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# TELECOMMUNICATIONS TOWARD 2000

## ARE RURAL CANADIANS GETTING THEIR FAIR SHARE?



with funding by Consumer and Corporate Affairs Canada

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## ARE RURAL CANADIANS GETTING THEIR FAIR SHARE?





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with funding by Consumer and Corporate Affairs Canada

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# INTRODUCTION

# INTRODUCTION

The Public Interest Advocacy Centre has been heavily involved in telecommunications matters on behalf of a wide range of consumer groups since 1976. During the 1980s, PIAC represented a number of northern aboriginal organizations in proceedings on the provision of telecommunications services in the north. As noted in its policy paper, Northern Consumers and Telecommunications Policy (1989), PIAC argued for specific measures to bring the price of basic telephone service in the north more closely in line with levels in the south of Canada.

More recently, PIAC represented rural Canadians, through the organization Rural Dignity of Canada, in the CRTC proceeding on long distance competition. Through this relationship, it became clear to PIAC that the interests of rural Canadians were too often ignored and, perhaps even more often, unclear to service providers, regulators and policy makers. The idea of a survey arose in response to this problem.

In 1991, Consumer and Corporate Affairs Canada generously agreed to fund such a survey, such that this report was made possible. The survey was carried out by PIAC in January 1992. Chapter IV discusses the results of this survey.

Canadian public policy has long been concerned with reducing regional disparities; much public funding has gone into projects designed to assist in the economic development of particular regions of the country. However, economic disparities are not limited to specific regions; they also exist as between rural and urban communities throughout the country.

In the emerging information age, telecommunications is playing, and will continue to play, an ever-increasingly important role in the lives of both individuals and businesses. To the extent that it can alleviate harmful regional disparities and the degeneration of rural communities, the improvement of telecommunications infrastructure should be encouraged.

It is clear that good quality telecommunications links can and do make a difference to rural economies. In order for such benefits to be fully realized, however, public funding may be needed to finance new infrastructure and associated education and training of potential beneficiaries. The rationale for such funding is that, while individuals certainly stand to gain from it, significant direct and indirect benefits will accrue to the economy as a whole.

This paper seeks to establish the basis for a public policy of rural telecommunications development, especially in light of the tendency for competition to focus on more profitable urban centres. This paper also seeks to identify the particular interests of rural telephone subscribers, and to determine how well the existing providers are meeting those needs.

# A PORTRAIT OF RURAL CANADA

# CHAPTER ONE

## A PORTRAIT OF RURAL CANADA

Just under one quarter (approximately 6 million) of Canadians live in rural areas.[1] While the absolute population in rural Canada has grown almost three-fold since 1851, the major trend has been one of urbanization. In 1851, 87% of Canadians lived in rural areas, and just 13% lived in urban centres. Canada's transformation from a rural to an urban society took place during the 1920's, but the process of urbanization continued steadily until 1971, since when the proportion of Canadians living in rural areas has been relatively constant, at approximately 24%.[2]

Rural population growth in Canada has occurred largely in those rural areas adjacent to urban cores. Between 1981 and 1986, Statistics Canada reported a 10.9% rate of growth of population in these rural fringe areas (179,179), versus a 1.2% rate of growth in rural areas outside urban-centred regions (50,021).[3] A similar disparity was noted during 1976-1981. Thus, while the absolute population increase between 1981 and 1986 was greatest in urban areas (736,950 vs. 229,200 for rural areas), the rate of population growth was most pronounced in the rural (and urban) fringes of urbanized cores.

The resultant shift in rural population composition is significant insofar as it indicates a change in the occupation characteristics (and therefore the needs and demands) of rural Canadians. For example, it is likely that a high proportion of the new rural residents work in the adjacent urban cores.

This inference is supported by the fact that, in recent years at least, much of the growth has occurred among the non-farm population living in the rural fringes of large urban centres.[4] Indeed, the number of people living on farms has declined sharply since 1931 (when statistics were first compiled on the farm population), while the non-farm population has

[1] Statistics Canada, 1986 Census, Cat. 98-120, p.20; 1991 data: Cat. 93-301 Table 8.

[2] Biggs and Bollman, "Urbanization in Canada", Canadian Social Trends (Statistics Canada, Summer 1991), p.24.

[3] Statistics Canada 1986 Census; Cat. 98-120, pp.20-21.

[4] Biggs and Bollman, supra fn.2, p.25.

shown an equally strong rise. By 1986, the rural non-farm population accounted for 85% of rural Canadians, up from 32% in 1931.[5]

WHAT IS "RURAL"?

**Statistics Canada** defines as "rural" as those areas lying outside urban areas. "Urban" is defined by Statistics Canada as:

> an area which has attained a population concentration of at least 1,000, and a population density of at least 400 per square kilometre, at the previous census. Urban areas separated by gaps of less than two kilometres are combined to form a single urban area.

Thus, all territory within Canada that does not fall within this definition is considered "rural" by Statistics Canada.

A surprisingly high percentage of rural residents are under the age of 20, while a correspondingly low percentage are adults aged 20 - 34, or seniors over 65 years of age.[6] This implies that rural residents tend to be families with children. Indeed, the statistics on marital status support such a thesis: a slightly higher percentage of rural people are married (50% vs. 49% for urban dwellers), and a significantly lower proportion are single (18.7% vs. 22% in urban areas).[7]

Looked at from a different perspective, 24.6% of married Canadians live in rural areas, while only 16.5% of single, separated, divorced or widowed Canadians do so. This compares with the 23.5% of the general Canadian population living in rural areas.[8]

[5] Biggs and Bollman, supra fn.2, pp.25-26. No other occupational breakdown of the rural population is available from Statistics Canada.

[6] Statistics Canada 1986 Census, Cat. 94-129, p.1.

[7] Ibid.

[8] Ibid.

Rural households tend to be larger than urban households (3.1 vs. 2.7 persons/household). While only 21% of two-person families in private households are rural-based, 32.1% of families with five or more members live in rural areas.[9]

Other statistics relevant to telecommunications needs include dwelling types and household facilities. The vast majority of occupied private dwellings in rural areas (89%) are single detached houses.[10] In their homes, 98.8% of rural Canadians have at least one radio (78.5% have two or more), 98.8% have at least one television set, 26.9% have cable television, and 12.9% have home computers.[11]

As with radios and television sets, almost all rural Canadians have a telephone (98.1%). However, unlike ownership of radios and television sets, telephone penetration rates diminish with income: only 93.8% of those households with incomes under $10,000 had a telephone. The reason for this is obvious: there are no monthly service charges for radio and television users. It would appear from these statistics that some lower income people cannot afford to pay for basic telephone service.

This, then, is rural Canada.

[9] Ibid., p.3.

[10] Ibid., p.3.

[11] Statistics Canada, Household Facilities by Income and Other Characteristics - 1990, Cat. 13-218, Table 2.4.

# TELECOMMUNICATIONS AND RURAL DEVELOPMENT

# CHAPTER TWO

## TELECOMMUNICATIONS AND RURAL DEVELOPMENT

### The New Rural Economy

When they think of rural Canada (or indeed Canada as a whole), many people think of farms, forests, isolated mining communities or fishing villages. While it is true that economy of Canada has traditionally been dependent on resource extraction industries such as agriculture, forestry, mining and fishing, this is changing.

Prior to the second world war, agriculture in particular was the single most important industry for Canadians, accounting for 32.8% of the entire labour force in 1921.[12] By 1941, this figure had dropped to 25.2%, still large enough to maintain the predominant status of farming as an occupation in Canada. However, the decline in importance of agriculture continued steadily, to the point where only 3% of the Canadian labour force in 1991 cited farming as their occupation.[13]

Other primary industries have also experienced a steady decline in importance, as measured by labour force involvement. Taken together, forestry, mining and fishing accounted for only 2% of the Canadian labour force in 1991, down from 5.5% in 1951.[14]

Meanwhile, the proportion of the labour force in the service sector has more than doubled, from 15.6% in 1951 to 34.8% in 1991.[15] Since World War II, service industries have consistently outperformed all other sectors in terms of growth of labour force, showing sustained labour force growth rates of over 100% in some cases.[16] (In contrast, agriculture has consistently rated among the slowest growing sectors of activity, with negative rates of growth of labour force).

When this dramatic shift in composition of the labour force is combined with the previously noted demographic trends (high rates of growth in the rural fringes of large urban centres), it becomes clear that the face of rural Canada has changed. No longer are we dealing with

[12] Canada Yearbook, 1929, p.212.

[13] See Table 2A.

[14] See Table 2A.

[15] See Table 2A.

[16] See Table 2B.

a farm-based economy; rather, rural Canadians are engaged in a wide variety of occupations, many of which rely upon high quality telecommunications links to customers or suppliers.

TABLE 2A
Labour Force, by Selected Industrial Sector (percentage)[1]

| | Agriculture | Other Primary[2] | Finance, Insurance & Real Estate | Service | All Other | Total |
|---|---|---|---|---|---|---|
| 1951 | 15.6 | 5.5 | 2.7 | 15.6 | 60.6 | 100 |
| 1961 | 9.9 | 4.1 | 3.7 | 20.5 | 61.8 | 100 |
| 1971 | 5.8 | 3.0 | 4.5 | 26.1 | 60.6 | 100 |
| 1981 | 4.1 | 3.0 | 5.3 | 27.8 | 59.8 | 100 |
| 1991[3] | 3.0 | 2.4 | 5.8 | 34.8 | 54.0 | 100 |

[1] Statistics Canada, Labour Force Annual Averages, 1991, Cat.71-220, Table 9.

[2] mining, forestry, fishing.

[3] Statistics Canada, Trends in Labour Market Employment, 1951-1984 (1986), Cat.89-507, Table B1.

TABLE 2B
Rate of Growth of Labour Force, by Selected Sectors (percentages)

| | 1951-61 | 1961-71 | 1971-81 |
|---|---|---|---|
| Agriculture | -22.6 | -21.5 | -1.6 |
| Business Services & Other Services | 98.5 | 112.0 | 105.7 |
| Financial Institutions | 62.6 | 74.6 | 63.7 |
| Medical & Social Services | 79.1 | 76.7 | 56.2 |

Statistics Canada, Trends in Labour Market Employment 1951-84 (1986), Cat.89-507, Table 2.

The Information Age: Implications for Telecommunications

Along with a marked shift in the occupational make-up of the Canadian labour force is a more profound transformation: the increasing importance of information as a commodity in *all* industries and economic sectors. We are not simply replacing resource-based activities by information-based ones; rather, agriculture, primary industry and industrial production are all becoming increasingly "informationalized". In so doing, they are becoming far more productive, requiring less human labour to produce the same quantity of goods.

The Report of the Advisory Committee on a Telecommunications Strategy for the Province of Ontario[17] cites two submissions emphasizing this point. The mining town of Atikokan in northwest Ontario emphasized the importance of telecommunications infrastructure to single industry or resource-based communities, noting that competitive advantage no longer resides, necessarily, where the natural resource or capital resides. The Ontario Corn Producers' Association emphasized the importance of telecommunications to agriculture.

Governments, industries, and workers everywhere are recognizing and attempting to take advantage of this shift toward a knowledge-based economy. While we can only speculate about the exact shape that the post-industrial economy will take, it is becoming clear that one of its foundations will be information technology.

