, anything. But it didn't work because cable distribution is inherently superior.

And now it's cable TV's turn to try to grab the spokes of the wheel of time. Telephone carriers are about to be able to send switched video channels from computer-like server. And guess who is trying to protect the public from this newest threat?

There has always been great concern about electronic media displacing books.

During the period since the introduction of television in the United States, the book publishing industry has increased in terms of the total number of titles and books sold. From 1946 to 1980 the number of new titles increased at an annual rate of 5.2 percent from 9746 to 35,651, whereas in the "TV-less" period from 1911 to 1945 it actually **declined** by an average of **0.8 percent** per year, from **11,200** down to **8496** (Paine Webber Mitchell Hutchins, 1982). In 1980, more than 538,000 books were listed in print; by 1990 this figure had increased to over 800,000 (R.R. Bowker Company, 1990, communication).

Ahh, I know, you're asking, what about concentration? Actually, American publishing companies increased from 655 in 1947 to 1652 in 1977 (Noble, 1982, p. 105), and then to 2180 in 1989 (R.R. Bowker Company, 1990, communication). In dollar terms, book sales are 0.25 percent of the American GNP, and this percentage has remained remarkably stable since 1960. In the TV-free 1930s and 1940s it was only about half as large.

Book publishing and TV has become increasingly intertwined. More than 40 percent

of screenplays for American feature films are derived from novels and short stories (Sterling and Haight, 1978, p. 295).

Books also receive television promotion through the symbiotic relationship that has developed between authors and television talk shows, with their insatiable hunger for subjects and experts. At the same time, however, the television connection favors the publishing of works that lend themselves to capsule discussion on a popular program. It favors the author with a winning personality, simple points and ready solutions.

So where will the future take us? Television evolves in several stages. The first two are well-understood, the third is rarely recognized. The first stage is limited TV. This is followed by the second stage, **multi-channel TV**. This is the presently emerging system, but it is not the end of evolution. The third stage is **distributed television**, the TV of the future. Limited television was the system of the past.

The first three decades of commercial television in the US were characterized by the an oligopoly of three national programs CBS, NBC, and a fairly weak ABC. Public broadcasting was merely a footnote.

The three networks, physically located in close proximity in New York and continuously interacting, were at once fiercely competitive with each other for audiences and talent, and cooperating on issues of mutual self-interest.

The system was highly profitable to the handful of broadcasters nationally and in each local market. But it had one vulnerability: it rested on a government-awarded license, which could, at least in theory, be withdrawn for misbehavior or inadequate performance. The Federal Communications Commission, was set up as an independent commission not subject to direct political directive. However, for many years the agency was in bed with the industry.

In practice, the loss of a license is more theoretical than real. Of the more than 10,000 applications for license renewal between 1982 and 1989, less than fifty were directly contested by rival applicants.

The original TV license were awarded after hearings comparing the various applicants merits, and off the record political interventions.. One alternative, lotteries, was later used for low-power TV and for microwave broadcasting (MMDS). The third alternative -- auctions -- has recently been introduced for some new mobile services but not for broadcasting.

Given the major financial value of a license, broadcasters protected it by consciously cultivating community goodwill through various forms of service, and by avoiding controversy and by imbalance in programs. It also made sense, in terms of generating

audiences, to avoid antagonizing any segment of the population. All this led to cautious, middle of the road programs and behavior.

Perhaps the best one can say about privileged entry is that it permits society and other parts of the media system to adjust gradually to a more open system. Many critics of TV believe that the less there is of it, the better. But actually the opposite is the case: The most questionable system is a highly profitable medium under the protection of the government and run by its private-sector beneficiaries.

Many people believe that the evolution to an open multichannel TV leads to "more of the same," simply to a multiplication of the old type of programming. But this is incorrect in terms of economic logic as well as empiricism.

Commercial television frequently disappoints those seeking the standards of public service television. But this cannot be simply because the medium is commercial. After all, most print publishers and film producers are also profit-oriented, and they turn out many works of high cultural standards (as well as of low ones). But the traditional commercial TV system was limited to an incredibly small number of channels, and it therefore served mainly the broad center of the "taste distribution". The guiding program philosophy was frequently but incorrectly described as "lowest common denominator" programming. In fact, it did not aim at the lowest level of audiences, but at the most prevalent one -- the popular culture of the middle and lower middle classes.

