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## ABSTRACT

The New Rural Society project concerns itself with the deterioration of America through urban overcrowding and rural depletion. Coupled with experimentation and pilot testing, the study is designed to demonstrate that imaginative application of telecommunication will enable business and government departments to function effectively though their operations remain in big cities. Specifically, the paper discusses how communications technology can considerably improve conditions in employment opportunities; educational services; health care; and social, cultural, and recreational pursuits -- the major reasons for migration from rural areas. It is stated that by the year 2,000, and at the current rate, 2/3 of the people in the United States will live in 12 major urban centers. More than 1/2 of them will be concentrated in 3 megalopolies comprising only a few percent of the country's total land area. The studies reveal that pollution and the incidence of crime per unit population increases with the size of cities. A request for the Rocky Mountain States and their Governors to join the New Rural Society project in establishing a planning and action program is included in the conclusion of this paper. (HBC)



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"The New Rural Society" \*

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I welcome the invitation to participate in this conference for two reasons: first, I am honored to be included among your distinquished speakers; and secondly, because, I feel here, in the hope filled frontier of America's past century, I am afforded an opportunity to present my thoughts concerning a new limitless horizon to be enjoyed during our next century.

What I propose can be translated into reality and is not science fiction. It can be achieved with knowledge and techniques we already possess without spending precious time and resources on new inventions. This conference of distinguished Governors and state officials can make a great contribution to the success of this program.

American courage and ingenuity have built a mighty country, but early this century, we began to tangle up our destiny.

Let us present the problem and the root cause: The desertion of rural communities and the rush to the city by people seeking benefits considered vital to a full life--employment opportunities, cultural advantages, improved health care. This has resulted in the tragic deterioration of America through urban overcrowding and rural depletion.

What I propose is a program for this nation to make the beginning third century by offering people a choice, not now available, whether or not to live and work in attractive rural environments, where all the desired resources are available through technology.

For the past three years, I headed a study at the National Academy of Engineering in Washington. The work has been supported by the government, and the major purpose has been to examine how communications technology can change our present pattern of living and successfully alter the grim picture of our future.

The crisis projected is best illustrated by the rapid deterioration of life in the large metropolitan urban and suburban concentrations where the majority of the nation's population is virtually trapped living on less than 10 percent of the land. By the year 2000, and at the current rate, two-thirds of the people in the United States will live in 12 major urban centers. More than half of them will be concentrated in three megalopolies comprising only a few percent of the country's total land area.

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To quote Huxley: "As I peek into the future, it doesn't work." But we mustn't give up, even if the long-term solution to this problem calls for a total change in our population distribution as well as our life style. The key to this plan lies in new and imaginative applications of existing communications technologies.

Our plan must make it attractive for some 100 million Americans to remain in or move to attractive rural areas. A small step in this direction has been made through the "New Towns", several of which have already been built. But this is not the answer since a new town would have to be completed every third day for the next 30 years. We must move on a much more massive scale which can be accomplished only through the prompt and the planned development of thousands of existing American small towns.

Toward this objective, we have designed a model based on some 3000 existing communities ranging in population from 5,000 to 100,000 people, capable through carefully charted growth to accommodate 100 million people over the next 30 years.

We know that the major ills of the large cities--problems such as crime, poverty, pollution, traffic, health, education, etc.--also exist in small communities, but they are on a much lesser scale and are manageable.

Our studies, for example, reveals that the incidence of crime per unit population increases with the size of cities. The same is true of pollution.

The question we face is: Why do people migrate from rural areas, and why don't urban residents move there?

Here are some of the main reasons:

- Lack of suitable employment opportunities
- . Inadequate educational services
- . Insufficient health care
- . Need for social, cultural and recreational pursuits

In each of these areas we found that communications technology can improve conditions considerably through new approaches. Take employment for example. A growing number of businesses have moved some of their operations out of big cities but, unfortunately, not much farther than the suburbs. As a result, the metropolitan concentrations now spill beyond the city limits, adding to the overall environmental problem.



It turns out that one major reason why companies do not move greater distances is the fear of inadequate communications between these components.

We, therefore, proposed a study coupled with experimentation and pilot testing to demonstrate that imaginative application of tele-communications will enable business and government departments, separated over wide distances, to function effectively and even derive additional operational advantages.

This study—the first of its kind in the nation—is now underway. The project, entitled "The New Rural Society", is funded by the United States Department of Housing and Urban Development, and the National Science Foundation is sponsoring a portion of the project which enables a number of states to be informed through periodic briefings.

Through the cooperation of the Governor of Connecticut, a representative area was designated as the center of the project where now a joint planning effort is underway with community leaders and regional planners to study and implement methods for establishing the New Rural Society. This section of Connecticut is called the Windham Planning Region, located in the Northeastern portion of the State. It is composed of 10 townships with 65,000 people occupying 300 square miles. Windham is an undeveloped region from an economic standpoint, and averages 200 people per square mile--which is less than one-third the mean population density of Connecticut.

The first phase of this study comprises a thorough analysis of current office practices and procedures. We will substitute these procedures with special communication links and equipment for experimenting in back-to-back studios simulating actual transmission systems. Next, actual two-way point-to-point broadbank circuits will be employed, located between the capital of Connecticut, Hartford, and the area designated as the center of our experiments.

