Urban History Review
Revue d'histoire urbaine

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The Social Diffusion and Use of the Telephone in Urban Central Canada, 1876 to 1914

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Citer cet article

Pike, R. M. (1989). Kingston Adopts the Telephone: The Social Diffusion and Use of the Telephone in Urban Central Canada, 1876 to 1914. *Urban History Review / Revue d'histoire urbaine*, *18*(1), 32–47. https://doi.org/10.7202/1017822ar

Résumé de l'article

L'adoption et l'utilisation du téléphone dans le centre urbain du Canada, de 1876 à 1914, sont ici étudiées dans le cadre des communications en général et des stratégies de marketing de la société Bell Telephone Company. Ce contexte sert de toile de fond pour l'étude de la diffusion du téléphone dans la société de Kingston, en Ontario, entre 1883 et 1911. L'étude est fondée sur les données fournies par les annuaires du téléphone et par les premiers répertoires de noms et de rues de la ville; elle est axée sur les caractéristiques socio-économiques et structurales des premiers abonnés, aussi bien les entreprises que les particuliers, étaient principalement composés de représentants de la classe commerçante et des professions libérales et utilisaient surtout le téléphone pour affaires et pour les besoins de leur organisme.

Kingston Adopts the Telephone:
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Robert M. Pike

Abstract

The adoption and use of the telephone in urban central Canada between 1876 and 1914 are explored within the context of the wider communications environment and the marketing strategies of the Bell Telephone Company. This context becomes the framework for a case study of the social diffusion of the telephone in Kingston, Ont., between 1883 and 1911. Utilizing telephone directories and early city directories, the case study concentrates on the socio-economic and organizational characteristics of early phone subscribers and the physical location of their phones. Both business and residential subscribers are shown throughout the period to have been drawn mainly from the commercial and professional classes in Kingston and to have used the phone mainly for institutional, work-related purposes.

Résumé

L'adoption et l'utilisation du téléphone dans le centre urbain du Canada, de 1876 à 1914, sont ici étudiées dans le cadre des communications en général et des stratégies de marketing de la société Bell Telephone Company. Ce contexte sert de toile de fond pour l'étude de la diffusion du télépone dans la société de Kingston, en Ontario, entre 1883 et 1911. L'étude est fondée sur les données fournies par les annuaires du téléphone et par les premiers répertoires de noms et de rues de la ville; elle est axée sur les caractéristiques socio-économiques et structurales des premiers abonnés, aussi bien les entreprises que les particuliers, étaient principalement composés de représentants de la classe commerçante et des professions libérales et utilisaient surtout le téléphone par affaires et pour les besoins de leur organisme.

General Historical Review

Foreword

This paper focuses on the socio-historical study of the diffusion and use in urban central Canada of a new communications technology, namely the telephone. Invented by Alexander Graham Bell in 1876, the telephone was quickly seized by the North American press as a marvellous addition to the existing means of distance communication. Indeed, looking back from the vantage point of 1914, the Dominion Comptroller of Statistics in Ottawa could claim that "it is like yesterday that [the telephone] was received with wonder," and he added that "it is doubtful if anyone, thirty five years ago had a vision of the intimacy with which the telephone would become identified with the industrial, commercial and social life of the world ... the telephone itself is a miracle; its adaptation to our needs is a romance."[1] The period of time about which the comptroller was reminiscing — the mid 1870s to 1914 — was clearly one during which the telephone ceased to be regarded with wonder and became, at least among the commercial and professional classes, a "taken-for-granted" form of instantaneous communication. However, until very recently, few social scientists considered the study of its early adoption and use as worthy of their attention. With rare exceptions, most accounts of telephone development in western countries have been corporate histories which take little account either of the instrument's social impact or of the socio-cultural conditions surrounding its adoption.[2]

American sociologist Claude Fischer has cited the lack of empirical studies on the social consequences of early telephone and automobile development as evidence of "the sorry state of the sociology of technology": a state which, he claims, is characterized by sweeping generalizations about social change rather than careful empirical research.[3] For Fischer, however, this complaint was a precursor to action, since he has subsequently written a series of papers on the early diffusion of these two means of transportation and communications.[4] The thrust of these papers is guided by the principle that "empirical work [on the social role of technological change] should begin with an effort to understand how and why technologies originally diffused; this would tell us about the conditions of their adoption and suggest why people used them."[5] Fischer's research into structural factors influencing the spread of the telephone in the United States and early corporate strategies aimed at selling the phone represents a significant break with most studies in this field. So also does the doctoral thesis of Michele Martin[6] which explores a wide range of social and cultural responses to the development of the telephone in central Canada between 1876 and 1920. Thus, it seems that the diffusion of this instrument of "polymorphous character"[7] is beginning, at last, to attract the interest of the sociological community. One supposes that concerns "about the marvels (and terrors) of the silicon-chipped society"[8] are leading us to look more closely at the social dimensions of earlier revolutions in communications technologies.