> Information systems will become the setting, or the context, in which people live out more and more aspects of their lives. Locally and globally, they will become the medium through which and in which people do their work, and conduct their affairs with government departments, banks, and even libraries, book stores, educational institutions, and film-video distribution centres.[18]

The implications of this "information revolution" for telecommunication providers and regulators, as well as ordinary citizens, are profound. What used to be required in the way of telecommunications services for full social participation is rapidly changing; no longer is a rotary dial telephone set connected to the public network adequate. As the telephone is used more and more for business, community organization, personal errands and social intercourse, as well as emergencies, individual line service becomes essential. As businesses turn increasingly to automated answering systems, digital technology and touch tone

[17] Telecommunications: Enabling Ontario's Future, The Report of the Advisory Committee on a Telecommunications Strategy for the Province of Ontario, (Ministry of Culture and Communications; August, 1992), p.26.

[18] Telecommunications: Enabling Ontario's Future; Ibid., p.22. See also Serafini and Andrieu, The Information Revolution and its Implications for Canada (Supply & Services Canada, 1981); Science Council of Canada, Planning Now for an Information Society (Canada, 1982); A. Cordell, The Uneasy Eighties: The Transition to an Information Society (Canada, 1985); Communications Canada, Communications for the 21st Century: Media and Message in the Information Age (Supply & Services, 1987).

telephone sets become necessary to access information. This is at least as true for rural areas as it is for urban ones. Yet, rural areas are almost always the last to be upgraded, or to receive new services.

> The defining characteristic of the "information age" is the central importance of communication and information in the activities of daily life.
>
> > The opportunity for people to participate in economic, political, and cultural life depends on their availability to access and use communication and information services. Individuals need skills and tools to locate the communication pathways, information, and audiences in a timely fashion and in an appropriate form. Unequal access to communication resources leads to unequal advantages, and ultimately to inequalities in social and economic opportunities.[19]

In order to succeed (indeed to survive) in this new age, businesses and organizations must use computers and telecommunications to improve productivity, customer relations, supplier and distributor communications, and to broaden the range of services they offer. This goes for both the goods-producing and service sectors of the economy.

Retail businesses are finding it necessary, for example, to install computer modems in order to place orders with their suppliers. In order to compete with their urban counterparts, rural retail and manufacturing businesses must be able to respond to customer demand immediately: they must be able to send and receive faxed messages, communicate by computer link with related businesses, and obtain daily access to contract tenders.[20]

Farmers are relying more and more on computer links to obtain specialized, up-to-date information on commodities, weather and international prices. As well, rural health and education facilities are making increasing use of telecommunications to gain access to expertise in urban areas.[21]

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[19] USA Congress, Office of Technology Assessment, Critical Connections: Communications for the Future (Washington DC: US Government Printing Office, 1990), p.10; as quoted by Barbara O'Connor, Update of the Alliance for Public Technology's Information Age Agenda: The Telecommunications Services Platform: Infrastructure for a Technology Rich Environment, Alliance for Public Technology (November 27, 1991), p.6.

[20] Parker et al, Rural America in the Information Age: Telecommunications Policy for Rural Development (The Aspen Institute, 1989), pp.36-45.

[21] Parker et al, Ibid., pp.45-47; William Fulton, "Getting the Wire to the Sticks", Governing (Congressional Quarterly Inc.; August 1989), p.34.

As businesses and social services become more information intensive, they require access to better quality and more sophisticated telecommunications facilities.

Services, more than any other sector of the rural economy, are information-based. Indeed, it is expected that, by 1995, nine out of ten white-collar workers in the USA will be computer-equipped.[22] If, as is likely, services continue to be the dominant source of employment in rural as well as urban communities, technologies that enhance the communication of information will be needed as much in rural as in urban areas.

## Telecommunications as a Tool of Rural Development

Plain old telephone service (POTS, as it has become known) continues to provide rural areas with important linkages to emergency assistance, government services and members of the community. But the use of telephones and related technology for other purposes, such as price and weather information, purchase orders and reports has tremendous potential to enhance productivity and to broaden the economic base of rural areas. Rural development experts therefore advocate the treatment of telecommunications infrastructure as vital to rural development.[23]

Indeed, some go so far as to advocate universal access to a sophisticated telecommunications system which supports electronic messaging, informational services, transactional services and text/voice or language translations.[24]

Parker et al, in their thorough examination of telecommunications as a tool of rural development, confidently conclude that:

(1) Investment in telecommunications contributes to economic growth.
(2) Both residential and business telephones contribute to economic growth.
(3) The indirect benefits of telecommunications generally greatly exceed the revenues generated by the telecommunications network.
(4) Rural and remote areas where distances are greater and telephone penetration is generally lower may benefit most from telecommunications investment.
(5) Telecommunications acts as a complement in the rural development process; that is, other conditions must also exist for telecommunications to yield maximum development benefits.

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[22] Parker et al, supra fn.21, p.41.

[23] Parker et al, supra fn.21, ch.3.

[24] Barbara O'Connor, supra fn.20.

(6) Use of telecommunications can improve the quality and accessibility of education, health care and other social services.
(7) Telecommunications can help a wide range of rural businesses and organizations improve productivity, boost product quality, provide more efficient services, and reduce costs.
(8) Telecommunications can foster a sense of community and strengthen cultural identity, which contribute to development in intangible but important ways.[25]

One difficulty for rural economic planners is the diversity of economic activity, making policies aimed at tourism, agriculture, manufacturing or any other sector very limited in overall effect. A development policy based on improving telecommunications avoids this problem, since virtually all economic activity can benefit from an improved telecommunications infrastructure.

(a) Business Opportunities

While there is already demand from rural areas for access to more sophisticated telecommunications service, there is at the same time strong justification for anticipating such demand, and improving the telecommunications infrastructure now, before potential business ventures are driven elsewhere.

As noted by Parker et al,

> The development of ... innovative service businesses has been hampered in rural America by inadequate telecommunications: a lack of digital switching, an inability to operate modems on party lines, poor quality telephone line connections which slow data transmission, or the prohibitive costs of having to call long distance to the nearest city in order to connect with a toll-free data network. Revamping rural telecommunications could lay a foundation to expand the information sector of the rural economy.[26]

This sentiment was echoed by Maine's director of planning, in noting that "if you don't have a sound telecommunication system, you can be shut out of economic development

[25] Parker et al, supra fn.21, pp.30-31; see also E. Parker, "Economic and Social Benefits from the Rural Electrification Administration (REA) Telephone Loan Program", Case Study No.16 of the ITU-OECD Project "Telecommunications for Development" (June 1983).

[26] Parker et al, supra fn.21, p.42.

opportunities".[27] Indeed, research indicates that rural small businesses suffer the most from lack of digital switches as well as lack of awareness of how they can benefit from improved telecommunications.[28]

As long as rural telecommunications links are of the same grade as urban ones, there is no reason why information-based businesses such as insurance companies, telemarketers and mail-order houses need to be located in urban areas. If business is conducted by telephone or fax, the physical distance between service-provider and client poses no immediate obstacle; the only relevant factors are the quality of the communications link and the cost of using it.

This fact is of tremendous import to rural development. No longer is distance as great a penalty as it used to be; more important in the new information-based economy are the quality and cost of telecommunications links.

Particularly in the context of convergence between various technologies, most notably telephone, computer and cable television,

> ...the impact of telecommunications is substantial. It enables access to remote databases and other information sources, it enables just-in-time inventory control, it enables the development of marketing networks and permits firms, whether large or small, to have a global reach. It permits researchers to collaborate with colleagues around the world. It extends access to intellectual, cultural and entertainment resources. It breaks down political and economic barriers. Clearly telecommunications and more generally information technology can have substantial transformative effects.[29]

Examples of how telecommunications can boost rural development abound. Parker et al point to a successful insurance company based in rural Minnesota, a cookie company with nationwide sales operating out of a small Utah town, a computer software company with worldwide sales operating from a remote area of Idaho, and a large mail order retailer based in Maine, relying on suppliers from rural areas in northeastern U.S.A.[30]

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[27] Fulton, supra fn.22, p.35.

[28] Frederick Williams, Improving the Telecommunications Infrastructure: Sticks or Carrots?, Presentation to the 23rd Annual Conference of the Institute of Public Utilities (December 1991), pp.3-4.

[29] Ministry of Culture and Communications, supra fn.18, p.23.

[30] Parker et al, Supra fn.21, p.41.

The Ontario Advisory Committee on Telecommunications Strategy point to the "Enterprise Network", a communications and database network set up by the government of Newfoundland and Labrador to promote and support small business start-ups in the province; active governmental promotion of telecommunications-based industries by the governments of New Brunswick and Nova Scotia;[31] the successful attraction by rural communities of such businesses as credit card processing and reporting and steering wheel manufacturing, due partly to high quality and state-of-the-art telecommunications systems.[32] Examples of other successful rural-based industries include telemarketing and processing of student loan applications.[33]

Of course, all these potential benefits will remain unrealized if potential users are not informed of them and trained, where necessary, to take advantage of them. With greater competition in the provision of long distance and other telephone services, telephone companies find they have to cut back on personnel, thus reducing their presence in rural areas as well as their capacity to advise customers on specific business applications.[34] Any strategy to improve telecommunications facilities in rural areas must include an element of effective public education.

Assuming that the cost of doing business by telephone is less than that of travelling or relying on postal services, benefits are likely to be greater, the higher the cost of travel or time. In other words, the greatest societal return on telecommunications investment may well be in rural and isolated areas. However, for obvious reasons, telecommunications providers do not make as much profit in rural and remote areas as in densely populated areas. Special incentives to upgrade telecommunications facilities in rural regions may therefore be justified.

### (b) Education and Training

A more informed, educated and skilled population is key to economic development. Because rural areas simply don't have the necessary population to support specialized programs of education or training, rural-based students have had to travel great distances in order to take advantage of such programs. As well, there is far less information generally available, through newspapers and journals, public libraries, and other sources, in rural than in urban areas.

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[31] See also Phillip Fine, "Telecom gives faltering towns new life", Globe & Mail (September 8, 1992), p.C8.

[32] Telecommunications: Enabling Ontario's Future, supra, at 26.

[33] Fulton, supra fn.22, p.34.

[34] See Williams, supra fn.29, p.4.

This can change, with innovative applications of telecommunications. Computer research and education networks permit people of all ages to use a wide variety of information sources, including libraries, databases and other individuals. They also permit people in remote areas to take courses from educational institutions thousands of miles away. Teleconferencing, in particular, has proven to be an effective means of providing quality instruction and essential training to rural and isolated public service personnel in third world countries.[35]

In fact, it *is* changing. All Canadian provinces now provide some form of tele-education, so as to improve educational opportunities in more remote regions. Ontario, for example, sponsors a number of correspondence-type courses for secondary and post-secondary school students, using computers, electronic classrooms, teleconferencing and facsimile machines.[36] Athabaska University of Alberta uses audio teleconferencing to augment correspondence courses taken by adults living in remote areas. Similar uses of telecommunications exist throughout the U.S.A., allowing rural residents, practitioners and others to upgrade their skills without having to leave their jobs or other responsibilities.[37] These examples may be few and far between, but they are likely the beginning of a trend toward much greater use of computer technology by schools and other learning institutions.