In 1994 there were 99 different cable channels operating in the United States. The number of channels has increased from 4 in 1976, 43 in 1983, and 99 in 1994. New program channels emerged. They took on a different format than the broadcast

programming. Whereas the broadcast channels had a "full-service" program philosophy, based on economic logic as well as regulation requiring the service to the community at large, the new channels were format-based. They provide all-sports, all-news, all-movies, all-religion, all- cartoons, all- science fiction, all- comedy, etc., etc., around the clock. The audiences for each channel are still small, but they add up. Today, 99 different cable channels are operating.

Many of these channels are merely an expansion of traditional program categories. Even so, this did not mean, after an adjustment process, just more of the same. In any medium, format affects content, and TV is no exception. The 24-hour CNN news format permitted the covering and staying with breaking stories in much greater depth and length. Examples are the Gulf War, the Clarence Thomas Senate confirmation hearings, disasters such as the San Francisco and Los Angeles earthquakes, or the World Trade Center bombings in New York. In sports, the greater availability of time and the need to create diversity led to the coverage of sports beyond the football, baseball, basketball, tennis, and golf that dominated the screen before. Examples are the Tour de France bicycle race, the World Cup soccer (after a long absence of soccer on American TV outside of cable imports such as *Soccer Made in Germany*), and U.S. rodeo and "monster" truck competition. For movies, the absence of most regulatory restrictions, coupled with a need to provide audiences with new alternatives, led to the showing of sexually more explicit and more violent programs.

A second type of new channels took up traditional but more marginal program categories and gave them visibility and presence. Religious programming is an example. The Discovery Channel offers nature documentaries. The Weather Channel provides significantly more detailed information to specialized users such as farmers, boaters, or pilots. The Travel Channel informs about tourist destinations. CNBC provides business information and talk shows.

This trend continues unabated. In 1992, 20 new program channels were offered to cable operators and in the first half of 1994 alone, over 70. They include: antique auctions; automobiles; arts performances; bingo; books; business; catalogues; computers; cowboys; classic arts; classic sports (old highlights); crime; dating; deaf and disabled; environment; fashion; games; gambling; gardening; golf; healing; health; history; home buying; how to; human development; independent films; inspiration; international business; jazz; lectures; military; museums and exhibitions; mothers of newborns; movies; multicultural; new age; outdoor; pets; public affairs; real estate; recovery for alcoholics; romance; self-help; shopping; short movies; singles; soap opera; and Spanish.

Thus, there will be quality channels each night, far more than a person can watch. But to find them will take some navigating past the World Wrestling Federation, romance, gambling, and shopping channels.

There is more news and public affairs programming available today on American TV than ever. Serious news magazine shows have proliferated. Four are among the top 20 programs in terms of audience.

What is missing? Specialized instructional programs; programs in languages without

a concentrated U.S. base of speakers; foreign channels. Nor is there yet an interactive channel of merit yet. The beginnings of interactivity are in shopping and games and, in the future, probably in adult programs. There are no controversial political channels of extreme left or right wing programs. (Some of these are available through local non-profit public access channels.) There are no channels for native Americans (Indians). But in particular, there are no new channels for children. There is no "Fairy Tale Channel" or "Elementary School Channel".

Negative Impacts, too, of course.

politics of 15 second soundbites

everyone famous for 15 minutes

attentions span shorter

communities disintegrate

advertising gets more intense

etc etc

I won't say that video is superior to print. Of course not but neither is the opposite true. print works well for abstractions. But for images, TV is superior. Scenes from Vietnam. A sports event. A concession speech by a losing candidate. A nature documentary. A Hitler speech.

The point is that each information stream and presentation has some advantages. What we

need to do is to try to combine the best of them.

