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What the Industry Can Offer: The Next Community Network

The topic assigned to me was "What the Industry Can Offer"—an impossible topic to discuss because the industry is currently made up of such diverse viewpoints. My own company, which is the fourth largest cable television company in the country and has facilities in 116 cities, is undergoing a major transitional stage. The communications technology being developed now is limited only by our imagination. So I tried to subtitle my speech and came up with the following: "What does industry offer, what can it offer the library?" which is a variation of "How do you see your profession?" which led to "What is a library?" Others were "How much do you need, how soon?" "Is a depository enough?" "The society's convenience and the need to know," "The medium of plenty or the medium of waste," and, of course, "The communications revolution" or "How to compete in the communications explosion," "When we do what we can do, what can you do?" "Community information center," or "The library as a community resource center."

I finally settled on the subtitle: "The Next Community Network." I made my final decision only after discussing with librarians what the ramifications of libraries are going to be. At the risk of being presumptious I asked a number of librarians what business they were in. I had two astute answers: communications and service. The first, I think, is primarily what cable and the library is all about—communications. Secondly, libraries are in the service business. In the society of convenience it is no longer possible for librarians to expect people to come to them to view their wares. It is now imperative to take the library's

facilities to the community. This can be done by a broadband or a cable communications system.

Earlier, I may have used the term cable television. That is the last time I will use it for the following reasons. There was, for a generation, an industry originally known as CATV, or Community Antenna Television, which started in small communities and in the hills around the country in Pennsylvania, Oregon, the mountains of Colorado, etc., primarily as a reception service to areas that could not receive any television at all. About seven years ago, the Federal Communications Commission permitted CATV to begin programming and carrying sources of programs other than off-the-air broadcasts. This became known as community or cable television. Today, with the capabilities of our new plants with total two-way capability, it is possible to carry any signal which can be reduced electronically or anything that can be reduced to an electronic signal. We have the capacity within the band width of one television channel, to carry 2,000 data channels. The systems have the capability of originating at any point on the system.

For the above reasons, comparing what CATV was five years ago to what it is today is analogous to comparing railroads and airlines. Both are transportation, but the systems that were built five years ago are the railroads, and the systems being built today for broadband communications industry are the airplanes. The broadband communications industry has, in the last five or six years, probably become the most studied communications industry of all time. If the telephone had been studied prior to the time that it was put into service as much as cable communications has been, we might still be communicating with tin cans and a string. Everybody is telling the cable communications industry what great uses can be made of its systems. The cable communications system can, however, only provide the pipeline for the educators, for city government, for business, and for the public. It cannot, nor does it want to, control the input from these sources. There is a tremendous potential for information, which does not yet exist in any community.

Libraries are a source of education, information, and entertainment. A wedding of the current cable communications technology and the library's capability for disseminating information has great potential. Although libraries were established in the very early history of the United States, they were already obsolete in some respects at the time of their institution. One institution that had the edge on libraries was the town crier, because the town crier had mobility. He could move to where information was needed. The library first had a book depository in one place and, to provide mobility, it established branch libraries, and then mobile libraries. The next step in this progression of taking the information to the people can be the community cable communication system.

Some consider that we have already gone from a print-oriented society to a verbal or broadcast-oriented method of communicating. With this change,

libraries can be the community communications resource center with direct distribution of all kinds of visual information. Hopefully in the future this will include random access to a library's microfilm collection and other films. This can be done on a sporadic basis right now, but the technology necessary to allow anyone in the community to have random access is not currently available.

With the universities and the elementary and secondary systems tied into one network with the public library, the information resources will be greater and capable of more efficient utilization. This kind of future could make the library the provider of information for millions of homes. However, if libraries remain book warehouses, and librarians remain index clerks, the cable communications industry will have little effect on them. But if librarians accept the responsibility for a true communications resource center, the cable communications industry can provide the access both to and from the library. If librarians want such a cable system, they should find out what the capacity of the system in their community is. If there is none, local politicians must be motivated to get one, with the library's input, and then administrators must be motivated to gear up for the uses that can then be provided. Film chain, slide projector, microfilm and microfiche all can be interfaced with the communications system. Many libraries have such audiovisual aids now, and with a few thousand dollars that equipment can be interfaced with the cable system in those communities.

QUESTIONS AND ANSWERS

Q.   When a community is wired, what percentage of potential subscribers does the industry anticipate, or is it experiencing?

A.   In established systems, we are reaching between 50 and 70 percent saturation, because these are communities that do not have adequate television services—either in quality or quantity of broadcast signals. In newer markets, we estimate reaching 50 percent saturation in five years. We are estimating 60 percent saturation in Urbana-Champaign in five years. If we include all the students, and we are wiring over 5,000 dormitory units on campus, we will probably be near 65 to 70 percent saturation in Urbana-Champaign in the next five years.