Public libraries are an important source of, or means to sources of, information for rural residents. While community libraries cannot afford more than a very basic set of reference materials, they can, given adequate telecommunications facilities, link up with other libraries, databases and resources, so as to provide local residents with impressive research capability.

### (c) Health Care

Another important application of telecommunications technology is in the field of medicine. Not only does the telephone provide a lifeline to hospitals and other emergency medical services, it has the potential to make available in rural and remote areas specialized care, through what has become known as "telehealth", or "telememedicine". Telecommunications can support the health care process by providing the means for more effective and more efficient information exchange, in a field which is highly dependent on information exchange.[38]

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[35] D. Goldschmidt, An Analysis of the Costs and Revenues of Rural Telecommunications Systems (Washington D.C.: Academy for Educational Development, January 1987).

[36] Ministry of Culture and Communications, supra fn.18, p.31.

[37] Parker et al, supra fn.21, p.47. See also Williams, supra fn.29, p.4

[38] Information Gatekeepers Inc., Telehealth Handbook (Boston: 1985).

With proper telecommunications links, general practitioners in remote areas can diagnose and treat their patients with the help of specialists located far away, thus reducing patient travel and inconvenience, improving continuity of care, and enhancing the quality and timeliness of care. Parker et al point to Alaska's use of an audio conferencing satellite circuit, which piggybacks on existing earth stations, to allow daily contact between village paramedics and physicians located in regional centres. This system allows for expert care-giving at a fraction the cost of travel and hospitalization.[39] Moreover, it serves to reduce feelings of isolation on the part of practitioners in remote areas.

In addition, telecommunications can be used to great advantage by the health profession for administration, consultations and continuing education, as well as patient care. This is of particular importance to rural and isolated practitioners, who often have to forego educational opportunities due to travel and time requirements.

Such uses of telecommunications may well assist in overcoming the current fiscal crisis in health care. In any case, they have potential to improve the quality of health care in rural and remote regions, without increasing the financial burden.

(d) Quality of Life and Environmental Protection

Good telecommunications infrastructure, combined with reasonably-priced services, allows people to work at home or at remote locations outside the office. Professionals who rely heavily on up-to-date information will not be deterred from setting up office in a rural community if they can access necessary information via computer modem. By enabling businesses, industries and professionals to locate in smaller centres, the quality of life in such centres is improved, while traffic congestion and pollution in urban areas are reduced.

There are many ways in which greater use of telecommunications can help combat environmental degradation. While telecommunications technology is now used for monitoring and remote sensing, as well as networking among environmental activists, the effect of improved telecommunications in rural areas on work location may well be of greater significance.

[39] Parker et al, supra fn.21, p.46; Ministry of Culture and Communications, supra fn.18, pp.32-3.

(e) Goals of Rural Telecommunications Policy

Given the tremendous potential for rural development offered by telecommunications, but the failure of market forces to account for that full potential, there is a clear role for public policy in encouraging the development of telecommunications in rural areas. Any such policy must recognize the cost implications of investments (see below), in addition to the external benefits discussed above.

Parker et al advocate ten goals of rural telecommunications policy as follows:

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 telephone calls.

10. Enable rural telephone carriers to provide the telecommunications and information services that become generally available in urban areas.

More generally, they state an overall policy goal:

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

In light of the rapid changes in telecommunications technology and the inability of regulators to fully appreciate all the implications of these, and other economic, changes, we submit that the relatively modest goals set out by Parker et al should be embraced.

## Who Pays?

There is little doubt that rural areas will benefit from improved telecommunications. The dilemma is how to finance such improvements without jeopardizing the affordability of basic telephone service for those with limited financial means. Telephone companies have to recover their costs; this means raising rates, and in particular, rates for non-competitive services. To what extent should all subscribers be forced to bear the cost of telecommunications investment above and beyond what is needed to maintain good quality voice communications?

Given the tremendous potential benefits of telecommunications investment to rural areas, and to the country at large, policy critics have strongly recommended that public funding be made available for such investment.[40] Indeed, there is precedent for such funding in Canada: in 1977, the federal Department of Communications introduced a major program to improve telecommunications in the far north. Through its Northern Communications Access Program, the government financed the extension of telecommunications services, by satellite, to remote northern communities. This policy recognized the key role that telecommunications plays in the social and economic development of remote communities, and therefore sought to deliver a quality of service in the north equivalent to that in the south of Canada.[41]

A decade later, the federal government again recognized the importance of ensuring that advanced telecommunications facilities develop in all parts of the country at reasonably comparable rates: in its 1987 discussion paper, Communications for the Twenty-First Century, Communications Canada argued that communications technologies "are central to the development of each of Canada's regions and to the reduction of regional disparities.....We must ensure that the application of advanced communications and information technology becomes a core element of our regional development strategies".[42]

The rationale for public funding lies in the fact that much of the economic and social benefit deriving from telecommunications investment is external or indirect. In other words, potential profits to telephone companies as a result of investment do not reflect

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[40] Parker et al, supra fn.21.

[41] See Frederick H. Weihs, Northern Consumers and Telecommunications Policy (PIRC: March 1989).

[42] Communications Canada, supra fn.19, pp.73 and 76..

the full set of benefits to society from such investment. Special incentives are therefore needed to encourage telephone companies to invest in less profitable (but still *socially* profitable) areas.

Others, such as the Alliance for Public Technology in the USA, which urges universal access to information services, including high bandwidth services, acknowledge that their recommendations "raise a whole new set of 'cost' questions".[43] They advocate sharing the costs of investment across the public telephone network, through one of two methods:

1. Access to the new information services would become part of basic telephone service. Every telephone subscriber would pay a higher basic access rate to cover the cost of the new services, whether he or she uses them or not. (Under this option, there could be special discount packages providing limited service at a lower cost).

2. While telephone companies would be required to provide access to the new information services in all exchanges, access would not become part of basic telephone service. Subscribers who want only telephone service would pay only for that, and subscribers who want access to more services would pay more. (The costs of providing access could be split between categories of subscribers in any way desired).

Whatever method of financing is chosen, caution must be exercised to ensure that the results of investment are not counter-productive. If an aggressive policy of investment in rural areas is followed, many businesses and individuals would undoubtedly benefit. However, if that policy is financed by *all* subscribers through higher rates for basic service, many more subscribers would suffer. Low income residents, who make up a large proportion of the rural population, would in some cases have to forego telephone service, thus losing what has become a lifeline for most Canadians. Moreover, low income residents would be the least likely to take advantage of the new information services, given that they can rarely afford personal computers or sophisticated terminal sets.[44]

Clearly, then, a balance must be struck between affordable voice telephone service and universally available information services. Both are socially desirable goals, but each has a cost. The former, in our opinion, is too important a principle to risk undermining by extravagant expansion of new information age technologies. Public funding is therefore appropriate. At the least, any development strategy involving telecommunications must

[43] O'Connor, supra fn.20, p.14.

[44] In 1990, Statistics Canada reports that while 23.8% of households with incomes over $55,000 had computers, only 5.8% of households with incomes under $25,000 did: Cat.13-218, Household Facilities by Income and Other Characteristics, 1990, Table 2.4.

consider cost implications thoroughly, so as to avoid further impoverishing the rural poor, and thus creating further economic and social costs which counteract expected benefits.

It is interesting, in this context, that both the Ontario Advisory Committee on Telecommunications Strategy and Parker et al put affordability high on their list of policy recommendations.[45] In so doing, they recognize the danger of complacency in respect of universal service: currently high telephone penetration rates may not continue, if prices for basic service jump.

[45] Ministry of Culture and Communications, supra fn.18, p.45; Parker et al, supra fn.21, p.91.

# THE CURRENT CANADIAN ENVIRONMENT

# CHAPTER THREE

## THE CURRENT CANADIAN ENVIRONMENT

In Canada, telephone companies continue to enjoy a monopoly in the provision of local telephone service. Ten companies serve the vast majority of Canadians. These companies are essentially provincial monopolies, other than Bell Canada, which serves both Ontario and Quebec, and Northwest Tel, which serves northern Canada. Two municipal systems provide local service in Edmonton, Alberta and Prince Rupert, B.C., and 47 independent systems serve smaller, primarily rural, centres in Ontario and Quebec. Independent telephone systems in Ontario serve approximately 217,000 network access lines. They are regulated by provincial authorities, while all major telephone companies, other than SaskTel and Manitoba Telephone System (provincial crown corporations), are regulated by the Canadian Radio-Television and Telecommunications Commission (CRTC).

Thus, rural subscribers in Canada are served by companies widely ranging in size and sophistication.

All major Canadian telephone companies (and likely most smaller ones too) have instituted programs of switching equipment modernization.[46] While replacement of analog by electronic, and now digital, technology does not necessarily provide for equal access to competitors, it does provide the capability to offer far more services, including custom calling options and high speed data transmission. While modernization is likely to occur the need for replacement arises, it is interesting to note that SaskTel, whose customer base is heavily rural, made a point of upgrading rural switches before urban ones, during its 1986-87 switching modernization program.[47]

The recent introduction of competition in long distance telephone service has altered the face of telecommunications in Canada. Cross-subsidies which favour rural areas and

[46] PIAC's 1992 survey of the major Canadian telephone companies (telcos) indicated that full digitalization will be achieved by most telcos within the next three years. Some, such as AGT Limited, are virtually 100% digital already.

[47] R. Olley, "An Examination of the Potential Impacts of Competition in Long-Distance Service on Rural and Urban Subscribers", Prairie Provincial Study on Telecommunications (Government of Saskatchewan, 1991), p.5.

which keep the price of basic service low are under attack now more than ever.[48] As monopoly telephone companies lose long distance profits to competition, they turn to basic service for financial relief.[49]

However, this need not be the case. Given that many of the new technologies being introduced reduce the costs of providing service, and given that competition itself is expected to improve productivity, low prices for local and rural service may be sustainable in the long term. Some regulators seem to recognize this: the Vermont public utilities commission, for example, in deregulating New England Telephone & Telegraph Co. prices for new and advanced services, required the company to freeze its local basic service rates for five years and commit itself to a $250 m. capital improvement program including full digitalization of rural and remote areas.[50]

Competition also causes telephone companies to look inward, for ways in which to reduce their costs. Non-essential personnel are cut, reducing the company's ability to effectively serve rural areas in particular.

Perhaps the greatest danger of competition and deregulation (which usually accompanies competition) is that rural areas will be left behind. Not only are market forces likely to favour the development of private, business-oriented services over the development of universally accessible, standardized public services, competitors are likely to focus on urban areas, where costs are lower and profit potential is greater.

While competition in US long distance service significantly eroded AT&T's market share in urban areas, it did not do so to the same extent in rural areas. A 1987 report of the US General Accounting Office noted that

> Still, many rural subscribers find themselves having to bear the effects of the FCC's regulatory decisions that promote competition without being able to choose service from among the competition.[51]

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[48] The Local Networks Convergence Committee of Communications Canada estimates the cost per line of urban and rural residential customers as $1225 and $3510, respectively: Convergence, Competition and Cooperation (1992), p.24. While rural customers are in many cases charged more for installation in particular, the extra charges in no way cover the extra cost to the telephone company.