Following Fischer's example, a substantial part of this paper is devoted to a description and analysis of the data derived from an empirical case study — the adoption and diffusion of the telephone in Kingston, Ont., between 1883 and 1911. The case study is unique insofar as it uses the subscriber lists of the early city telephone directories in order to ascertain which social and institutional sectors of the city were early adopters of the new technology, and thereby to learn something of the major purposes for which it was utilized. However, because no such study can exist in a historical or theoretical vacuum, the discussion of its findings is preceded by a review of late 19th-century patterns of distance communications in Canada and of early corporate trends in telephone development and sales policies.

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This review is intended to "set the stage" for the empirical study, and also to illustrate four sets of general propositions about the adoption and diffusion of new communication technologies which are derived from the study of the early spread of the phone.

Introduction:
Early Canadian Communications and the Role of the Telephone

In his book on the mass media in Canada, John Irving has suggested that "if Canada may be described as the child of European civilisation and the American wilderness, the development of the system of communications which exists in the country today must rank as among the most creative and constructive enterprises of that civilisation."[9] Some features of the enterprise — for example, the travels of the fur traders and the realisation of the "National Dream" in the completion of the transcontinental railway —are well documented in the historical literature and have become an established part of the national ethos. Other features are only now beginning to receive some attention from scholars, despite the vital roles they have played in the process of settlement and nation-building. One such relatively neglected feature is the development of an efficient national system of postal communications between the mid 19th century and the 1920s: a system which, in turn, relied heavily on the expansion of the railways and connecting networks of roads.[10] Another was the invention of the telegraph, which, inaugurated in Canada in 1846, allowed for a separation of techniques of communications from techniques of transportation. This separation had, as Irving notes, "far-reaching socio-cultural implications (which) have scarcely been thought of, much less investigated."[11] These words ring almost as true today as they did when Irving wrote them 25 years ago.

Though technically separated from transportation, the telegraph was, none the less, functionally indispensable to other modes of transportation and communications: for example, as Paul Rutherford notes, it was vital to both the coordination of the operations of the transcontinental railway and to the swift presentation of national and world news in the hitherto parochial press.[12] However, unlike the telephone, the telegraph was restricted by its technology to being a sophisticated "signalling device" related to the earlier heliographs and semaphores. The telegraph transmitted information faster than it had ever been transmitted before, but there "still remained the expert task of reducing words to dot-and-dash signals at one end of the line and translating these signals back at the other end of the line."[13] The need for expensive, trained operators, combined with the limited number of telegraph office locations and the high cost of message transmission, made the telegraph primarily a channel for official and business messages. This was so, notwithstanding the fact that attempts were made in large urban centres to adapt the telegraph to purposes that the telephone later met far more efficiently. For example, as Martin has noted, big Canadian cities did possess complete telegraph networks in the 1870s, including some public telegraph facilities that were linked to emergency services (the firehall and the police station).[14] Indeed, some wealthy families even maintained residential telegraphs which were designed, through a rather complex communications process, to put them swiftly in touch with these services as well as other facilities, including some local merchants.[15]

In an advertisement produced in 1898, the Bell Telephone Company summed up the most apparent advantage of the phone over other means of distance communication: "The mail is quick, the telegraph is quicker, but the long-distance telephone is instantaneous and you don't have to wait for an answer."[16] This "simultaneity" in a convenient form of two-way, oral-aural communication, whether locally or over a substantial distance, has been described by Stephen Kern as an aspect of "the technology of speed" which strongly influenced the concepts of time and space between 1880 and 1918.[17] Certainly, it was an attractive feature of the phone for those who needed to communicate messages that required an immediate response by word or deed, and the attractiveness became greater as the phone networks expanded. Another advantage, though mainly for the business community, was the opportunity that the phone gave "in the planning and coordinating of business activity, especially where delicate and, at times, dubiously legal manipulations were involved":[18] that is, an enticing prospect of privacy unencumbered by intermediary telegraph encoders and decoders. Both simultaneity and privacy (secrecy) were important selling points for the phone, although, ironically, both were frequently compromised by the limitations of the existing technology. On long-distance calls, simultaneity was often only achieved after long delays in making connections and sometimes rendered useless by poor reception. Privacy could be lacking on party lines, and telephone operators were often accused (usually unfairly) of listening to subscribers' conversations.[19]