Multimedia

Convergence

Medium of the future: comic strip. or rather, the hyper comic strip.

panels of text with still pictures. Some of the pictures will move like film when you touch the screen. There will be sound. Maybe even smell. and the text will go into deeper details, and search into other text, like hypertext.

you can skim this hyper comic strip, or you can navigate in it. you'll do it on flat and light display panels you hold like a book. and you can write notes on it, store, and send it to other locations.

This also means an entirely new form of what a work of writing is, what a work of art is, what literature is, what film is. All these creative endeavors are based on a technology.

When a new technology emerges, human creativity will have a new tool.

So the question is not print vs. video, but rather, how to combine them.

All this is exciting.

Time to move away from the nostalgia for a golden age that never was, from an elitist disdain for popular culture, to the future that looks bright to those who have the courage of imagination.

TV guide for today.

great interview with jimmy carter on his book of poetry

sail boat crossing of Pacific

weather for trip

wonderfully eccentric pub access show

gossip about why all the hollywood stars are moving to new york

peggy noonan interview on black experience

cnn news about republican dinner in New Hampshire

Friday: American graffiti

Charade

an affair to remember

country music awards

Quality of TV Bad?

Maybe the opposite is the case? Quote NYTimes article.

This trend toward more channels will continue. The major bottleneck is the limited channel capacity which now averages between 35 and 55 channels, but is being overcome. In New York, one cable system carries 150 channels. New technologies such as fiber compression are being used, and an experiment in Orlando, Florida offers 500 channels. Other channels are offered by direct telephone wires (experimentally), and microwave "wireless cable," and direct satellite broadcasting.

Stage III: Distributed TV

It is tempting to believe that, as this trend continues, we will move to the mega-channel television. But this would be an incorrect extrapolation. Actually, the opposite will happen: We will move into the third stage of TV: *distributed television*. The key

technologies here are video servers, broadband switching, and navigational agents. Fiber lines are important but not essential. The technology can rely on upgraded copper wire, using encoding and noise-reduction techniques (ADSL, 16 CAP, Tut) that permit the use of a telephone line as a video conduit. Although fiber helps, it is the switching that is important. Video servers are large computer-like storage devices, storing thousands of films, documentaries, and other kinds of programs. Many companies will operate these video servers, charging a varying mix of usage fees, subscription charges, transaction fees, advertising charges, and sales commissions. There will be customized ads, based on customer demographics and on customer transaction data.

These servers will be interconnected through phone and cable in the way that the Internet today links computers and their databases. Together, they form a "distributed" form of television program availability.

This means an extraordinary choice of program options. When given an abundance of choices, how do people react? They seek simplification and convenience. In the U.S., for example, few people go through the trouble of ordering films by pay-per-view. In the future, they will simplify the selection task by "navigators" and personalized menus. In that world, channels will disappear, or rather become "virtual" channels. This leads to the emergence of an individualized "me channel" ("canal moi", "Kanal Ich") based on a viewer's expressed interest, his past viewing habits, recommendations from critics he trusts, of delegated selection agents, a bit of built-in randomness. This is why the future will not be one of 50, 500 or 5000 channels. Much worse. It will be a future of only one channel, a personalized channel for each individual. The simultaneous mass medium experience will be

replaced by individualized experience. This is not narrow-casting. It is custom-casting.

The Internet is a forebringer of this trend. It is now becoming commercialized on its way to a mass medium. To be video capable on a large scale, it needs to expand its capacity and it needs to establish a pricing mechanism. These issues are technical and can be readily resolved. Advanced encryption techniques, digital signatures, and digital cash, can secure transactions, which also protect privacy and anonymity between program providers and recipients.

All this in turn limits the ability of government to control, and leads to the question: what is the government's continuing role?

Except for unusual events, the electronic hearth around which entire societies congregated nightly will be no more. But this communal experience of constant information sharing has been only an ephemeral episode in the history of mankind. It clashes with a more individualistic media past and a more information-rich future. It is a system based on scarcity of content production and scarcity of conduits. As these conditions change, the structure of television evolves. In time we shall experience a television of openness, open to the access of new voices—commercial and nonprofit—open across frontiers, and open to viewer choices. It will contain some that is good, much that is bad, and most that is casual.

In this environment, what is the role of government?