[49] This trend is evident in Bell Canada's recent applications for increases to rates for touch tone service, directory assistance, 911 service, and inside wiring. As well, both Bell Canada and AGT Limited have indicated their intentions to file for rate relief in the near future.

[50] Fulton, supra fn.22, p.36.

[51] GAO, Telephone Communications: Issues Affecting Rural Telephone Service, (March 1987), p.34.

One reason for this seems to be that local telephone companies in these rural areas have not converted their switching equipment to provide equal access to competing long distance carriers as rapidly as those in urban areas.[52] However, the GAO report also notes that new entrants into the US long distance telephone market concentrated their efforts on high volume urban markets, essentially ignoring the widely scattered, lower volume rural companies.[53]

While this disparity may not be as marked in Canada as in the USA, where AT&T has been divested of its local telephone operations, and where local telephone companies now operate quite separately from their long distance counterparts, there is a danger that Canada will follow the USA lead in deregulating its telephone utilities. Indeed, the CRTC recently announced its intention to look into alternative methods of regulation, so as to provide more incentive to telephone companies and to reduce the burden of regulation. The danger is that without supervision and enforcement, telephone companies will have no incentive to invest in less profitable areas. This would be devastating to rural Canada.

[52] Kaserman and Mayo, "Long distance Telecommunications Policy - Rationality on Hold", Public Utilities Fortnightly (Dec.22, 1988), p.18 at 19. Kaserman and Mayo also note that the policy of rate-averaging (and the consequent cross-subsidy from urban to rural areas) has the undesirable effect of discouraging entry into rural areas, where high costs are not reflected in high prices.

[53] GAO, supra fn.52, p.33.

# THE TELECOMMUNICATIONS NEEDS OF RURAL CANADIANS

# CHAPTER FOUR

## THE TELECOMMUNICATIONS NEEDS OF RURAL CANADIANS

While academics and development experts seem to agree that modernization of the telecommunications network is essential for rural development, it has not been entirely clear how rural residents themselves view telephone service. For this reason, PIAC conducted a survey in early 1992 of rural Canadians, receiving over 2200 responses from across the country.[54] The results of that survey are discussed below.

### Importance of Telephone Service to Rural Residents

Rural Canadians are heavily dependent on telephone service. Over 64% consider themselves "very" or "extremely dependent", while only 2.3% are "not at all dependent". Interestingly, dependency ratings varied by region of the country, with Saskatchewan and Manitoba reporting higher rates (74% and 72% "very" or "extremely dependent"), and Quebec reporting a much lower rate (44%).[55]

Dependency also varies by size of community, with people in smaller communities reporting higher rates of dependency than those in larger communities (over 2,000 pop.). Isolation seems to be one of the prime reasons for this dependency: while 63% of respondents in communities of under 100 people cited isolation as a particularly important reason for having a telephone, only 47% of those in communities of over 3,000 people did so.

Of the most important reasons for having a telephone, "personal emergencies" tops the list, with 85% of respondents rating it highly. Next in importance come "personal

[54] See Appendix A for a copy of the survey, and a discussion of statistical reliability. PIAC chose as its survey base households with rural postal codes. A sample of 10,000 such households was drawn randomly from the Canadian Residential Phone List, covering all ten provinces (but neither Territory). "Rural" postal codes ("x0x xxx") are assigned by Canada Post to areas of low population density (usually less than 5,000 people), where the population is not large enough to justify letter carrier service. Rural post offices and, increasingly, "super mail boxes" or lock boxes, substitute for home delivery in these areas. The decision to upgrade a rural postal area to an urban one (and thus to provide letter carrier service) is discretionary, and is based on the mail sorting needs of the local delivery installation. Thus, rural postal areas do not necessarily coincide with Statistics Canada's definition of "rural areas". Indeed, it is likely that many rural postal areas are classified as "urban" by Statistics Canada.

[55] Provincial results are not as reliable as national result; see Appendix A.

contacts", with 69%, "isolation", with 53%, and business use, at 38%. "Personal shopping" was not considered an important reason for having a telephone; only 9.5% rated it highly.

These results did not vary significantly between provinces, with the following exceptions: a higher proportion of Nova Scotians considered isolation an important factor (65% versus 54% average), while fewer Newfoundlanders, somewhat surprisingly, consider it as important a factor (32%). As well, shopping seems to be a more important reason for having a telephone in the prairie provinces, where 14-15% of respondents cited it as important (versus 10% national average).

From these results, two inferences can be made:

1. Access to the public telephone network is considered by rural subscribers to be essential for basic needs. Affordability of at least the most basic of telephone service should therefore remain a top policy goal.

2. A significant percentage of rural Canadians consider telephone service to be very important for business reasons. This supports the claim that there is a reasonable market in rural areas for more sophisticated telecommunications services.

Single Line Service

Single line service is fast becoming the service standard in all parts of Canada. 95.7% of respondents to our survey indicated that single party service was available to them. Of these, only 5.3% did not take advantage of it (ie: over 90% of respondents had individual lines).

The availability of single line service, however, varies with community size: while only 0.7% of respondents from communities of over 3,000 people reported lack of availability of single line service, 4.6% of respondents from communities of 100-500 people did so. This result reflects the fact that multi-party service remains the standard service offering outside the "base rate area" of most telephone companies.[56] In other words, customers located outside the company-defined "base rate area" receive four-party service at basic rates, but must pay more in order to get two-party or single-party service.

[56] Telephone companies divide their served territory into exchanges, each exchange centred on a local switch, or "central office". The base rate area is the core geographic portion of the exchange, as defined by the telephone company (and determined in part by population density). The boundaries of a base rate areas are expanded when population density or company policy demand. Often, the base rate area covers the entire exchange.

Affordability may therefore be one reason why so many subscribers in smaller communities or more remote areas remain on four-party service. However, lack of knowledge may be another reason: a small but surprising number of respondents (2.2%) did not know if single party service was in fact available to them. In any case, a significant percentage (28%) of respondents without single-party service indicated that they would like to subscribe to it.

Indeed, several respondents to our survey complained about the failure of their telephone companies to offer single line service to them at no extra charge. Comments such as the following indicate the inadequacies of multi-party service:

> Party lines are the most impossible way of getting use of phone. Some people are downright rude. They do not, or will not, follow rules given by telephone system. (Manitoba)
>
> We live out in the country 7-10 miles from the nearest town. We are four large farming families on one line and it is a disgrace. The line is always busy; sometimes you wait 1½ hours for your turn to use the telephone. (Manitoba)
>
> I live twenty miles from the city of Sydney, and still we are stuck with the old party line system. Four people on the same phone line this close to a major centre, in 1992, is ridiculous. (Nova Scotia)
>
> I feel the place where we are is only 25 miles from the city of Kingston, and that we should have a better service than a multi-party line. (Ontario)

In fact, however, all major telephone companies in Canada are moving toward 100% single line service, some through programs of mandatory conversion. During the period 1986-91, both AGT and SaskTel undertook programs of mandatory conversion, so that all subscribers in these provinces now have single line service, whether they want it or not.[57] Newfoundland Telephone and NBTel also offer single-party service throughout their territories, but continue to offer two-party or four-party service to rural customers upon request. Other telephone companies are extending their facilities into more remote areas, so as to be able to offer single-party service to all customers.

[57] Interestingly, SaskTel converted its customers free of charge, while AGT levied a $560 charge (or $5/month for 20 years) on all customers whose level of service was (mandatorily) upgraded. Most telephone companies seem to consider such upgrades as beneficial to themselves: only AGT levies a one-time fee where the service standard has been upgraded.

This fairly recent move by telephone companies to make individual line service available to all customers is clearly appreciated, as the following comments illustrate:

> We live in a rural area, and have had private telephone line for two years - 100% improvement from 4 person party line. (Alberta)
>
> We were only recently hooked up to private telephone line and it is such a vast improvement over the multi party line that it is hard to find anything wrong with the service. (Alberta)
>
> Telephone is better since its private lines. Still costly. (Alberta)

While most telephone companies do not charge a fee for service upgrades, it is common practice to levy additional monthly charges on rural[58] one-party or two-party customers, based on the number of miles a customer is located from the boundary of the base rate area of the exchange. This "distance charge" is of particular annoyance to rural customers. (See "Cost of Service", below).

The distance charge is also likely to be the reason why over 5% of respondents to whom single-party service was available did not take advantage of it. The expansion of base rate areas is therefore to be encouraged, as it makes single-party service more affordable for rural customers, many of whom live below the poverty level.

Availability of and Demand for Optional Services

(a) Touch Tone

Like single party service, touch tone is gradually becoming the service standard throughout Canada. Touch tone service was available, at the time of our survey, to almost all subscribers: 94.5% of respondents reported that it was available to them, while 2.4% did not know. Touch tone service seems to be less available in the smallest communities (88% in <100 pop.), although a large proportion of respondents from those communities (7%) was not sure if touch tone was in fact available to them.

Approximately 82% of respondents reported subscribing to touch tone. This high "take rate" may be partially explained by the mandatory nature of touch tone service in some territories. Because touch tone requires less in the way of facilities, and because it can support far more in the way of special features (and thus extra revenues), it is preferred by service providers. BCTel, AGT and NBTel have all made touch tone the standard

[58] Ie: outside the base rate area.

service offering throughout their territories, offering rotary dial service only on a "grandfathered" basis to existing rotary dial customers.[59] Other companies are expected to follow suit.

Nevertheless, it can be inferred that most rural Canadians, like their urban counterparts, value the convenience and the additional services that touch tone service offers. Over 40% of respondents to whom touch-tone service was unavailable reported that they would like to subscribe to touch tone service. However, most, if not all, of these would have to upgrade to single line service in order to take advantage of touch-tone service. This would entail a significant increase in their monthly bill under the current rate structure.[60]

(b) Special Features

According to a 1990 Decima Research survey, people living in communities of under 10,000 are less likely than their urban-dwelling counterparts to have special features (such as call forwarding, automatic redial or incoming call identification) on their phones (28% versus 42%, respectively).[61] Our survey, which focused on communities of under 3,000, further emphasizes this conclusion: while 34% of respondents reported subscribing to Call Waiting, only 12% did to Call Forwarding, and only 8% did to Call Management Services.

There are several possible reasons for this rural/urban disparity, the first being that such features are less likely to be available to rural-dwelling subscribers than to urban-dwellers. While all telephone companies are upgrading their switching equipment with digital and other technology so as to support new services and features,[62] urban areas

[59] AGT Limited Tariff Item 165.3, effective October 6, 1991; CRTC Telecom Order 92-1445 (re: NBTel); CRTC Telecom Order 91-851 (re: BCTel); but see also CRTC Telecom Order 92-1536 (re: BCTel).

[60] Two-party and four-party service requires distinctive ringing; this makes touch tone service technically impossible.

[61] Decima Research, Survey of the Canadian Residential Long Distance Market, prepared for Unitel Communications Inc, (April 1990) pp.68-69.

[62] Most, if not all, major Canadian telephone companies are digitalizing their networks as fast as possible. Not only does digital technology provide a platform for a host of information and other services, it is far more efficient, needs less maintenance, and handles much greater capacity than do older technologies. Telephone companies thus justify replacing their old analog switches long before they have broken down on the basis of future cost savings and revenue streams flowing from the new technology.

