COMMENTS OF
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I appreciate this opportunity to participate in Intelevent '88. I enjoy meeting the friends I have made at previous Intelevent meetings. Special appreciation goes to Mr. Werner Wolter and Mr. Ronald D. Coleman who serve as Chairman and President respectively of International Televent, Incorporated, for their kindness and hospitality.

Never before in the history of Intelevent have we seen one issue bring together several telecommunication technologies in such a manner that it may drastically alter telecommunication policy and investment. Today, in the United States the issues that surround the development of high definition television have ramifications for the terrestrial broadcast, cable television and common carrier industries. As technology advances and consumer demand develops for services, the walls that have traditionally distinguished telecommunication services are beginning to crumble. Because broadcasters, cable operators and common carriers are all interested in the development and implementation of high definition television, they are each

using this issue, high definition television, as a vehicle for regulatory reform and as a means of establishing or, where applicable, enhancing competition. As both industry and government grapple with the development of high definition television, a whole new generation of business and regulatory issues are emerging and that is forcing all parties to rethink their previous strategies. The issue of HDTV is approached differently by each industry -- each with its own perspective. Attempting to address the HDTV issue is forcing broadcast, cable and telephone interests to communicate with each other, while each perceives the other as an economic threat. The common denominator in all discussions is the delivery of high quality video signal to the television receiver. The issue of HDTV is discussed in a dynamic regulatory and investment environment.

I realize that many in the financial community follow closely the presentations made here at Intelevent with the hope of gaining insight into the telecommunication environment of the future. Today, I am presenting insight into a major communications development in the United States that may change the telecommunication technology and regulatory picture. This insight is shared with the thought that it might add to your perspectives as you address the potential roles of cable television, telephone fiber optics and broadcasting in your own countries.

To begin with, I would like to give a brief review of the existing telecommunication environment in the United States.

Broadcasting is meeting with increasing competition from the cable industry, video cassette recorders, and other broadcasters given the fact that the FCC continues to take the regulatory position that the more broadcast video outlets, the better. Since the over-the-air broadcast industry in the U.S. is supported by advertising revenues the greater the competition for viewers, the greater is the likelihood each broadcasters' revenues will grow, if at all, at a less dynamic rate. With increasing costs of programming and the possibility of stagnating advertising revenues, the U.S. broadcast industry is encountering difficult times.

Adding to the competitive telecommunication environment is growth in cable television's advertising revenues. In 1987, the advertising revenue generated by the cable television industry was $1.27 billion. Clearly, cable television is now a strong competitor with broadcasting for advertising revenues; and with its dual stream of income, subscriber fees and advertising, the cable industry is an awakening giant.

Finally, one cannot ignore the tremendous investment in fiber optics made by America's telephone industries. The capacity of fiber optic compared with copper wire is mind boggling. The day when fiber optic reaches directly into the home is not too far off. In reality, fiber optics has the capability of providing voice, data and video messages into the home. Currently, there are legal, and regulatory prohibitions

against telephone companies providing information services. Since corporate investments in fiber optics must be justified, it is likely that telephone companies will continue to pressure Congress, the FCC and the Courts to reexamine the rules limiting their service offerings.

Video technologies just beginning to get off the ground, such as multi-channel multi-point distribution service, commonly referred to as wireless cable; and those still on the drawing boards, such as direct broadcast satellite, also must be factord into the competitive telecommunication environment. These services will not only compete for advertising revenues, but also provide the opportunity of delivering high quality video signals into the home at competitive prices.

By now you are wondering how the issue of high definition television factors into the equation. Very simply, the ability to deliver HDTV or some derivative thereof has become the cause celebre for each technology. Each medium is attempting to use HDTV to sustain or justify its existence and therein lies the problem facing the investment and regulatory communities. Banking and corporate institutions are attempting to determine the future of telecommunications, while Congress and Federal and state regulatory agencies are attempting to create competitive environments, and where competition is nonexistent, assure that monopolies are adequately regulated.

HDTV and Broadcasting

High definition television was initially based on the idea of improving the quality of the TV screen picture to equal that of 35mm film. Although research on HDTV covers two decades, it has been catapulted only recently into the forefront of U.S. broadcast and regulatory arenas. In the U.S., the Federal Communications Commission has made a policy decision allowing terrestrial broadcasters the opportunity to transmit HDTV or advanced television signals, and I support this decision. In the U.S., terrestrial broadcasters will not be excluded from the opportunity of transmitting improved video signals. Broadcasters as well as other video services will participate in the delivery of an improved television picture.

