

INFORMATION ACCESS IN RURAL AREAS

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In a perceptive recent analysis, Don Dillman and associates summarize a growing concern among supporters of rural development who see cause for optimism in the dawning of the information age. They say:

The information age, with its microcomputers, facsimile machines, fiber optics, digital telephone switches, and related paraphernalia, has been heralded as promising an end to the tyranny of rural space. Distance from centers of population and commerce has long kept rural people and their businesses at the ends of the production and distribution lines. They were the last to get market information and the least able to deliver goods and services with any speed. Information technologies are seen as having the potential to overcome these problems.

That promise may go unfulfilled, however. The problem of creating rural jobs in today's information-based service economy is as much social and cultural as it is technological and economic. The physical barriers of distance can perhaps be overcome. But without a modernized telecommunications infrastructure and sophisticated workforce, and a wider perspective of markets than just nearby communities, rural jobs and businesses will find little relief. Furthermore, the new technologies offer the opportunity to draw rural jobs to urban areas as well as draw urban jobs to rural areas (Dillman et al., 1989:21).

Consider the implications of some of the key phrases in this assessment - "the tyranny of rural space," "the potential to overcome these problems," the "promise... unfilled," and "rural jobs to urban areas." In my remarks on information access in rural areas, I want to elaborate and build upon these themes and I want to go beyond them some what to suggest an agenda for facing the challenge of the information age in rural areas. I will agree with the assessment that the information era with all its wonderful paraphernalia is a "double-edged sword" for rural communities, one that can cut either way. First, I will comment on some enduring characteristics of rural areas and recent rural trends that create the problems new information technologies

and the new opportunities of the information age might relieve. Second, I want to explore the promise of a better future for rural areas and outline an optimistic scenario of the effects of the new space-shrinking technologies. Third, I will turn to a discussion of threats to rural well being in the information age. Fourth, and finally, I will discuss approaches to meeting this challenge and ways of intervening to resolve the rural crisis that current trends reveal.

Rural Access: The Social Cost of Space

Access to the essential resources for meeting the daily needs of people is the first requisite for maintaining a community and ensuring social well being anywhere, any time. Distance is perhaps the most enduring characteristic of the quality we call "rural," and distance impedes access. Access is essential for well being, and ruralness impedes access; these simple facts form the core of the rural problem, a problem found in virtually all societies and all regions. While there certainly are exceptions to the general pattern, the overall picture, worldwide, is one of relative disadvantage in access to resources associated with ruralness of location.

In modern society, this has always been the case, although in times gone by the drag effect of distance on access perhaps was off-set by other characteristics of rural communities. Relative isolation in small settlements is not so bad when combined with the warmth and security of close-knit family and community networks and with a more or less self-sufficient local economy. Perhaps it was thus in the past. At least that is the image many of us have about life in the country in the "good old days." According to sociological studies in Europe and America early in the twentieth century (Sorokin and Zimmerman, 1929), physical isolation in rural areas often was offset by the cohesion of local social life. One could be in a remote locality and still be embedded in a web of supportive, sustaining relationships. Studies today give a different report on the effects of remoteness. As local residents of virtually all communities have become more dependent on the larger society for meeting many daily needs, and as the ability of local institutions and groups in rural areas to hold the commitments of residents has declined, physical isolation has come to be more closely associated with social isolation than with social cohesion. Isolation is cited,

for example, in recent studies as a possible explanation of the increasingly familiar finding that rural populations have not only high rates of poverty and other material deficits but also high rates of suicide, homicide and psychological distress (Wilkinson, 1984). The social cost of rural space is high and appears to be increasing, not subsiding, with the passage of time.