This gets us to Washington and to the information superhighway, a.k.a. the national information infrastructure. The issue has received much public attention. But it is necessary to prick that hot air balloon. I feel like Dr. Kevorkian here.

The information-superhighway is a slogan. No one really knows what it means. I

like to think of it as an ink-blot test into which every interest group reads its fantasy for policy and funding. As political strategy such rhetoric is pure genius, but it is coming back to haunt this Administration because it now has to deliver. But to deliver, one must have a goal, a plan, the troops, and the financial commitment. None of these elements exists. For example, there is no federal money available. In fact, the government is taking money out of telecommunications. [Radio, Moscow study]

Aside from financial support, the second thing a government can provide is regulatory policy. Regulatory dollars. Yet the sum total of the Administration's concrete policy initiatives, after two years since its election and excluding generalities, has been to let Congress do the job. First year Senator Hollings, and now also Senator Pressler. Of course, politics is the art of the possible. Therefore, the bills in Congress try to get the various interest groups under the same tent by fashioning some compromise. The problem in my mind with these bills is not so much substance but process. The substance is fine, more or less. The problem is that they are so detailed that they cannot possibly endure in a dynamic industry like telecommunications. I'm trying to re-work the Communications Act. Telephone Act.

The third way to affect the telecommunication environment is by inspiration. And here the performance has been excellent. Vice-President Gore is knowledgeable and committed, but the follow-up has been too thinly staffed. This Administration has raised telecommunications policy to high visibility. We heard about connecting schools, hospitals, and libraries to the information highway, whatever that might mean. Who can possibly be against it? But where is the beef? The window of opportunity is closing. The 15 minutes

of public attention for communications will inevitably be over soon.

But what counts in the last analysis are not the words in Washington, but the facts on the ground. We have the most dynamic environment in the world. We have invested, at some pain, in creating the most competitive industry structure in the world, in telephone, cable, mobile computers, and satellites. The companies are dynamic, lean, and creative. And we have an incredibly creative user community, both within big organizations, and in the computer communications users of the Internet with its mind-boggling growth, creativity, and democracy. These forces will drive the evolution of the American telecommunication superhighways. Government efforts can only affect the timing a bit. Progress will inevitably be made in telecommunications by spurts, and the information superhighway will be here not because of what's happening in the White House and in the FCC, but often in spite of it. Where public policy can help is to put into place some of the rules of the road for the emerging network of networks. We've had liberalization in communication, but liberalization doesn't mean liberatarianism. There's still need for several government policies here.

The first is the reform of universal service. What do we do about a system that subsidized some users by charging others more, in a competitive environment? I propose a voucher system that makes it possible for customers to choose among local telephone companies with carrier credits based on usage. The system would be financed by a universal service fund derived from proportional contributions (revenues, net of payments to other carriers) by all companies involved in the relevant market.

A second task is to think internationally when it comes to universal service. The

United States should push to lower the international accounting and settlement payments toward cost.

The third item on the agenda should be to reform. Telephone companies operate as common carriers while cable television companies do not. As the two converge they start competing head-to-head. Even if common carriers are as efficient as their rivals, they are inherently at a disadvantage because they cannot differentiate among customers by price, or refuse customers, or have symmetrical access to useful or cheap segments of the private network. Thus, their best customers will be taken away from them. That will, in most likelihood, erode the common carrier principles of equal service to equally based customers. Common carriage, as a principle of neutral, undifferentiated service, is therefore likely to gradually disappear. But we can replace it with alternatives. We have to think about these alternatives and institute them as long as there is still time. One way of dealing with the problem of common carriage is to replace it by another concept, which I call "third-party-neutral interconnection", which basically says: Nobody has to be a common carrier. If you want to be a private carrier you can do so. You can pick your customers, and interconnect only with those you want to. But you cannot pick your customer's customers. If you provide interconnection to another network, you cannot screen its traffic, but accept the bits of all of its customers. Third-party neutral retransmission will accomplish virtually all of the policy goals behind common carriage.

