# COMMUNICATIONS FOR IMPROVED QUALITY OF LIFE

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Early in 1970, the Department of Housing and Urban Development, the Federal Communications Commission, the Department of Transportation and the Departments of Commerce and Justice joined to fund a study at the National Academy of Engineering to explore the applications of Communications Technology for improved urban functions and for the creation of a better rural life.

The Academy's Committee on Telecommunications entrusted this task to the Panel on Urban Communications which I chaired.

We have separated our tasks into a number of subpanels: telecommunications applied to Administration and Emergency Services - to Crime Prevention - to Education, Recreation and Cultural Pursuits - to Environmental Factors, and finally a program called "The Cities of the Future". The members, advisors and resource persons serving on our panel, represented the country's top talent in the field of Communications Technology. The fruits of our labors are contained in the National Academy of Engineering's special report of June, 1971 in which we proposed some 19 pilot projects for our federal sponsors.

One of these proposals, based on our Panel's "Cities of the Future" study, is now sponsored by the Department of Housing and Urban Development under contract to Fairfield University. The project, called " The New Rural Society", is now in its third month of operation.

Our study is founded on the thesis that within the last century and a half, science and technology have unwittingly caused an ever increasing rate of change in all aspects of our lives, including growth of population and the depletion of our environmental resources. There is a steadily growing crisis, originating in our tightly packed metropolitan centers, where 80% of our population live on less than 10% of our land. Thus the problems of

the large city are the problems of the nation and the continuing increase of crime and pollution together with the social, health and educational problems inexorably tend to move us towards a catastrophic collapse. The irreversible exhaustion of our environmental resources, which include some of our minerals, fossil fuel, waters, animal life, etc. is closely linked with the stark imbalance of the population distribution. When adding the resultant stress and strain in human life, it becomes essential that science and technology embark immediately on the task of improving significantly the quality of life and to do this within the shortest possible time.

The New Rural Society calls for giving Americans a choice whether to live and work in an urban or in a country environment. As of now such an option is not available and our plan must make it attractive for 100 million Americans in the next 25 years to remain in or move to rural areas. The so-called "new towns" will not accomplish this. They tend to be built too close to metropolitan centers - besides, to absorb 100 million people by the end of this century, a new town would have to be completed every third day.

We have designed a model based on 3,000 existing communities ranging in population from 5,000 to 100,000 people where imaginative planning and a controlled rate of growth could create superior living conditions for about one third of the U.S. population. In order for the plan to succeed, we must provide in these 3,000 communities adequate employment, better educational and health services, and in particular social, cultural and entertainment opportunities.

In each of these areas we have found that Communications Technology, imaginatively applied, can make a decisive contribution. Thus, one part of our study deals with business communication systems to induce companies to decentralize their operations into truly rural towns rather than into suburbs. The objective is to eliminate commuting and make it possible for the majority of Americans to walk or bicycle to work.

Our study also concerns itself with the application of Communications Technology towards improved health care and education in rural America. Today, I would like to elaborate on the cultural and recreational needs of the New Rural Society.

Today our largest metropolitan centers offer many cultural and entertainment opportunities, which are available to only a few but could become a crucial requirement for many, if we as a nation are to establish a more uniform distribution of population.

We have the technology to design communication systems so that the citizens of the New Rural Society can see and hear plays, operas, concerts, museum tours, lectures presently available to the relatively small and select audiences in the large urban centers. Several of the communication satellite systems now propsed to the Federal Communications Commission, will be capable of broadcasting to ground receiving installations live programs from Broadway, the Metropolitan Opera, Philharmonic Hall, museums, etc.

Many hundred or even thousands of receiving ground terminals can be provided near the towns, which will grow to become part of the new rural development plan.

These live event programs together with over-the-air TV broadcasts and special cable TV originations could provide hundreds of millions of Americans with an enormous choice of entertainment and cultural enrichment, heretofore unattainable. In order to provide this service for the New Rural Society, a well planned national cable TV system of the highest capacity and technical performance is essential. Fortunately, all this is becoming a reality, but what is still missing, are the satellite communication links which will deliver to every town and every cable TV system in America all the important art, entertainment and cultural offerings of the nation.

Under the New Rural Society plan the majority of the 3,000 or so communities which are to attract people from the large urban centers, would have large TV projection screens installed in existing and new theaters, thereby creating a cultural and entertainment center for the community. Most of the live performances will take place in theaters, operas, auditoriums, etc. where the current commercial TV standards would no longer give satisfactory rendition. Also, the presentation on large theater screens will make it necessary to introduce new high resolution color TV standards suitable for this new service. The improved color TV standards would go beyond the European 625 line service and be suitable also for transmission

over the new cable TV systems. It is the intention of our organization to develop such a system and to work with receiver manufacturers towards creating new dual standard color receivers specially adapted to the cable service. It is logical to assume that in a given community it will be the cable TV operator who will also make the high resolution satellite transmission available both for large screen projection in theaters and for the cable TV subscribers.