Three trends during the 1980s call attention to persisting problems of rural communities in an urban-industrial society. First, after a brief turnaround in the 1970s, migration patterns have restored the dominant historical trend of greater urban than rural growth. While population growth is only one characteristic of a community, the rural-urban difference on this characteristic is perhaps the best single indication of the relative abilities of different types of communities to meet the daily needs of their residents. Second, as the promise of a sustained turnaround faded in the late 1970s, familiar rural problems began to surface again in research findings and news reports: problems of poverty and underemployment; a crisis in the financing of agriculture; inadequate services, a deteriorating rural infrastructure for development; social and economic inequality; and problems of the family and community cohesion. Third, even as the evidence of rural problems has accumulated, observers in Europe and America have noted an absence of sustained efforts to understand and eradicate the causes of these problems at the national level. Many rural people and communities are being left behind in the 1980s, just as they were said to have been left behind in reports on rural poverty and other problems before the 1970s (Wilkinson, 1986; Commission of the European Communities, 1988).

Historically, people and communities in rural areas of modern societies have been left behind because rapid economic growth has been concentrated in large industrial cities. Displaced by advances in agricultural technology, rural workers and their families migrated to cities by the hundreds of thousands to take advantage of industrial jobs; and those who could not do so, literally were "left behind." As national economies became predominantly industrial and world culture became essentially urban, many small communities found themselves at a disadvantage in meeting needs of residents. A small, localized economy no longer could be self-sufficient. Larger numbers would be needed to justify and sustain modern

community services and facilities. Residents would have to commute to distant centers for jobs and services, or they would have to make do with the lesser resources available in the rural setting. Sparsity of settlement and distance from the centers of economic development and power produced a rural condition that the sociologist/economist Carl Kraenzel (1980) labeled "the social cost of space."

The phase of concentrated growth of large cities was followed, beginning in the 1950s, by a period of metropolitan expansion, as the economic and political power of the centers began to be used to organize and manipulate resources in the surrounding countryside. Suburban development of housing, satellite developments in industry, and other aspects of this expansion drew many small towns and rural areas directly into large urban fields. Beyond these fields, the cost of space became even greater for many rural residents.

The cost of rural space has a number of dimensions (Wilkinson 1986). One is an unstable economic base, as shown by recent events in agriculture and in the manufacturing industries that have developed in rural areas. Another is the limited range of services that can be supported in public or private sectors. In addition there is evidence that rurality often depresses the ability of a local population to organize for effective collective action, in contrast to the image of close-knit rural communities acting together for the common good in times past.

Another factor is the tendency for profit-seeking firms to move into and out of rural areas, taking many of the benefits of development with them but leaving many of the costs of development to be endured by the community. Although exploitation of rural resources has a long history (e.g., in mining and lumbering areas), new technologies can greatly increase the potential for outside manipulation to have devastating effects on rural well-being.

Rural dependency on increasingly mobile outside investments has several more or less obvious consequences. As the investments come and go (in search of profits in national or world systems), so do the jobs and incomes of rural workers. Local economic instability can result from concentration of a single sector of a production process in a given rural community, a common practice among multi-site firms. This makes the community vulnerable to shifts in the importance of the sector in the

firm's overall operation; and it limits the diversity--and thus the stability--of the local economic base. Dependency also increases the probability that profits will leave the community quickly. In many rural areas, the past two decades have been marked by dramatic and potentially disruptive boom-and-bust cycles associated with highly mobile industrial investments (e.g., in mining).

The decade of the 1980s, by almost any standard of evaluation, in fact has been an unmitigated disaster for many rural communities around the world. In industrial nations the decade began with a deep economic recession, one with more harmful effects in rural settlements than in urban ones overall, and the long slow recovery over the decade has been longer and slower in the countryside than in the cities. The result is that in the 1980s, rural people have experienced one of the longest and most severe economic declines relative to urban people in modern history. Upheavals in agriculture, forestry and mining, instability in rural manufacturing, a rural lag in capturing the benefits of the shift to a service economy and a return to a rate of migration from rural areas to cities at the level of the 1960s characterize this decade. The poverty gap between rural and urban portions of the population is high, and since 1980 that gap has increased. For example, in the United States the rural poverty rate is now one and one-half times the urban rate (Brown and Deavers, 1987). It is obvious from these and many other trends that rural communities are not catching up; indeed, on many indicators of economic and social well being rural communities overall are falling even further behind in the 1980s than in many previous decades. Some observers, in fact (e.g., Parker et al., 1989:3), argue that crisis intervention will be required if rural areas are to survive economically and socially in the 1990s.