Q.   Do all cable communications have two-way capability?

A.   All of the systems we are building now or have built in the last two years have this capacity, and anything that we will build in the future will have it. This is a good question—there is controversy in the industry today as to whether two-way communications are possible. They are—in our Orlando, Florida, system we are experimenting with such things as home shopping, remote surveillance of banks after hours, remote traffic surveillance, and

automatic polling. We are connecting the Orange County Library System with all of the schools and colleges in Orange County.

Q. Are there any municipally owned cable communications systems?
A. Yes, there are some examples of public financing; I feel most of them are bad. San Bruno, California, is perhaps the most notable. They use water revenue bonds to finance the cable television system, and after five years, approximately one-half of the system is built. The city has petitioned the FCC for a waver of the local programming capabilities of the system. The water system has left much to be desired; there are many people who do not feel that San Bruno is doing very well. Philosophically, there are all kinds of arguments about it, and I do not want to go into them. Economically, it is a disaster.

There are many other things that the public dollar should be doing than financing a speculative enterprise, as long as private capital will do it. The issue of public funding of CATV is nothing but a lot of smoke. The cable communications industry has, from the beginning, been fighting some of the most powerful lobbies in the country—the telephone company, broadcasters, and newspaper publishers. These are the existing communications monopolies, and we feel that the establishment of this broad capability of a new communication system is going to break the hold of the existing communications monopolies. But there are so many of what I refer to as protest groups throughout the country, some sincere and well intentioned, raising so many issues that they are confusing the entire issue and playing right into the hands of the existing communications monopolies. These monopolies are going to make it more and more difficult for new systems to be built—systems that are going to provide the kind of service that we cannot get while the existing communication monopolies are still in existence.

Q. Doesn't the system operator become a programming monopoly?
A. In some ways that is correct, with this exception: the only monopoly being established is one of financing the building of the system. Of the thirty-five or more channels that we are discussing, the operator will have control of only one, the other programming sources will not be under his control. This is especially true of the channel reserved for public access, what we refer to as the soapbox channel. I think that in general the FCC thinks that it is better to get people standing up before the camera than going down to city hall to throw rocks. But the input from public access cannot be controlled by the operator, or by anyone. By law, we cannot discriminate or censor. In the same way, we have no control over any programming source, e.g., the library. So we are providing a monopoly only in the fact that we have the wire.

Q. What reasonable assistance in terms of hardware and software, or technical capability and technical assistance, is the industry willing to provide?

A. I can only speak for our company. First, we believe we can assist in getting grant money: there are some HEW funds, and there are some private foundation funds for hardware and sometimes software for pilot programs on the use of cable. In addition, the system operator's programming people can assist via classes, on the use and maintenance of the equipment, and the fundamentals of sound programming. In most cases, we would be willing to provide the interfacing equipment to the system. We do not now, nor do we ever intend to actually provide the input because we are not librarians, educators, or data processors. We provide the pipeline responsible for the maintenance of that system. For many of our systems we provide the use of mobile van facilities and studio facilities for community groups until they are able to obtain their own equipment. We provide the facilities for public access, and we will provide, in most cases, the channel capacity for getting into the system and into the homes.

Q. In the large metropolitan areas, how quantitative will the introduction of cable television be?

A. With few exceptions, I think our penetration in the very large markets (those ranked in the top 25) is going to be small unless we are able to pinpoint the kind of service that these people are willing to pay for. In the experiments in Orlando, Florida, mentioned earlier, we need to know whether we are going to be allowed to provide pay television on one channel and whether businesses are going to look for an alternative source to the telephone company for providing data interconnection. These are questions that we really cannot answer and one reason why we are going so slow in the top markets. We cannot do anything that would not be economically feasible—e.g., to wire Chicago on one hand, or Tucson, Arizona, on the other, would not be economically feasible. Denver and Dallas might also be very difficult markets for us to penetrate; I believe it will be five to eight years before those markets will be built.

Q. What is required to interconnect systems in adjoining communities? Is it being done?

A. It does not necessarily require a separate reserve channel for interconnecting these systems. Urbana-Champaign and the University of Illinois can be interconnected both technically and from a program capability just by the nature of their being contingent. To interconnect all systems within a state would probably mean going to some kind of point-to-point transmission facility, microwave facility, or satellite interconnection system. This will be done and is being done more and more. We are currently

putting together a network in North Carolina which will service only the cable system, and we now have eighteen communities within Orange County, Florida, that are interconnected. The problems are not technical for the interconnective system.