Moreover, other technology, in addition to digital switching, is needed to support some special features. Call Display, for example, can only operate where a particular method of exchanging signalling information and data between digital switches is in place - this method, known as CCS#7, has only recently been introduced in urban areas.

are usually targeted for conversion first, given their greater revenue-producing potential.[63] Even between communities of over 3,000 people and under 500 people, respondents from larger communities consistently reported greater availability of Call Management Services, Call Forwarding, Call Waiting and fax service than did respondents from smaller communities.

A second reason for the low "take rates" in rural areas may be lack of knowledge. Of the respondents to our survey who were aware that Call Management Services[64] was available to them, 22% subscribed. However, a strikingly high percentage of respondents (46.7%) did not even know if these features were available to them, suggesting that the telephone companies could improve their marketing tactics. A higher proportion of respondents (65%) were aware that call waiting was available to them, while 25% did not know. Of the former, 51% subscribed. Similarly, 55% of respondents reported availability of call forwarding, while 33% were unsure. Of the former, 22% subscribed. Only 51% of respondents reported that fax service was available to them, while 38% were not sure. Of the former, 11.5% subscribed.

Business users tend to make more use of special features, in particular fax (82% of fax subscribers are business users). Business users show a slightly higher take rate for call waiting (37%) and call forwarding (14%) than do non-business users (31% and 9.5%). However, there is no significant difference between business and non-business take rates for Call Management Service.

(c) Range of Services Available

A high proportion of respondents (70%) reported satisfaction with the range of services available to them; only 8% were dissatisfied. While business users in general reported similar results (10% dissatisfaction), it appears that there is somewhat more dissatisfaction among heavy business users (13% of those who use the phone mainly for business; 7% of those who use the phone mainly for personal affairs).

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[63] It should be noted, however, that much replacement of switching equipment proceeds on an "as needed" basis, with the result that many rural switches have already been upgraded. Bell Canada, for example, currently has digital switches located throughout its territory, even in the remotest of locations. In support of its plan to have 100% digital switches by the end of 1994, Bell notes that

> the level of intelligence that is built into digital switches provides the flexibility to respond rapidly and economically to changing customer needs and evolving technological and network design requirements.
>
> Bell Canada, Annual Construction Program Review, January 1992 View (March 27, 1992) p.14.

[64] Call Display, Call Return, Call Screen and Call Trace.

# TABLE 4A
## Satisfaction with Range of Services Available by Province

| National / Rating | Count | Count Percent |
|---|---|---|
| 1. very dissatisfied | 66 | 3.4 |
| 2. dissatisfied | 101 | 5.2 |
| 3. no opinion | 422 | 21.6 |
| 4. satisfied | 723 | 37.0 |
| 5. very satisfied | 642 | 32.9 |
| total | 1954 | 100.0 |

| Province / Rating | Count | Count Percent | Province / Rating | Count | Count Percent |
|---|---|---|---|---|---|
| British Columbia | | | Alberta | | |
| 1. very dissatisfied | 8 | 4.1 | 1. very dissatisfied | 1 | 0.5 |
| 2. dissatisfied | 7 | 3.6 | 2. dissatisfied | 7 | 3.3 |
| 3. no opinion | 43 | 21.9 | 3. no opinion | 50 | 23.7 |
| 4. satisfied | 68 | 34.7 | 4. satisfied | 85 | 40.3 |
| 5. very satisfied | 70 | 35.7 | 5. very satisfied | 68 | 32.2 |
| total | 196 | 100.0 | total | 211 | 100.0 |
| Saskatchewan | | | Manitoba | | |
| 1. very dissatisfied | 3 | 1.9 | 1. very dissatisfied | 7 | 5.3 |
| 2. dissatisfied | 5 | 3.2 | 2. dissatisfied | 7 | 5.3 |
| 3. no opinion | 21 | 13.5 | 3. no opinion | 23 | 17.3 |
| 4. satisfied | 65 | 41.9 | 4. satisfied | 56 | 42.1 |
| 5. very satisfied | 61 | 39.4 | 5. very satisfied | 40 | 30.1 |
| total | 155 | 100.0 | total | 133 | 100.0 |
| Ontario | | | Quebec | | |
| 1. very dissatisfied | 23 | 3.8 | 1. very dissatisfied | 8 | 2.6 |
| 2. dissatisfied | 38 | 6.3 | 2. dissatisfied | 18 | 5.9 |
| 3. no opinion | 151 | 25.0 | 3. no opinion | 65 | 21.2 |
| 4. satisfied | 208 | 34.4 | 4. satisfied | 113 | 36.9 |
| 5. very satisfied | 184 | 30.5 | 5. very satisfied | 102 | 33.3 |
| total | 604 | 100.0 | total | 306 | 100.0 |

| Province / Rating | Count | Count Percent | Province / Rating | Count | Count Percent |
|---|---|---|---|---|---|
| New Brunswick | | | Nova Scotia | | |
| 1. very dissatisfied | 3 | 2.0 | 1. very dissatisfied | 13 | 8.2 |
| 2. dissatisfied | 8 | 5.4 | 2. dissatisfied | 10 | 6.3 |
| 3. no opinion | 23 | 15.6 | 3. no opinion | 33 | 20.8 |
| 4. satisfied | 59 | 40.1 | 4. satisfied | 51 | 32.1 |
| 5. very satisfied | 54 | 36.7 | 5. very satisfied | 52 | 32.7 |
| total | 147 | 100.0 | total | 159 | 100.0 |
| Prince Edward Island | | | Newfoundland | | |
| 1. very dissatisfied | | | 1. very dissatisfied | | |
| 2. dissatisfied | | | 2. dissatisfied | 1 | 2.8 |
| 3. no opinion | 3 | 42.9 | 3. no opinion | 10 | 27.8 |
| 4. satisfied | 3 | 42.9 | 4. satisfied | 15 | 41.7 |
| 5. very satisfied | 1 | 14.3 | 5. very satisfied | 10 | 27.8 |
| total | 7 | 100.0 | total | 36 | 100.0 |

Among provinces, rural Albertans were most satisfied with the range of services available to them (4% dissatisfaction, versus 9% overall dissatisfaction), while rural Nova Scotians reported the highest rates of dissatisfaction (14.5%) with the range of services available to them.[65]

Some respondents complained about lack of services in their comments:

> Telephone service is excellent and improves every year, but rural areas should have access to 911 service. (Saskatchewan)

> I really wish that we could have the same services available to us that we see available to most phones around us. When inquiring about when they will be available, we are told they have no idea like we are a forgotten area. (Ontario)

[65] As noted above, provincial results are less reliable than overall results, given the sample size.

(d) Extra lines

18% of respondents reported having more than one telephone line, 28% of whom devote one line to business. Thus, 13% of respondents have at least one extra line which is used for reasons other than business.

(e) Miscellaneous

According to Decima's survey results, rural dwelling subscribers are less likely to have an answering machine than are their urban-dwelling counterparts (9% versus 27% respectively).[66] It also appears from Decima's study that fewer rural dwellers own their main telephone set (27% versus 36%).

Quality of Service

Rural Canadians are generally very satisfied with the overall quality of service they receive from their local telephone company: 98% of respondents rated it at least adequate, and 80% rated it good or excellent. In particular, most respondents seemed to be satisfied with transmission quality (93%), billing clarity and accuracy (95%), and quality and speed of service (93%), rating them 3-5 on a scale of 5.

These results did not vary much between provinces, except as follows: respondents in Newfoundland, Nova Scotia and PEI reported higher dissatisfaction with transmission quality (17%, 10% and 14% respectively) than average (7%), while Alberta and Manitoba respondents reported less dissatisfaction (3-4% in both cases). In the area of service speed and quality, Newfoundland respondents again reported somewhat higher dissatisfaction (14% versus 7% average), and Alberta respondents showed very little dissatisfaction (2%).

Neither was there any significant variation in overall quality ratings by size of community, although more respondents from communities of < 100 people rated the quality poor or very poor (3.8%) than did respondents from communities of over 3,000 (0.7%). This is not too surprising, given the practical difficulties of serving customers located in remote and often rugged locations. However, it suggests that at least some telephone companies could substantially improve the service they provide to less densely populated areas.

[66] Decima Research, supra fn.62, p.71.

# TABLE 4B
## Quality of Service Ratings by Province

| National / Rating | Count | Count Percent |
|---|---|---|
| 1. very poor | 13 | 0.6 |
| 2. poor | 33 | 1.5 |
| 3. adequate | 385 | 17.9 |
| 4. good | 1140 | 52.9 |
| 5. excellent | 582 | 27.0 |
| total | 2153 | 100.0 |

| Province / Rating | Count | Count Percent | Province / Rating | Count | Count Percent |
|---|---|---|---|---|---|
| British Columbia | | | Alberta | | |
| 1. very poor | 2 | 0.9 | 1. very poor | | |
| 2. poor | 4 | 1.8 | 2. poor | 1 | 0.5 |
| 3. adequate | 37 | 16.7 | 3. adequate | 32 | 14.4 |
| 4. good | 116 | 52.3 | 4. good | 125 | 53.3 |
| 5. excellent | 63 | 28.4 | 5. excellent | 64 | 28.8 |
| total | 222 | 100.0 | total | 222 | 100.0 |
| Saskatchewan | | | Manitoba | | |
| 1. very poor | | | 1. very poor | 3 | 2.1 |
| 2. poor | | | 2. poor | 2 | 1.4 |
| 3. adequate | 27 | 16.7 | 3. adequate | 28 | 19.2 |
| 4. good | 79 | 48.8 | 4. good | 76 | 52.1 |
| 5. excellent | 56 | 34.6 | 5. excellent | 37 | 25.3 |
| total | 162 | 100.0 | total | 146 | 100.0 |
| Ontario | | | Quebec | | |
| 1. very poor | 4 | 0.6 | 1. very poor | 3 | 0.9 |
| 2. poor | 14 | 2.1 | 2. poor | 5 | 1.5 |
| 3. adequate | 142 | 21.0 | 3. adequate | 56 | 16.4 |
| 4. good | 352 | 52.1 | 4. good | 174 | 50.9 |
| 5. excellent | 163 | 24.1 | 5. excellent | 104 | 30.4 |
| total | 675 | 100.0 | total | 342 | 100.0 |

| Province / Rating | Count | Count Percent | Province / Rating | Count | Count Percent |
|---|---|---|---|---|---|
| New Brunswick | | | Nova Scotia | | |
| 1. very poor | | | 1. very poor | 1 | 0.6 |
| 2. poor | 2 | 1.2 | 2. poor | 5 | 2.9 |
| 3. adequate | 27 | 16.6 | 3. adequate | 28 | 16.0 |
| 4. good | 92 | 56.4 | 4. good | 97 | 55.4 |
| 5. excellent | 42 | 25.8 | 5. excellent | 44 | 25.1 |
| total | 163 | 100.0 | total | 175 | 100.0 |
| Prince Edward Island | | | Newfoundland | | |
| 1. very poor | | | 1. very poor | | |
| 2. poor | | | 2. poor | | |
| 3. adequate | | | 3. adequate | 8 | 20.5 |
| 4. good | 7 | 100.0 | 4. good | 22 | 56.4 |
| 5. excellent | | | 5. excellent | 9 | 23.1 |
| total | 7 | 100.0 | total | 39 | 100.0 |

Of the comments received which complained about quality of service, most came from smaller communities. Poor reception, too much noise on the line interfering with computer modem, difficulties making connections especially during bad weather, network congestion (busy signals when line not in use), and inadequate volume when using more than one telephone set on a single line were all mentioned by respondents as particular problems. Two respondents in particular complained about the speed and quality of repair service in Nova Scotia. Both were from communities of less than 1,000 people.