The Promise of the Information Age

Clearly, the potential for a "new deal," a new "shake" for rural areas is at hand in the information age.

What is this information age? As historians and anthropologists will attest, there is little new about the importance of information to human survival and adaptability. We have been substituting information for labor, and other sources of

power, even for capital, over most of the course of evolution of modern society. What is new, according to leading students of the information age, is the speed with which this substitution is now occurring.

According to Dillman (1985), the essence of the information age is massive increases in the following:

1. The speed by which communication can occur between one place and another.
2. The amount of information that can be transmitted from one point to another.
3. The fidelity (quality) of long distance communications.
4. Miniaturization of computer and communication technologies.
5. The capability to send as well as receive information from virtually any place on earth.
6. The range of people and places with which we can have contact.
7. The relative importance of telecommunicated transmissions compared to transactions requiring physical movement as determinants of people's behavior.
8. The ability to select from large data banks the precise information needed for making decisions.
9. The ability through artificial intelligence to conceptualize problems and possible solutions in ways beyond individual human capabilities.
10. The relative importance of information versus labor and energy in production of goods and services.
11. The rate of potential change in who interacts with whom for what purpose.

In many ways, the information age is already here and its effects are already being noticed by us all. The fact that the essence of this phenomenon is the speed of change, however, means that the full impact is yet to come--especially in rural communities where the pace of change typically is slower than in more urbanized

areas.

From the standpoint of rural well being, what these developments promise is the capacity to reduce or even to eliminate the cost of rural space. New telecommunications developments could reduce the economic cost of space, that is, the cost of delivery of goods and services and the cost of acquiring the information necessary to survive economically in today's world markets. Similarly the information age can reduce the social cost of space by creating new structures of social interaction and breaking up the "place chains" that bind people to specific localities. New developments in transportation and long-distance communications make it possible for rural people to participate in the mainstream of modern urban society without giving up the benefits of living in rural areas. In other words, the information age promises to relieve the age-old effects of the most enduring source of rural problems, the effects of distance on access to resources for meeting the needs of people.

New technologies -- personal computers, fiber optics, digital switching, integrated networks for sending voice and video images on the same telephone lines, facsimile transmission, cable television, inexpensive narrow cast television delivery of specific programs and data, satellite linkages, electronic mail, electronic bulletin boards, instant market and weather information, and many others (Cleveland, 1985)-- coupled with new organizations and new organizational strategies (e.g. the information-age library) could transform rural communities from isolated outposts in the mass society into highly advantageous sites for living in the information society.

Indeed a new rural economy has been emerging in recent years and some observers see in contemporary trends the potential for at least some of the promised benefits of the information age to come to fruition in rural areas in the 1990's. As Blakely and Bradshaw (1985) point out, the days of rural reliance exclusively on traditional industries such as agriculture and mining and related natural-resource based industries, has long since ended, and the successor to these -- manufacturing, the dominant rural employer since the 1950's -- is giving ground rapidly to service employment and employment in information-based industries. The future, they say, can be bright for rural areas because economic power no longer depends on either

natural resources or concentration of labor, but on human resources. Human skill and creative human organization, not location or natural endowments, will determine the distribution of well being in the future, from this optimistic viewpoint.

Parker et al. (1989), in a recent report on rural telecommunications needs in rural areas, comment on "a new web of telecommunication dependencies" altering employment opportunities in the countryside and the ways rural businesses and service organizations operate:

As rural economic activities and social services become more information intensive, they rely more heavily on access to high quality telecommunications facilities. Some businesses now simply cannot operate without these telecommunications links. For example, when a pharmaceutical wholesaler began requiring retailers to place orders via online computers rather than via mail or telephone, it put new pressure on rural pharmacies to install computer modems. Similarly, a machinery dealer was required by his manufacture/distributor to install a direct computer connection at a cost of tens of thousands of dollars.