Q.   When might rural communities receive cable communications service?
A.   I have no idea when rural communities will receive service; that is one reason we need over-the-air broadcasting in the future. It is simply not economical to string cable in rural communities. When we talk of building a cable plant we are considering a capital expenditure of $10,000 per mile. There have been some exploratory bills introduced in Congress to provide low interest rate funds for providing this service, much as they are provided for the rural telephone companies and electric companies. This will probably come only in the far distant future—primarily because the broadcasters will resist this strongly.

Q.   Will the cable companies guarantee the numbers of channels to be included in a system and those to be used for educational purposes?
A.   Fortunately the FCC has already addressed itself to this question. By 1977 all systems within the top 100 markets must meet the new FCC requirement—a minimum channel capacity of twenty, the technical standards as set up by the FCC, the access channels, the one channel reserved for every channel off the air, etc. The communities, the smaller markets outside the top 100 market area, must be certified at that point, which will give the city councils an opportunity to open up these franchises. As a result, a local mandate by the franchising authorities will require most of the smaller communities to meet the FCC standards. I believe it will start before 1977, but by 1980 they will all be in compliance.

Q.   Will other advancing technologies, such as lazers, be economically and technically feasible as carriers for communications signals?
A.   The lazer, in our opinion and the opinion of the engineers, is going to be a tremendously useful tool. But it is going to be useful more on the basis of the point-to-point transmission, taking the place of microwave or satellite for distribution. We can harness the lazer within what we call a "wave guide" and hang this on the poles and shoot that lazer down. It is very difficult to remove the signal every fifty or sixty feet in order to get it into the homes. The advancing technologies are going to be a part of a total telecommunications policy. We do not feel that the cable is going to be the only communications means, but we do feel that we are going to play a very important part in the distribution of information.

Q.   Do you think there is going to be a place for satellite-to-home transmission in the new cable communications set up?

A.   Yes, but I think it is going to be limited. For the same reason that there are not more than four or five television stations in one community, and they are never adjacent, there cannot be more than three to five signals directly into the home from the satellite, and certainly not the multiples that we have been talking about. But I do very definitely think that there is going to be a place for satellite-to-home transmission in the rural areas.

Q.   Do you also refer to the Chicago suburbs, when you say it is not currently feasible to consider providing cable communication to Chicago?

A.   Because of the tremendous capital investment required in the city of Chicago, much of which is underground construction in concrete, and also because of the current existing broadcast capability within the city, and because of the political climate, I think it will be very difficult to operate a cable communications network within Chicago. In terms of things happening in the suburban communities, we have a catalyst in the Sears Building; signals are bouncing off of it all over the place right now, to the point where some people within four or five miles of a transmitter are not receiving good pictures. Even when the transmitters are put up on top of the Sears Building there are going to be signals bouncing off other buildings in Chicago and isolating good reception for some of the suburban communities. I believe many of the suburbs will have cable communications networks before the city of Chicago itself.

Q.   You said both that your company is providing experimental types of service and information—surveillance, home shopping, etc.—and also that you will only have one channel for two-way communication within a system. What can the library expect?

A.   Because we are in a pilot program we are currently doing input as well as the transmission system itself to prove that it is technically feasible. To handle the kinds of communication that have been discussed and to motivate the use of them by the hospitals, municipal governments, public access groups, etc., means we have to wear both hats for the present. Any cable operator who is currently building in a major market would be more than happy to provide users with the channel capacity now only used on an experimental basis if users were able to provide the internal equipment, since suppliers will not initially provide that.

Q.   What requirements does a library need to meet to gain access to a channel?

A.   A library must have some originating capability. It can be as simple as a

slide projector, a camera, a film chain, or a videotape recorder. You could start with only a character generator.

Q.   What does access actually include?

A.   Access is a term that was coined by the FCC in the rules of March 1972. The FCC says a cable communications system must provide free access under certain basic conditions. We must provide channels for public access (soap box channel), for municipal access (access by the city), and for educational access. However, the FCC went a step further and said that no city, at least during the experimental period, could require that more than one channel be donated to public, educational, or municipal access, unless the city could show that these channels would be utilized and that they are absolutely needed. An example of this is the University of Illinois where, in addition to providing the access channel to the schools, they are providing three channels from the university into both the communities of Champaign and Urbana. This exceeds the FCC requirements, but we believe, along with the university, that we can go to the FCC and show a consolidated program of absolute usage of these channels so that they will wave the maximum of one channel. Free access means that there is one channel reserved for the city; all its needs is the equipment to program it. The same is true for public access and educational access. The cable operator must provide, in addition to this, studio space at no cost for the first 5 minutes, and most companies will provide all the time on public access that anyone wants. So free access means just that, we must provide some kind of basic studio facilities and the channel for access at all times.

Q.   If the library has video equipment, will it be able to have free access to a cable channel within the system?

A.   Yes, as a matter of fact it is desirable for the library, but it is also desirable for the cable operator to have that programming source.