By assuring terrestrial broadcasting's ability to offer advanced television signals, we are moving in the opposite directions taken by Europe and Japan. Both Europe and Japan have focused their attention on satellite delivery of HDTV and as such have had greater flexibility in designing HDTV systems. Because the Federal Communications Commission has decided on terrestrially delivered advanced television service, technology will be limited by the amount of spectrum available to existing terrestrial broadcasters. Furthermore, the Commission has decided that terrestrial advanced television systems should be NTSC compatible. Any advanced television system should not make obsolete existing television receivers. Therein lies the

problem -- terrestrial broadcast spectrum is limited and we do not want to make obsolete existing receivers. These requirements have placed strigent parameters on the development of technology serving terrestrial broadcasters. Currently, several U.S. and foreign manufacturers are developing transmitting and receiving systems capable of operating within spectrum and NTSC limitations. Although cable television and telephone industries do not have the same spectrum problems as terrestrial broadcasters, their problems are just as perplexing. Since these other means of delivering HDTV or advanced television signals do not have the spectrum problems broadcasters have, the potential for earlier entry into the HDTV marketplace is there. Furthermore, cable television operators and common carriers may select an HDTV technology that is better than what can be accommodated on over-the-air broadcast systems. So, assuming no other limitations other than spectrum requirements, broadcasters are at a disadvantage in providing improved quality video signals when compared with the cable and common carrier industries and eventually the DBS industry. To make matters all the more complicated, there are limitations that cable operators and common carriers have to address.

Cable Television and HDTV

Cable television was originally designed to carry broadcast signals into communities unable to receive such signals over-the-air. Cable still performs that service, and to the chagrin

of broadcasters, they perform more. Cable television's growth in the United States has been remarkable. Today, over 55% of the U.S. television households subscribe to cable. Cable television's evolution seems, by some observers, to be more of a revolution. By winning a series of Court decisions, regulatory reforms in the Congress, at the FCC and at the local community level, cable television has become, in my opinion, a powerful monopoly. In light of the Court's decision in the Quincy case, cable operators have the ability to determine which video services will be carried on local cable systems. Prior to the Court's decision in Quincy, cable operators had to carry all local broadcast signals.

Today, the cable television industry is evolving into a vertically integrated, financially powerful industry. Cable operators not only own local cable systems, but also are increasing their ownership interests in programming services -- the very services they choose to carry on their cable systems. Furthermore, as programming services provide for cable operators to offer local advertising there is greater incentives for the cable operator not to carry local advertiser supported broadcast signals. After all, cable operators are now competing with broadcasters for local advertising revenues.

With its new found economic power, the cable industry in the U.S. is a serious player in the video industry. Programmers who are in part owned by the cable operators are attempting to forge

ahead in delivering advanced television signals into the home. They are attempting to be the first to offer improved quality video picture. The ability to offer HDTV before the competition provides wonderful marketing tools and further underscores the claim of leadership in the video services industry. Since the cable television industry is not plagued with the same spectrum problems facing terrestrial broadcasters, theoretically it could offer advanced television signals in the not too distant future. In fact, real world tests of advanced television signals are currently taking place. There are, however, limitations with which the cable industry must be concerned.

Many cable systems in the U.S. are at maximum channel capacity. To add additional programming services they have to delete existing services, some of whom are broadcasters. To implement an HDTV system, cable operators are faced with the dilemma of rechanneling their systems. Rechanneling is not only a costly endeavor, but also one that would require the deletion of some programming services, since there would not be enough channel capacity on the system to accommodate all programming services offered in HDTV format. This, of course, assumes that HDTV will take more than the current 6 MHz video channel. Where capacity is too limited to offer the consumer an array of HDTV programming, the cable operator may have to consider upgrading his system -- a very costly option.

Then there is the broadcast/cable interface issue. Cable operators in attempting to offer either true HDTV or better

video signals than broadcasters may invest in technology that is inconsistent with the transmission mode used by broadcasters. The cable industry still relies on broadcast services for providing programming. To the extent cable operators cannot retransmit the broadcast mode of advanced television signals or does so with inferior quality compared with cable programming, cable subscribers are likely to voice dissatisfaction with the cable operator's service.

Briefly, cable operators are not faced with the same spectrum limitations broadcasters face, however, the limits of their cable systems and the potential of providing a service inconsistent with broadcast transmissions present serious obstacles to their implementing HDTV service. Furthermore, because the cable television industry has been winning legal and regulatory battles, they may be losing the war of public perception. I predict that the next Congress will reimpose some form of must-carry -- the rule requiring cable operators to carry local broadcast signals. Because broadcasters and cable operators have much to gain by resolving the technical aspects of HDTV, it would behoove both industries to cooperate on resolving their differences. As if the interfacing issues of cable and broadcast delivery of HDTV isn't enough, just to complicate matter more, telephone companies are now entering the picture.