Business users tend to rate quality of service slightly lower than do non-business users: of business users, 3.3% rated overall quality poor or very poor, compared with 1.7% of non-business users. 26% of business users rated quality of service excellent, while over 29% of non-business users did so. However, this difference, if it is at all significant, does not appear in ratings of transmission quality, billing clarity/accuracy, and service speed/quality, which did not vary substantially between business and non-business users.

Size and Shape of Local Calling Area

The lack of a usefully large local calling area is clearly a major problem area for rural customers: 48% reported dissatisfaction with the size of their local calling area, and 41% reported dissatisfaction with its shape. While this level of dissatisfaction is prevalent throughout the country, respondents from Ontario and Quebec reported higher than average dissatisfaction (49%-54%), while respondents from Saskatchewan reported lower than average dissatisfaction (24%-31%).

A significant number of complaints and inquiries received by the CRTC relate to this issue: a large number of rural customers find that they have to incur long distance charges in order to call the nearest urban centre, in which important services such as hospitals, schools, and government are located.[67] This seems unfair to them, given that urban customers can make all or most necessary calls locally, at no extra charge.[68]

In response to this pervasive problem, telephone companies, together with the CRTC and other regulators, have developed policies for extending the boundaries of local area service. Most of these involve a maximum distance between main switching centres (usually 65 km.), and a minimum "community of interest", measured by percentage of customers calling exchange in question as well as a majority vote.

As pervasive as extended area service has become, rural customers still report high levels of dissatisfaction. By far the most complaints expressed by respondents to our survey related to the incurrence of toll charges for calls to nearby communities. The following are examples:

> ...the only inconvenience is that almost every little town around us is long distance. (Ontario)
>
> ...to call the school, which is only five miles away, is long distance. (Ontario)
>
> We are very unhappy about our local calling area....we can call up to distances of 20-30 miles away free of charge, and our next door neighbours ½ mile away are long distance. (Alberta)

[67] CRTC, Comments, Inquiries and Complaints, 1990-91, p.26.

[68] Similar problems exist in the USA: Frederick Williams reports that the majority of complaints he receives are about the lack of extended area dialling service in some rural areas. He notes that patterns of commercial and residential development often evolve in conflict with local calling areas, such that schools must incur long distance charges to call students' homes: Williams, supra fn.29, p.5.

> ...To reach the Town Hall, a large portion of township residents have to pay long distance rates. As far as I am concerned, the local calling area is inappropriately drawn. (Ontario)
>
> ...our post office is 10 miles away and it is long distance whereas another town is 23 miles [away] and it is not. (Nova Scotia)
>
> I feel that it is very unfair that I can call Hull [Quebec] locally but I cannot call work 5 miles away without being charged long distance....If you're at work, and someone is sick, I cannot call home to check on them without reversing the charges. (Ontario)
>
> I am very happy that we now are included with the Wpg. extension. No more long distance. It's great! (Manitoba)

In response, telephone companies are offering a variety of alternative discount plans to individual subscribers, usually for a flat monthly fee. It remains to be seen whether these new service offerings will satisfy disgruntled rural customers.

Bell Canada recently applied to the CRTC for approval of its "Neighbourhood Calling Plan", an expansion of traditional extended area service, which would have allowed local calling between all adjacent exchanges, without a measured "community of interest" requirement. This plan, which was rejected by the CRTC on the grounds that it would have required too much of a subsidy from general ratepayers, would undoubtedly have pleased many of Bell's rural customers.[69]

Cost of Service

(a) Cost of Local Service

A large proportion of respondents (23%) reported dissatisfaction with the price of local service.[70] Business users reported similar levels of dissatisfaction to those of non-business users. However, there was some variation between provinces on this issue: stronger dissatisfaction with local rates was evident in New Brunswick (29%) and Saskatchewan (29%), while Manitoba respondents showed the least dissatisfaction (13%). Newfoundland respondents reported particularly high satisfaction levels: 42% versus 34% average, although their dissatisfaction levels were average.

[69] Interestingly, Manitoba Telephone System (MTS) is currently offering an almost identical service, called "Community Calling". This plan allows for toll free calling to adjacent exchanges other than Winnipeg and Brandon (for which one must pay a monthly fee). MTS is regulated by the Manitoba Public Utilities Board.

[70] The bulk of respondents (44%) reported neither satisfaction nor dissatisfaction (3 on a scale of 5) with respect to the price of local telephone service. A further 34% reported satisfaction.

## TABLE 4C
## Satisfaction with Telephone Service

| Aspects of Service | Count | Count Percent | Aspects of Service | Count | Count Percent |
|---|---|---|---|---|---|
| Cost of Local Service | | | Cost of Long Distance Calling over Short Distances | | |
| 1. very dissatisfied | 165 | 8.1 | 1. very dissatisfied | 397 | 19.4 |
| 2. dissatisfied | 294 | 14.4 | 2. dissatisfied | 385 | 18.8 |
| 3. no opinion | 889 | 43.6 | 3. no opinion | 696 | 34.0 |
| 4. satisfied | 404 | 19.8 | 4. satisfied | 377 | 18.4 |
| 5. very satisfied | 288 | 14,1 | 5. very satisfied | 191 | 9.3 |
| total | 2040 | 100.0 | total | 2046 | 100.0 |
| Cost of Long Distance Calling over Very Long Distances | | | Local Calling Area Too Small | | |
| 1. very dissatisfied | 153 | 7.6 | 1. very dissatisfied | 574 | 29.3 |
| 2. dissatisfied | 297 | 14.8 | 2. dissatisfied | 354 | 18.1 |
| 3. no opinion | 828 | 41.4 | 3. no opinion | 445 | 22.7 |
| 4. satisfied | 492 | 24.6 | 4. satisfied | 361 | 18.4 |
| 5. very satisfied | 231 | 11.5 | 5. very satisfied | 226 | 11.5 |
| total | 2001 | 100.0 | total | 1960 | 100.0 |
| Local Calling Area Inappropriate Shape | | | Transmission Quality | | |
| 1. very dissatisfied | 437 | 24.3 | 1. very dissatisfied | 54 | 2.7 |
| 2. dissatisfied | 296 | 16.5 | 2. dissatisfied | 86 | 4.4 |
| 3. no opinion | 538 | 30.0 | 3. no opinion | 393 | 20.0 |
| 4. satisfied | 318 | 17.7 | 4. satisfied | 713 | 36.3 |
| 5. very satisfied | 207 | 11.5 | 5. very satisfied | 719 | 36.6 |
| total | 1796 | 100.0 | total | 1965 | 100.0 |

| Aspects of Service | Count | Count Percent | Aspects of Service | Count | Count Percent |
|---|---|---|---|---|---|
| Billing Clarity / Accuracy | | | Service Speed / Quality | | |
| 1. very dissatisfied | 39 | 1.9 | 1. very dissatisfied | 35 | 1.8 |
| 2. dissatisfied | 70 | 3.5 | 2. dissatisfied | 107 | 5.4 |
| 3. no opinion | 325 | 16.2 | 3. no opinion | 418 | 20.9 |
| 4. satisfied | 793 | 39.6 | 4. satisfied | 793 | 39.7 |
| 5. very satisfied | 774 | 38.7 | 5. very satisfied | 644 | 32.2 |
| total | 2001 | 100.0 | total | 1997 | 100.0 |
| Range of Service Available | | | Other | | |
| 1. very dissatisfied | 66 | 3.4 | 1. very dissatisfied | 29 | 25.2 |
| 2. dissatisfied | 102 | 5.2 | 2. dissatisfied | 4 | 3.5 |
| 3. no opinion | 422 | 21.6 | 3. no opinion | 29 | 25.2 |
| 4. satisfied | 723 | 37.0 | 4. satisfied | 27 | 23.5 |
| 5. very satisfied | 642 | 32.8 | 5. very satisfied | 26 | 22.6 |
| total | 1955 | 100.0 | total | 115 | 100.0 |

Local service rates are based on the number of subscribers in the local calling area, thus treating rural and urban subscribers equally. However, rural customers (ie: those located in more sparsely populated regions outside the "base rate area") are far more costly to serve than are urban customers. In order to recoup some of these costs, telephone companies levy a special distance charge on single (and sometimes two-party) lines outside the base rate area. This monthly charge is usually based, at least in part, on the distance between the customer location and the boundary of the base rate area.

PIAC's survey did not ask about rural distance charges per se. However, such charges are essentially part of the rate for local service; they are simply added to the monthly basic service rate. Thus, the satisfaction levels with respect to local service rates reflect the existence of these extra charges.

Indeed, several respondents commented specifically on the unfairness of charging rural customers an extra monthly fee for the same level of service as that enjoyed by their urban counterparts. The following are examples:

> ....you should lobby to eliminate the high cost of single line rural service for subscribers outside the base rate area - it's discriminatory. (Ontario)
>
> I think it is very unfair that people that live five miles away from us, because they are closer to the centre of town, pay less than half the base rate that we have to pay for our telephone. (New Brunswick)

The CRTC also reports receiving a significant number of complaints on the issue of rural distance charges.[71]

(b) Construction Charges

Another issue that PIAC's survey neglected to address is that of construction charges applied to new rural customers where facilities do not already exist. Telephone companies subsidize construction of facilities in rural areas to varying degrees, according to formula ranging from very detailed to totally discretionary. Because most telephone companies have a policy of extending service to areas where there may be customer requirements, construction charges are not levied in every case.[72]

However, the CRTC receives a number of complaints from rural customers about construction charges: in 1990-91, it reported altering "a significant number of quoted costs" to the benefit of the complainants.[73] Thus, while construction charges never concern most rural subscribers, they are a problem for the few who must bear them.

(c) Cost of Long Distance Calling

A significant proportion of respondents (22%) reported dissatisfaction with the cost of long haul long distance calling, approximately the same proportion as those dissatisfied

[71] CRTC, supra, fn.68, p.23

[72] Bell Canada, for example, provided primary exchange service to 89 previously unserved communities in 1991. However, only 31 of these communities were assessed construction charges, based on Bell's formula for assessing such charges. The average charge to new subscribers in these 31 communities was $656, with actual charges ranging from $80 to $9,460: Bell(CRTC)24Apr92-56 CPR; Bell Canada 1992 Construction Program Review.

[73] CRTC, supra fn.68, p.24.

with the cost of local service. On the other hand, a much larger proportion of respondents (38%) reported dissatisfaction with the cost of short haul long distance calling.

This difference is not surprising, given the recent trend toward lower prices for long haul long distance calling, without similar reductions in the price of short haul long distance calling.[74] The heavy reliance by rural residents on intra-provincial calling, and the high rate of dissatisfaction with local calling areas, (see above) underscore this concern.