Q.   Is a system required to provide a channel for the library now or by 1977?

A.   Not now, nor by 1977, will they have to do that, not as far as the libraries are concerned. Libraries will have to work out a cooperative program with the school system—at which point the educational access channel is available and would have to share the programming of that channel with the schools. But most cable communications companies will welcome the opportunity to connect you with any programming source, especially the library.

Q.   Do people using access channels control, in the case of public access, input on the access channels?

A.   The FCC has said that the cable company cannot discriminate; we must
      provide service on a first-come-first-serve basis to anyone, and we cannot
      alter or censor anything. The cable industry is asking the FCC also to pre-
      empt our liability for these channels, which they have not done up to this
      point. As far as municipal access is controlled, it would be done by the
      city. The educational channel would be programmed and controlled by the
      educators or the school system. Librarians are in a unique position because
      they would be able to program on all three access channels simultaneously.
      And, with the cable company's channel, there is the possibility for immedi-
      ate output on four channels for information from the library.

Q.   Is the cable company liable for all output?
A.   If we are programming a channel, we are completely liable. If it is our
      channel and we control the information that goes out on this channel, we
      are liable. Theoretically, under most state laws, we are also liable for even
      the public access channel. If someone came in and used obscene language
      or slander, we theoretically would be responsible. The FCC very early told
      us we had to make these things available, but that they did not think there
      was going to be a liability problem. Our attorneys, however, told us dif-
      ferently. We are asking the FCC to preempt the state liability laws.

Q.   How will the recent Supreme Court ruling on pornography affect the li-
      ability?
A.   That is very subjective. I would hate to be in the position of a local man-
      ager who must judge any film or tape that might be in questionable taste.
      The cable operator is not the judge of public morals for any community,
      and I think that it would be hard for us or anyone to make a decision.
      There is no answer to this, and the situation is so new that we really do
      not have an answer for it. However, a library would be responsible for
      programming on a library channel, although the cable company probably
      shares that responsibility.

Q.   Would it alleviate the problem if the cable system operated as a common
      carrier?
A.   The common carrier would still have a certain amount of liability. As a
      common carrier he must set down certain rules and conditions so that
      there cannot be indiscriminatory use of that channel, and even setting
      down those conditions, as our attorneys tell us, still does not excuse us
      from being liable. There are certain broadcast functions that preclude
      common carrier and there are certain parts of our business that will cause
      us to be considered as a common carrier; how these are going to be di-
      vided and what the FCC is going to do with it is anybody's guess. This

budding industry of cable communications is controlled by the FCC, by the city or county government, or whatever school franchising authority is involved, and in many states, the state government also wants to control us. We do not object to the local regulation, we do not object to the FCC regulation, and in many cases we are even reluctantly accepting regulation on a state level, as long as it does not consider us a public utility and attempt to regulate our rates as such. This would dry up almost all of our resources at the bank.

Q.   Are there problems in gaining inter-community franchises for cable communications?

A.   We have been successful in doing that in some places. In Orange County, Florida, there was an agreement among a number of cities to go together for a franchise. Many suburban communities around the Minneapolis area, and more and more outlying areas around cities are getting together to provide a single franchise. In the Louisville area all of the surrounding communities have already said that they would be in agreement about the company awarded the franchise for the city of Louisville. In some areas of the mid-Atlantic and southern states, there is dual authority in the county between the county court and the county commissioners; if you add a couple of municipalities on top of this, agreement is very difficult. Many suburban areas are realizing the problem, and are issuing a joint franchise. Urbana-Champaign and the University of Illinois is a good example of a jointly issued franchise, and the cities of Portland and South Portland, Maine, have gone together and issued a single franchise.

Q.   Can current one-way transmission later be changed to two-way?

A.   Most of the companies are now saying that there is the capability for two-way transmission, and all they need to activate the two-way is the insertion of a separate module into each amplifier. Up until two years ago we felt that way, too. But when we tried it we found it does not work. We now feel two-way communication has to be built in from the time the system is built, or a major rebuilding will be necessary when two-way transmission is required.

Q.   Has the question of copyright for distant signals or those not originating in a particular system become an issue yet?

A.   It is very likely that when we import distant signals we are going to be required in some way to pay for them, whether that payment is called a copyright fee or not. I do not believe that we will be required to pay for the use of the local signals, since they have already been paid for through the local fee, and it seems that paying twice will not be required. I think

that the industry has resolved that we will pay copyright fees to some extent; it is just a matter of how much and by what means.

Q. What is the library's responsibility for providing equipment which will interface with the cable company's equipment?
A. I think any chief engineer on a cable system would be happy to provide the kind of interface equipment discussed earlier, not the cameras or the film chain, etc., but the modulator that is required to put it into the system. He would also serve as an advisor to the library for purchase of other necessary interface equipment.