Most striking, as many observers note, is the overall breadth of change now occurring in virtually all areas of business and related social life in small towns and rural areas.

The new rural economy is being molded by fundamental changes in the society at large that substantially reduce the influence of spatial location on many economically important activities. Examples abound in recent literature (e.g. Dillman et al., 1989). Job creation has become uncoupled from natural resource industries. The proportion of the labor force directly involved in manufacturing has declined sharply in modern societies over the past half century and is likely to decline even more in the future. By the end of the century, as many as two thirds of American and European workers are expected to be in knowledge, information and education jobs--writing software, answering 800 telephone numbers, and processing various forms such as insurance claims and bills for goods, activities that can be carried on almost anywhere, rural or urban, in the information age. New jobs are increasingly being created by small, rather than large organizations. In fact, large organizations worldwide are in a period of downsizing, contracting many aspects of their production and other operations to smaller units, located far from headquarters. Dillman et al.

(1989) report that forty percent of equipment expenditures in the United States now go to telecommunications and computer equipment compared to 20 percent ten years ago and that by 1995, 9 out of 10 white-collar jobs are expected to involve a computer work station. There is no good reason why this equipment and these jobs would be concentrated in cities, and indeed they are not being concentrated in the centers of cities, as in the past, but in outlying areas instead. With these trends, it does not take much argument to convince one that the opportunity is at hand to reduce, and perhaps even to do away with that venerable rural problem, the social cost of space.

Consider, if you will, the vision of a rural-urban society where the social cost of space is not a significant factor in well being, a society in which rural and urban people alike would have access to good jobs, services, equality and community stability. The problems associated with urban scale are but the other face of the social cost of rural space. The information age holds the promise of a better distribution of population toward an optimal mix of the benefits of scale and smallness, and from this a better society could be developed for all.

Unfortunately, however, nothing in the current trends and nothing about the new technologies assure us that this promise will be realized. The odds are at least equally good that the information age will cause rural communities to fall more behind in the future than in the past on indicators of economic and social well being. We must turn the sword over, as it were, to consider the threat to rural well being posed by this wonderful thing, the information age.

The Threat of the Information Age

The threat to rural well being in the information age has several parameters. There are rural problems that impede rural participation in the almost revolutionary changes of this era, such as (see Dillman et al., 1989) the problems of inadequate rural telecommunications, inadequate rural organization and rural reluctance to embrace rapid changes; and there is the growing threat of manipulation and exploitation of rural resources (Wilkinson, 1989). These threats dampen optimism that the new space-shrinking technologies will close the gap in well being between rural and urban settlements in modern societies.

First, the inadequacy of rural telecommunications is well documented in recent literature (Parker et al., 1989) although reasons for this inadequacy deserve much more study than received, especially in the social sciences. Rural residents, businesses and groups have less access than their urban neighbors to personal computers, fiber optic lines, digital switches and the other items that comprise the basic technology of the information age. Party lines are common in rural telephone networks, but party lines will not accommodate modems, fax, or cellular (mobile) phones. Moreover, rural networks tend to have old and outdated equipment and connections; and even with these, a call to the nearest town often requires payment of a long-distance charge. It is quite clear that new information technologies and systems are not being deployed as rapidly in rural areas as in urban areas.

Second, there are problems of rural organization. Ruralness depresses the probability that specialized organizations will form in a local population to meet special needs or to solve special problems. Specialized occupations and groups are needed to take full advantage of rural opportunities in the information age. Moreover, the new linkages between individuals and information sources in the larger society could weaken local relationships. Local businesses could suffer, for example, if goods and services are exchanged directly through such linkages with no role for local firms or groups. The potential for mobilizing for collective action at the local level also could suffer as a result of strong but fragmented ties of individuals and groups to the outside. Such problems in local social organization reduce the potential to take advantage of rural opportunities in the information age.