Dissatisfaction with the cost of toll calls over short distances was especially marked in Nova Scotia (61%). This anomaly reflects MT&T's anomalously high rates for calling within the province over a distance of 80+ miles.[75] Higher than average satisfaction rates were reported in New Brunswick (39%) and Saskatchewan (41%).

Satisfaction levels as between provinces with respect to long haul long distance calling did not range as much; a high proportion of respondents in each province reported indifference (3 on a scale of 5). However, satisfaction levels were particularly high in BC (44%) and particularly low in Quebec (26% versus 36% average). In general, dissatisfaction was higher in eastern Canada, with the exception of New Brunswick.

(d) Other charges/rates

A few respondents specifically complained about the rates for rental equipment, while others commented that rates generally were too high.

Calling Patterns

70% of respondents reported doing most of their long distance calling within the province. 47% of respondents reported that most of their long distance calling was over distances of less than 100 miles. This appears to be the case for rural communities of all sizes, but variations do exist among different regions of the country. Respondents from the Maritime provinces and Saskatchewan called outside the province more often (40% - 48%), while Quebec and Manitoba respondents reported higher than average calling

[74] Over the past decade, the spread between rates for the shortest and longest distances called has shrunk in almost all jurisdictions, giving rise to a trend toward a single price for all long distance calling. Interprovincial calling now ranges from $.37 per minute for 75 miles to $.48 for 2000+ miles, a mere $.11 per minute difference. While the spread between short-haul (eg: 20 miles) and long-haul (eg: 120 miles) intra-provincial calls has also been shrinking, it remains much higher on average (eg: $.23 in AGT territory; $.20 in NBTel territory).

[75] As of April 1992, MT&T charged $.55/minute to call over 80 miles within its territory. In contrast, NBTel charged $.39 -$.40; Newfoundland Tel $.38 (as of May 1992); AGT $.32 - $.33 (as of August 1992); MTS $.38 - $.40, BCTel and Bell $.31 - $.33 (as of November and July 1992, respectively).

within their respective provinces (85% and 82%, respectively). These results can be partially explained by the size of the province in question, and by the cultural and linguistic independence of Quebec residents.

In any case, it is clear that intra-provincial and short-haul long distance calling is important to rural residents. In its survey, Decima Research also found that rural residents are more likely to make calls within their own province, but less likely to make calls to the US or internationally.[76] It can thus be inferred that the price of intra-provincial long distance calling is of greater (or at least as great) concern to rural residents and businesses than is the price of inter-provincial calling.[77]

Results of the 1986 national census show that most rural families, like their urban counterparts, spend far more on long distance service than on basic telephone service. What is striking about those statistics is that, while rural *non-farm* families spend approximately the same amount as urban families on long distance ($21/month), rural *farm* families spend far more ($30/month).[78]

This result is supported by the findings of Parker et al that rural residents tend to use telecommunications more heavily than do urban dwellers.[79] It also makes intuitive sense, since farms are likely to be located further away from major centres, thus requiring the use of long distance to call government, suppliers, or customers.

While affordable long distance telephone service is thus of great importance to rural residents, especially farmers, it is interesting that a large majority of respondents to our survey (68%) reported average monthly long distance telephone bills of under $40.00. Indeed, over 20% spend less than $10/month on long distance calling.

Heavier use of long distance (as measured by dollars spent on long distance) was evident in Alberta, where only 58% of respondents spent less than $40 per month on long distance. Lighter use of long distance seems to be made by residents of Quebec and the Maritimes, where closer to 80% of respondents spent less than $40 per month on long distance.

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[76] Decima Research, supra fn.62, p.19. Decima defined "rural" as communities of under 10,000 people.

[77] See below for a discussion of price trends.

[78] Statistics Canada, "Family Expenditure in Canada, 1986", Cat.62-555, Table 3.

[79] Parker et al, supra fn.21, p.34. Parker et al cite the example of northern Canadian communities, residents of which spend three times as much as their urban counterparts on long distance service. They state that the number of long distance calls in some Indian villages in northern Canada increased by as much as 800 percent after satellite earth stations replaced high frequency radios.

# TABLE 4D
## Destination of Long Distance Calling by Province

| National / Destination | Count | Count Percent |
|---|---|---|
| 1. within the province | 1393 | 69.9 |
| 2. outside the province | 599 | 30.1 |
| total | 1992 | 100.0 |

| Province / Destination | Count | Count Percent | Province / Destination | Count | Count Percent |
|---|---|---|---|---|---|
| British Columbia | | | Alberta | | |
| 1. within the province | 146 | 69.9 | 1. within the province | 142 | 67.3 |
| 2. outside the province | 63 | 30.1 | 2. outside the province | 69 | 32.7 |
| total | 209 | 100.0 | total | 211 | 100.0 |
| Saskatchewan | | | Manitoba | | |
| 1. within the province | 92 | 59.7 | 1. within the province | 111 | 82.2 |
| 2. outside the province | 62 | 40.3 | 2. outside the province | 24 | 17.8 |
| total | 154 | 100.0 | total | 135 | 100.0 |
| Ontario | | | Quebec | | |
| 1. within the province | 452 | 72.9 | 1. within the province | 265 | 85.2 |
| 2. outside the province | 168 | 27.1 | 2. outside the province | 46 | 14.8 |
| total | 620 | 100.0 | total | 311 | 100.0 |
| New Brunswick | | | Nova Scotia | | |
| 1. within the province | 81 | 53.6 | 1. within the province | 83 | 52.2 |
| 2. outside the province | 70 | 46.4 | 2. outside the province | 76 | 47.8 |
| total | 151 | 100.0 | total | 159 | 100.0 |
| Prince Edward Island | | | Newfoundland | | |
| 1. within the province | 2 | 33.3 | 1. within the province | 19 | 52.8 |
| 2. outside the province | 4 | 66.7 | 2. outside the province | 17 | 47.2 |
| total | 6 | 100.0 | total | 36 | 100.0 |

The only significant variation in long distance spending by community size appeared in the category of those spending over $100 per month: Only 2.9% of those in communities of over 3,000 population reported spending this much, while 7.3% of those in communities of less than 500 population so reported (5.8% of total respondents reported spending over $100 per month on long distance).

A recent SaskTel survey on the calling patterns of SaskTel customers shows 45% more long distance calling by rural than urban businesses, and 100% more calling by rural over urban residence customers. The SaskTel survey also indicated that rural customers make a substantially greater number of short haul (in-province) calls, while urban subscriber calling seemed to be more equalized.[80]

All this emphasizes the importance of affordable short-haul calling to rural subscribers.

Business Use

While 42% of respondents reported using the telephone for business, only 5.2% of respondents reported having a separate line devoted to business. Of those who cited "business use" as an extremely important reason for having a telephone, 60% have a separate business line.

Of business users, 40% were farmers and 22% worked in the service industry. The extent to which respondents use th telephone for business varied widely, even among occupational categories.

Use of the telephone for business seems to be more important for residents of the smallest communities (<100), than for most respondents (47% versus 38% average). Business use was considered an important reason for having a telephone by a higher proportion of respondents in the prairie provinces than elsewhere (47% - 55%, versus 38% average).

Of those who reported using the telephone for business , the vast majority (72%) estimated that less than half of their telephone bill was business-related. Only 8.3% of respondents reported using long distance more for business calls than for personal calls.

It is perhaps not surprising that business users tend to have higher average long distance bills: 36% of business users reported spending over $50 per month on long distance, while only 15% of non-business users did so.

[80] SaskTel, "A Paper on SaskTel Subscriber Originated Calling Patterns", January 1992.

Summary

The results of our survey confirm that telephone service is perceived by rural Canadians as an essential service, due in large part to the "distance factor" that distinguishes rural residents and businesses from their urban counterparts. In addition to emergencies and personal contacts, isolation was considered by respondents to be a primary reason for having a telephone.

Business use was noted as another reason for having a telephone by over a third of respondents, indicating that the rural market is by no means limited to typical residential usage.

Until recently, two-party or four-party service was considered to be a reasonable alternative to expensive single line service for rural customers with financial difficulties. It would appear from our survey that this is no longer the case: many multi-party subscribing respondents commented on its inadequacy, and indicated that they would like to subscribe to single line service. While the survey does not reveal why over 5% of respondents who knew that single line service was available to them chose not to take advantage of it, it may be reasonably surmised that the higher price of single line service continues to be an obstacle for those on low incomes.

Similarly, it appears that touch tone service is increasingly considered part of basic telephone service by rural consumers: app. 82% subscribed at the time of this survey. Of the remaining 18%, those with two-party or multi-party service (app.40%) had no choice but to use rotary dial equipment.

Other features, such as call waiting, call forwarding and call display were, at the time of the survey, not yet offered in all rural areas, as indicated by the high percentage of negative and "do not know" responses. Nevertheless, only 8% of all respondents reported dissatisfaction with the range of services available to them. In the context of the emerging information age, however, such dissatisfaction may well increase if new services are not rolled out to rural areas more quickly.

Rural Canadians were generally very satisfied with the quality of telephone service they receive. Exceptions to this seem to be concentrated in smaller communities, where a number of respondents noted problems with transmission quality and telephone company repair service.

Clearly the biggest issue for rural Canadians is that of the size and shape of their local calling areas: almost one half of all respondents reported dissatisfaction with this aspect of service, and many respondents commented further on it. Rural customers see their limited local calling as unfair and discriminatory, in comparison with urban dwellers.

The fact that they have to incur long distance charges to call nearby centres, and in some cases, important services, is all the more difficult for rural subscribers to accept when they are forced to pay extra "mileage" or "distance charges" to help pay for the high cost of providing telephone service in rural areas. These distance charges are also seen as discriminatory and unfair.

Running a close second to local calling areas in terms of dissatisfaction was the price of short-haul long distance calling, much of which, for rural customers, is necessary. If rural subscribers are limited to a small local calling area, then it is important that short-haul long distance calling (to a nearby urban centre, for example), be reasonably priced.

As stated by one respondent,

> Small communities with few services are penalized because they have to telephone long distance for business and government services. People in large cities can contact a wide variety of business and government services without paying long distance charges. (Saskatchewan)

Given that 70% of respondents reported doing most of their long distance calling within the province, and almost 50% reported most of their long distance calling as covering distances of less than 100 miles, it is not surprising that the price of short-haul long distance calling was considered too high by a large proportion of respondents (38%). Dissatisfaction with prices for long haul long distance calling while still significant at 22%, was much less marked. In both cases, dissatisfaction is undoubtedly fed by the heavy reliance rural residents and businesses place on long distance calling generally.

Several respondents added comments to their responses. Of these, 35 were generally complimentary, while 94 raised specific problems or complaints.

# CONCLUSION

# CONCLUSION

This paper has sought to do two things:

(1) establish the policy basis for a Canadian rural development strategy that focuses on telecommunications, and

(2) identify the particular needs and interests of rural telephone subscribers.
Chapter II discusses the former, and chapter IV, the latter.

While it is clear that rural Canadians are generally well-served by their various telecommunications providers in terms of quality of service, pricing seems to be a problem. Many rural Canadians consider themselves unfairly disadvantaged due, in particular, to the imposition of toll charges for calls over relatively short distances, and to the imposition of special distance charges for the provision of single line service.