Telephone Industry and HDTV

Since the breakup of AT&T and the configuration of seven Regional Bell Operating Companies we have seen massive investments in new plant facilities. Furthermore, as the result of the Modified Final Judgment (MFJ) we have seen tremendous investment in unregulated services. Billions of dollars have been spent on the development and implementation of fiber optics. In the not too distant future fiber optics will reach into the home. Most of you know the capability of fiber to deliver a large volume of voice, data and video information into the home. Private carriers in the U.S. are also building fiber optic systems and propose to lease as much as 95% of its capacity to other private carriers. The investment in fiber optics is necessary to maintain a competitive edge in the voice message industry; however, the capital expenditure must be justified. One means of justifying the large investment in fiber optics is the possible services that may be offered. One such service is high quality video service.

Recently, at the national political conventions both in Atlanta and New Orleans, Bell South provided a brilliant display of HDTV. It works and it is available. The telephone industry is in perhaps the best technological position to offer HDTV. Fiber optics provides more than enough channel capacity to offer a multitude of video programming services. The ability to offer video services may provide just the right rationale for the large financial investment fiber requires. What a convenient

relationship. But like terrestrial broadcasters and cable operators, telephone companies are faced with limitations. This time, however, the limitations are legal more than technical. Currently, the MFJ is interpreted as restricting the Bell Operating Companies from providing information services and video entertainment programming is likely to be considered entertainment programming. Telephone companies have been seeking to have the MFJ restrictions on information services changed, or at least waived, but to no avail.

Legislation was introduced in this session of Congress to allow telephone companies to provide cable television service within a telephone company's service area. This legislation did not pass this session; however, it is likely that it will be introduced in the next session of Congress. Its introduction will provide a Congressional forum for discussion on the restrictions placed on telephone companies' opportunity to provide information services.

The Commission received a request to waive the rule prohibiting telephone company/cable cross ownership. The request was made within the limits of the law prohibiting such cross ownership, and Commission staff granted the waiver request. The staff's decision will be reviewed by the Commission.

On another front, representing the Executive Branch of government, the National Telecommunication and Information

Administration (NTIA) within the Department of Commerce, has issued a report favorable to the entry of telephone companies into video services. The NTIA report, however, would restrict them from becoming cable programmers.

In summary, the telephone companies have been successful in raising the consciousness level regarding the ability to provide information services. The problem, however, is that they have not been successful in removing the legal/statutory restrictions on providing such services. In my opinion, the winds of change are blowing and I do foresee a time in the not too distant future when telephone companies will be allowed to provide video programming. Assuming this change does occur, the Commission will have to determine how the provision of such services will be regulated, if at all.

The 21st Century

In the United States for many years, the Courts, Congress and the Commission have been successful in building and maintaining separate regulatory schema for broadcasting/cable and common carriers. As importantly, technology had not advanced to the level of sophistication we are currently enjoying. Today, terrestrial broadcasting, cable and telephone are mature industries, each with its own competitive muscle. Furthermore, cable television and telephone companies are each capable of providing each other's primary service.

I have used the case study of HDTV as an example to illustrate the technical and legal hurdles each industry must overcome to provide this service. As we move into the next century, technology will continue to advance causing further evaluation of regulations governing each industry. More importantly, the advances in technology and reevaluation of our regulations will continue to blur the distinctions currently separating broadcast, cable and telephone industries. I predict that the U.S. will continue to remove burdensome regulations, thereby allowing the marketplace to thrive. However, the Commission will have a greater responsibility to assure that competition exists, rather than the emergence of monopolies. Where monopolies exist the Commission will have to implement regulations to assure the public interest is protected.

It is seldom that an issue can serve as a coalescing force to cause a thorough evaluation of our regulations and laws; high definition television is one such issue. Never before has one issue triggered such an intense level of communications among broadcasters, cable operators and common carriers. Each service is free to pursue technologies that would allow for the transmission of HDTV signals. In the event of changes in laws that would allow common carriers to provide information services, each service will have to define its own competitive market. It is our belief in competition and a free market that is the thread woven through each of these services as they

attempt to provide a new video service to the public. Such a thread will continue to guide the Commission's regulatory decisions into the 21st century. With all the technological developments, the best in television and telecommunication quality and quanity is yet to come for all progressive nations.