The fourth is the reform of interconnection. The history of telecommunications competition in the United States has been a history of struggle over interconnectivity. Today, the introduction of local competition is based largely on the question: Can rival local

telephone companies interconnect into established local networks? It is important to establish various rules of the road, as to who interconnects with whom and under what conditions, and where

The fifth issue deals with a more long range problem -- the impact of the evolution in telecommunications on traditional communities. When we are talking about electronic superhighways and information superhighways, the example that has inspired Vice President Gore is the interstate highway system. This huge federal project had many positive aspects in that it made it easier to travel from here to there, virtually everywhere in the country. But it has also had some negative impacts, for example on the cities of America by accelerating the flight of the middle class. It would be naive to believe that as we now build electronic highways that the impacts would have no negative side-effects, too. The negatives that we always hear about are the people being left behind because they cannot afford it. While that is true, it is a solvable problem. The historic experience in American society is that communication technologies spread quite rapidly throughout society, whether it is TV, cable television, the telephone, or consumer electronics. Public policy helped along the way and will continue to do so. But more difficult is how to deal with the impact of personal and organizational on communication. If one makes it easier and cheaper to communicate in new ways, one also, relatively speaking, makes it more expensive and cumbersome to communicate in the traditional ways. As one makes new electronic friends, telecommute to one's job, and becomes part of global communication systems one also weakens traditional forms of communications to friends, neighbors, and traditional communities. For example, the new proliferation of channels on cable television made it possible for televangelists to

reach directly to millions of viewers, and, thereby weaken the traditional churches.

We need to provide tools and expertise to the traditional communities as they try to upgrade themselves to the future of telecommunications. The model that I would have in mind would be the creation of a joint public-private Corporation for Public Networking, based on the model of the Corporation for Public Broadcasting, semi-independent from government, and its projects funded by various levels of government and the private sector.

The last question is where to concentrate the basic research that the federal government underwrites. Suppose we succeed in all of our endeavors? Suppose we have all the highways we want, information becomes plentiful, and it moves freely. What then? Sometimes the worst thing that can happen is to get what one wants. We can make transmission and storage more powerful and production of information plentiful, but the ultimate bottleneck are our own limitations. These "last twenty inches" are hard to upgrade technologically.

The communication process is an integrated fashion with production, distribution, processing, and storage of information. What goes by the name of information revolution has been essentially a revolution in the transmission, production, and storage parts of this system. The weak link is the processing segment. Whatever we have now is very fast, but also very, very dumb. On the human level, we can slightly modify our own capability and this is what education is all about. We increase literacy rates and provide people with more education. Another approach might be "brain modems." Clearly, we are talking science fiction here, though, the Air Force has begun to experiment with it for pilots' control. Another way is to establish some economic rules that will make it more costly for people to

push information in your direction. To give a concrete example, consider telemarketing to the home at significant intrusion. This situation could be transformed into a market transaction by establishing a "Personal 900 number," where unsolicited calls will receive a message that basically says, "If you want to talk to me, it will cost you \$3. Do you still want to talk?" Some callers would not want to talk to anybody at this rate, and therefore, the problem of intrusive calls would have a market solution. I think that a market solution is a good way to direct the flow of information in society, but it requires an initial allocation of property or access rights. It is most realistic, however, to seek automated information screening. We also need technologies of screening, such as, computers that can select information based on importance to the user. Currently this is not available. No computer can look at a TV program and provide a summary of the plot or summarize a text or a novel. We simply do not know how to do that. This will take time and computer power to accomplish. That is why I think that our present governmental emphasis on the highway part of communications is besides the point. It does not advance the frontier, but brings up the baggage train. It happens anyway, and needs little government encouragement. What we as a country need to do is not so much to develop and encourage transmission technologies - this is already happening by industry players. But what we do not have is any kind of serious public support for research of screening technologies.

Electrical engineers have a concept of impedance, which means that if different parts of a system, in terms of electrical resistance or other criteria, do not match each other, the system becomes clogged like a sewer pipe backing up and creating havoc. In the information system, we are approaching something similar, and we have to start paying attention to the

question that we might choke ourselves by the very success of our telecommunications and computer policies. The weak link of processing is one that will require decades and much money to develop.

These are some of the major challenges for the short as well as long term. It is time to move from generalities to action.