Given the current pressures toward cost-based pricing, it is unlikely that rural customers will see much of an improvement in these areas. In the absence of public policy explicitly supporting the cross-subsidy from urban to rural areas, rural service providers will attempt to find ways of making their high cost customers pay more for basic service. This is particularly so in the context of competition, which tends to concentrate on high-profit (ie: high density) markets.

As telecommunications becomes more important for everyone, especially rural dwellers, in the emerging information-based economy, it is all the more critical for the economic health, and indeed viability of rural communities, that good quality basic service is not only delivered, but delivered at a price that is affordable for even the poorest members of society.

On another level, the economic development of rural Canada can be immeasurably enhanced by timely provision of sophisticated telecommunications facilities. The furnishing of more sophisticated services at reasonable prices will serve as an incentive for business to locate and remain in rural areas. Because telephone companies do not take into account the direct and indirect effects of such investment on the economy as a whole, they are likely to continue to concentrate their efforts on urban areas. Therefore, we recommend that public funding of telecommunications infrastructure be considered, where necessary, so as to lay the basis for a healthy and vibrant rural economy.

# APPENDIX A

# APPENDIX A

## CONSUMER SURVEY

PIAC mailed 10,000 surveys to rural addresses (as defined by Canada Post - see fn.55) in all provinces of Canada, proportionately by population. We received over 2200 responses in total.

This national sample is statistically significant at a 95% confidence level with a margin of error of ±2%. That is to say, the national sample is correct plus or minus 2%, 19 times out of 20.

The confidence level and margin of error for results specific to each province varies, depending on the sample size.

TABLE A1
Statistical Significance

| PROVINCE | NUMBER OF RESPONDENTS | CONFIDENCE LEVEL | MARGIN OF ERROR |
|---|---|---|---|
| National | 2,158 | 95% | ±2% |
| B.C. | 224 | 90% | ±6% |
| Alberta | 222 | 90% | ±6% |
| Saskatchewan | 162 | 90% | ±6% |
| Manitoba | 146 | 90% | ±7% |
| Ontario | 677 | 95% | ±4% |
| Quebec | 642 | 95% | ±5% |
| New Brunswick | 164 | 90% | ±6% |
| Nova Scotia | 175 | 90% | ±6% |
| P.E.I. | 7 | * | * |
| Newfoundland | 39 | * | * |

* Not statistically significant

Confidence levels and margins of error also differ by question, according to the response rate for that particular question.

TABLE A2
Confidence Levels

| Title of Table | Confidence Level | Margin of Error |
|---|---|---|
| Size of Community | 95% | ±2.1% |
| Satisfaction with Telephone Service | | |
| Local Service | 95% | ±2.1% |
| LD Over Short Distances | 95% | ±2.1% |
| LD over Long Distances | 95% | ±2.1% |
| LCA Too Small | 95% | ±2.2% |
| LCA Inappropriate Shape | 95% | ±2.3% |
| Transmission Quality | 95% | ±2.2% |
| Billing Clarity | 95% | ±2.1% |
| Service Speed | 95% | ±2.1% |
| Range of Service Available | 95% | ±2.2% |
| Other | 90% | ±8.0% |
| Satisfaction with Range of Services | 95% | ±2.2% |
| Destination of LD Calling | 95% | ±2.1% |
| Expenditure on LD Calling | 95% | ±2.1% |
| Quality of Service Ratings | 95% | ±2.1% |

TABLE A3
Responses by Province

| Province | Count | Count Percent |
|---|---|---|
| British Columbia | 224 | 10.4% |
| Alberta | 222 | 10.3% |
| Saskatchewan | 162 | 7.5% |
| Manitoba | 146 | 6.8% |
| Ontario | 677 | 31.4% |
| Quebec | 342 | 15.8% |
| New Brunswick | 164 | 7.6% |
| Nova Scotia | 175 | 8.1% |
| Prince Edward Island | 7 | 0.3% |
| Newfoundland | 39 | 1.8% |
| Total | 2158 | 100.0% |

TABLE A4
Responses by Size of Community

| Size of Community | Count | Count Percent |
|---|---|---|
| <100 | 189 | 9.0% |
| 100 - 500 | 277 | 13.2% |
| 500 - 1000 | 298 | 14.2% |
| 1000 - 2000 | 416 | 19.6% |
| 2000 - 3000 | 769 | 36.6% |
| 3000+ | 150 | 7.1% |
| Total | 2099 | 100.0% |

THE FOLLOWING QUESTIONS ARE FOR THE SOLE USE OF THE PUBLIC INTEREST ADVOCACY CENTRE. YOUR ANONYMITY IS GUARANTEED.

PLEASE ANSWER THE QUESTIONS BY CHECKING THE CORRECT COLUMN, CIRCLING THE CORRECT ANSWER OR WRITING IN YOUR OWN ANSWER.

1. Which of the following types of telephone service are available to you:

| | *Available* | *Not available* | *Don't know* |
|---|---|---|---|
| Dial telephone set | ☐ | ☐ | ☐ |
| Touch-tone | ☐ | ☐ | ☐ |
| Single-party service | ☐ | ☐ | ☐ |
| Two-party service | ☐ | ☐ | ☐ |
| Multi-party service | ☐ | ☐ | ☐ |
| Call Management Services (Call Display, Call Return, Call Trace, Call Screen) | ☐ | ☐ | ☐ |
| Call Waiting | ☐ | ☐ | ☐ |
| Call Forwarding | ☐ | ☐ | ☐ |
| Fax | ☐ | ☐ | ☐ |
| Other (please specify) _____ | ☐ | ☐ | ☐ |

2. Which of the following types of telephone service do you subscribe to:

| | *Currently subscribe to* | *Don't subscribe to* | *Would like to subscribe to* |
|---|---|---|---|
| Dial telephone set | ☐ | ☐ | ☐ |
| Touch-tone | ☐ | ☐ | ☐ |
| Single-party service | ☐ | ☐ | ☐ |
| Two-party service | ☐ | ☐ | ☐ |
| Multi-party service | ☐ | ☐ | ☐ |
| Call Management Services (Call Display, Call Return, Call Trace, Call Screen) | ☐ | ☐ | ☐ |
| Call Waiting | ☐ | ☐ | ☐ |
| Call Forwarding | ☐ | ☐ | ☐ |
| Fax | ☐ | ☐ | ☐ |
| Other (please specify) _____ | ☐ | ☐ | ☐ |

3. How would you rate your dependence on the telephone: (please circle a number)

| Not at all dependent | Somewhat dependent | Very dependent | Extremely dependent |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

4. What are the most important reasons to you for having a telephone? (please rate each reason from 1 to 5, with 1 being not at all important and 5 being extremely important)

| | *Not at all important* | | | | *Extremely important* |
|---|---|---|---|---|---|
| not to be isolated | 1 | 2 | 3 | 4 | 5 |
| personal emergencies | 1 | 2 | 3 | 4 | 5 |
| personal contacts | 1 | 2 | 3 | 4 | 5 |
| personal shopping | 1 | 2 | 3 | 4 | 5 |
| business use | 1 | 2 | 3 | 4 | 5 |

5. Do you have more than one telephone line? ☐ Yes ☐ No

   If so, is one line devoted to business? ☐ Yes ☐ No

**IF YOU HAVE MORE THAN ONE TELEPHONE NUMBER, PLEASE ANSWER THE FOLLOWING QUESTIONS TAKING INTO ACCOUNT ALL TELEPHONE LINES IN YOUR HOUSEHOLD.**

6. Do you use the telephone for business? ☐ Yes ☐ No

   If so, approximately what percentage of your telephone bill is business-related:

   ☐ 0% ☐ 30% ☐ 60% ☐ 80%
   ☐ 10% ☐ 40% ☐ 70% ☐ 90% +
   ☐ 20% ☐ 50%

7. What is your average monthly long distance telephone bill (in dollars)? **(please check the most appropriate range)**

   ☐ nil ☐ $20 - $30 ☐ $50 - $75
   ☐ 0 - $10 ☐ $30 - $40 ☐ $75 - $100
   ☐ $10 - $20 ☐ $40 - $50 ☐ $100 +

8. What do you use long distance for most **(please check one)**:

   ☐ Business calls ☐ Personal calls ☐ Equally business and personal calls

9. Is most of your long distance calling over distances of: ☐ Less than 100 miles ☐ Greater than 100 miles

10. Is most of your long distance calling: ☐ Within the province ☐ Outside the province

11. How satisfied are you with the following aspects of your telephone service **(please rate each aspect from 1 to 5, with 1 being very dissatisfied and 5 being very satisfied)**:

| | *Very Dissatisfied* | | | | *Very Satisfied* |
|---|---|---|---|---|---|
| cost of local service | 1 | 2 | 3 | 4 | 5 |
| cost of long distance calling over short distances | 1 | 2 | 3 | 4 | 5 |
| cost of long distance calling over long distances | 1 | 2 | 3 | 4 | 5 |
| local calling area too small | 1 | 2 | 3 | 4 | 5 |
| local calling area inappropriate shape | 1 | 2 | 3 | 4 | 5 |
| transmission quality | 1 | 2 | 3 | 4 | 5 |
| billing clarity / accuracy | 1 | 2 | 3 | 4 | 5 |
| service speed / quality | 1 | 2 | 3 | 4 | 5 |
| range of services available | 1 | 2 | 3 | 4 | 5 |
| other (please specify)_____ | 1 | 2 | 3 | 4 | 5 |

12. How would you rate the overall quality of telephone service that you receive?

   ☐ Very poor ☐ Adequate ☐ Excellent
   ☐ Poor ☐ Good

13. Which Province do you live in?

   ☐ British Columbia ☐ Manitoba ☐ New Brunswick
   ☐ Alberta ☐ Ontario ☐ Nova Scotia
   ☐ Saskatchewan ☐ Quebec ☐ Prince Edward Island
   ☐ Newfoundland

14. Approximately what size (population) is the community you live in?

☐ Less than 100 ☐ 500 - 1,000 ☐ 2,000 – 3,000
☐ 100 - 500 ☐ 1,000 - 2,000

15. Are you serviced by a small, independent telephone company (as opposed to the large province-wide company)?

☐ Yes ☐ No

16. What sort of business, if any, do you operate out of your home?

☐ Farming ☐ Service (consulting, writing, etc.)
☐ Manufacturing ☐ Other (please specify) _____

**THE FOLLOWING QUESTIONS ARE FOR THE SOLE USE OF RURAL DIGNITY OF CANADA. AGAIN, YOUR ANONYMITY IS GUARANTEED.**

17. Approximately how often do you go to the local post office?

☐ Daily ☐ Weekly ☐ Seldom
☐ Every 2-3 days ☐ Every 2-3 weeks

18. Do you think the post office should be privately or publicly run?

☐ Privately ☐ Publicly

19. Please add any comments that you have:

_____

_____

_____

_____

_____

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

**IF YOU ARE WILLING TO BE PERSONALLY INTERVIEWED FOR THIS STUDY, PLEASE PRINT YOUR NAME, ADDRESS AND/OR TELEPHONE NO. BELOW:**

Name: _____

Address: _____

_____

Tel.: _____

Fax: _____

**IF YOU WOULD LIKE FURTHER INFORMATION ON THIS STUDY, OR ON ANY OTHER WORK DONE BY PIAC FOR RURAL CANADIANS, PLEASE LET US KNOW.**

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