We have stated earlier that providing employment choices is important. But we must also ensure that there will be improved health services for the increased population.

The national average of physicia: s per 1,000 people is roughly, one, which is the same for the entire state of Connecticut. But in Windham, the test area, there is approximately one-half physician per 1,000 people. The same holds true for most rural sections of the country. We hope to be able to show that the services of the local physicians and the local county hospital can be extended through the use of paramedical personnel combined with such techniques as mobile teleclinics equipped with two-way, point-to-point microwave communication links for visual, audio and diagnostic use. It is also comtemplated to interconnect the local hospital with one of the large medical centers in Hartford through fixed two-way broadband circuits capable of carrying video, sound and instrumentation signals in both directions. This would provide greater professional challenge for local physicians in Windham through access to complex diagnostic data and equipment as well as to seminars and discussion of special cases.



Access to higher or continuing adult education in rural areas is another paramount requirement. The plan here is to apply the same telecommunications techniques we are developing for business and to link large educational centers with a number of small satellite campuses located in or near the new expanded towns. A small but capable faculty will combine local instruction with full participation in the activities of the distant central university through two-way electronic access so that seminars, lectures and examinations together with data and library access, can create a complete and viable local teaching program. Through existing and the new two-way cable television systems these learning opportunities will be brought to the homes. Also primary and secondary education can be enhanced through cable systems as well as combining these with satellite transmissions.

The development of suitable employment choices, health care and education, still leaves the rural areas isolated from cultural and recreational opportunities existing in the big cities, such as theaters, concerts, museums, lectures, sporting events, etc. To counter this imbalance we propose the design and the implementation of the ENT-SAT ("Entertainment Satellite"). Under this plan, use would be made of the comtemplated domestic satellite communication system serving the entire United States, including Alaska. The ENT-SAT would relay live performances from Broadway theaters, from operas, concerts, sports events, political, religious and educational meetings, to all cities and towns in America. Because this service requires higher quality television, new standards are under development giving us the best color television system in the world.

The local cable franchise holder could receive the ENT-SAT signals and present the live programs to the community on a subscription basis, in two forms: in existing or in special theaters, using large screen high-resolution television projection equipment, and also over the local cable television system having special broadband channels suitable for the high-resolution television signals.

Let us now examine how the New Rural Society program will influence the consumption of our non-replenishible resources. Regarding oil: at the current rate of consumption, by 1985 fifty percent of our oil will have to be imported from foreign countries. I need not elaborate on the consequences.

Under the New Rural Society Plan, living and working in the same community will save large amounts of gasoline and only generate negligible amounts of pollutants, because there will be little or no need to commute. People must be encouraged to go on foot, to use bicycles, small automobiles and small delivery vehicles. To accomplish such radical changes in our life style, a massive process of education will be required in order for every American to realize that what is at stake is the world of our children and grandchildren.



Regarding electric power, the generation of huge amounts of electric energy for our large cities is bordering on a national crisis. The use of electricity per household has almost doubled during the past 10 years and to a large extent urban life is the culprit. In rural areas, there is less need for air-conditioning and there will be no huge building complexes consuming large amounts of electric power for cooling, elevators, light and other services. As an example, New York City's newest skyscraper, the "World Trade Center", consumes as much electricity as a city of 120,000 people.

A new living pattern, centered around many smaller towns would permit other means of producing electricity. For example, there exists now a coal-to-gas conversion method, using strip-mined coal, which is our most abundant source of energy. The sulphur dioxide pollutants are eliminated in the gas conversion process. This type of plant is particularly suitable for smaller units--towns up to 200,000 inhabitants.

We have seen that in order to live through the next centuries as a civilized nation, many of the required changes in our way of life will have to be radical, will require a redirection of technology, and need a great deal of education. But time is short and we cannot invent, we must innovate and move now!

Finally, looking at the six beautiful states, forming the Federation here convened, we see a total area of more than half a billion acres with a population density of only 12 people per square mile, which is one-fifth of the national average.

Here is an opportunity for planning on a grand scale-- for the six states together, as a unit. Virtually all the techniques and experiences of the New Rural Society project are applicable here:

The rate and kind of industrial and business growth -

The places where this should or shouldn't occur -

The laws needed to maintain proper balance of land use -

The telecommunication services, by satellite, by cable, by microwave, which will enhance educational, health and cultural services -

and many other factors which compose the New Rural Society Project.

Such issues as multi-lingual instruction and greater stability for the migratory workers must also be considered for this area.



The Connecticut based New Rural Society study deals with conditions typical of the eastern seaboard - a high density, urbanized population pattern and the resultant problems. In order to apply the study to the entire nation, we have to expand into other regions, typical of other sections of the country.

The six Rocky Mountain States here gathered, are already organized into an effective body with aspirations toward a rewarding life for all its citizens.

Inspired by the setting, the people I have met and the purpose of this meeting, my trip to Idaho changed into a mission. I would like to ask the Federation of Rocky Mountain States and their Governors to join the New Rural Society project as its partners in the West. I offer this invitation with enthusiasm and in the hope that you will accept it. If so, we would promptly establish together a planning and action program and request the Federal Government to enlarge the present scope and grant of the New Rural Society program.

This is my mission. -- Thank you!