Third, there are problems of rural acceptance of new information technologies and of the new social patterns they encourage and demand. Traditional rural resistance to change is well known, and the tendency for innovations to develop more often in heterogeneous urban settings than in relatively homogeneous rural populations is easily understood. Moreover, there is the danger that rural education will lag behind urban education in teaching the technical skills and in building the global awareness necessary for full participation in the information age.

Fourth, there is the issue of exploitation of rural resources: new information technologies for whom? Whose interests drive these new developments? It is

apparent that much of the direction of the course of social change in rural areas responds not to the needs of rural communities but to the interests of urban-based investors who want to profit from rural resources. The information society speeds the potential flow of capital into and out of particular areas. This means jobs are mobile; they come and go with investment decisions and management decisions that have little if anything to do with protection or enhancement of rural well being (see Wilkinson, 1989). The result can be rural dependency, instability of rural community economies and continued rural underdevelopment -- depending upon whose interests are considered as new information technologies are deployed.

These threats cast a cloud of doubt over the rural promise of the information age. They underline the possibility, and perhaps the probability, that rural areas will fall behind even more in the information age than in the past. This is an ominous prospect because the social cost of falling behind now, given the speed of change and the enormous power of information in years ahead, can be much greater than in the past.

Meeting the Challenge

What would it take to ensure that the promise of the information age will be realized in rural areas? Parker et al. (1989) focus on telecommunications policy. Government, they say (1989:xii), should:

Encourage rural telephone carriers to provide affordable access to telecommunications and information services comparable to those available in urban areas.

Specifically, . . . policy should strive to:

1. Make voice telephone service available to everyone.
2. Make single-party access to the public switched telephone network available to everyone.
3. Improve the quality of telephone service sufficiently to allow rapid and reliable transmission of facsimile documents and data.
4. Provide rural telephone users with equal access to competitive long distance carriers.

5. Provide rural telephone users with local access to value-added data networks.
6. Provide 911 emergency service with automatic number identification in rural areas.
7. Expand mobile (cellular) telephone service.
8. Make available touch tone and custom calling services, including such services as three-way calling, call forwarding and call waiting.
9. Make voice messaging services available via local phone calls.
10. Help rural telephone carriers to provide the telecommunications and information services that become generally available in urban areas.

These are among the prime technical requirements, but there are others. In a broad sense, the rural problem of the information age is less of a technical one than a political one. Intervention obviously is needed to protect rural interests in the information age and to develop rural skills and organization to make effective use of the new technologies.

Building rural capacity and organization for the information age will require new and expanded roles for some established rural institutions. Extension education, for example, can play a crucial role in the future by interpreting and giving local utility to the massive body of information on virtually all facets of rural life now available from national and international sources. Schools in rural areas must meet the challenge of teaching new technical skills and increasing the awareness of people of the worldwide linkages that affect their lives. Libraries can be, and in my opinion they should be, the key nodes in community-based strategies to take advantage of opportunities in the information age. This means these old institutions--extension, the schools and libraries--must move out of the fringe position they often occupy in community life and into the center of political and economic decision making. Certainly, this is a formidable task, and the means of financing expanded roles of these institutions will be hard to find. The alternative, however, if such roles are not expanded by community-based and community-oriented institutions, is that they will be bypassed and ignored as individuals and special-interest groups articulate their

own linkages to outside sources of the information they need. Local organizations must be in the lead if the promise and not the threat of the information age is to be realized in rural areas.

The rural crisis in the information age is not something in the future to be faced at our leisure; it is here upon us. A crisis, by definition, is a turning point, a time of uncertainty and anxiety but also a time of great opportunity. Meeting this crisis requires purposive intervention, otherwise extant trends will likely produce a decrease rather than an increase in the well being of people in rural areas. Intervention at many levels--in policy, in practice and in science--will be needed to secure the benefits of the information age for the rural communities which are now being "left behind" once again in an increasingly urban world.

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