Despite these early problems, the phone's technical ease of usage, its locational flexibility, and its direct two-way transmission of information gave the instrument the potential to act not unlike an "instantaneous postal system," providing an easy means for both business and social communications to the mass of the population. However, as we shall see, such a democratic role for the phone remained a dream until well beyond the period covered by this paper. Likewise, another "democratic dream" — that the phone would become a medium for public mass communications as much as, or more than, for private communications — also caught the public imagination during the earliest years of its development, but was ultimately of limited significance in North America. The dream — essentially the use of

the phone as a mode of broadcasting — was initially encouraged by a common sales technique of the early Canadian and American telephone companies which was to demonstrate that music played in one location could be heard distinctly in another by means of the phone. In some countries, opera singers, brass bands, weather reports, time announcements, and newspaper dispatches were later added to the phonecasting repertoire. None the less, this initial view of the use of the phone was not a long-term theme in the marketing and sales of phones in North America, although it pre-dated the development of radio as a mass medium by more than 40 years.[20]

Early Telephone Systems and the Spread of the Phone

Alexander Graham Bell transmitted the world's first telephone message from Paris, Ont., to Brantford in 1876. Four years later the Bell Telephone Company was incorporated with its headquarters in Montreal, and during the early decades of telephone development its empire covered most of inhabited Canada. However, Bell Telephone withdrew from the Maritimes and British Columbia during the late 1880s in order to consolidate its interests elsewhere, a move that left the company with a dominating control in Ontario, Quebec, Manitoba and those parts of the Northwest that became Alberta and Saskatchewan. Thus, the early history of telephone development in Kingston and most other major urban centres in central Canada was inextricably linked to the fortunes of Bell Telephone. In contrast, a significant spread of telephone services into the region's small towns and country areas only occurred during the first decade of this century, and largely as a result of the development of small independent phone companies. Bell's early sales strategies focused on the lucrative urban and long-distance markets, and its monopoly over the latter gave the company a powerful edge in competition with serious corporate rivals. Many of them

were swiftly undercut and ultimately absorbed.

The speedy diffusion of such communication innovations as the radio and television has created a popular view that new developments in the communications field (notwithstanding considerable consumer resistance to pay television and videotex) will always find a large and lucrative market. However, in contrast, the early consumer response of Canadians to the advent of the telephone, while buoyant by contemporary European standards,[21] was hardly indicative of the existence of a potential mass demand for telephone services. For example, in 1887, 11 years after the invention of the phone, there was only about one phone subscriber in every 400 Canadians, and 24 years later a gradual diffusion of the instrument had only brought the number of phones to 5 per 100 Canadians. Thus, the growth of the market during the first 38 years was steady, but limited in comparison with the "mini-boom" from about 1914 to 1926, which brought the phone into an estimated 40 per cent of Canadian homes (50 per cent of urban households and 28 per cent of rural households) by the mid 1920s.[22] In turn, this mini-boom was followed by a bust with the reduction in numbers of phone subscribers during the Depression, so that the household penetration rate achieved by the early 1940s showed no significant advance over the rate for the mid 1920s. Some basic statistical data on telephone expansion which indicates these trends is provided in Table 1. Table 2 puts them into a broader historical perspective by showing that achievement of essentially universal household access to the phone, as well as of a substantial measure of provincial uniformity in rates of household access, has been largely a product of the past 30 years.

The review of the diffusion of the telephone makes abundantly clear that the period covered by our Kingston study was not one during which Bell Telephone achieved a mass market, nor indeed did the company

Table 1
Growth in Number of Telephones. Canada: 1880-1985

Year	Number ('000s)	Instruments per 100 Population
1880	2.1	-
1886	13.0	0.3
1891	24.2	0.5
1893	33.5	0.6
1898	43.5	0.9
1901	63.2	1.2
1904	95.0	1.8
1909	239.0	3.5
1911	354.0	4.8
1916	599.8	7.5
1921	919.3	10.4
1926	1,201.0	12.6
1931	1,364.2	13.0
1936	1,266.2	11.5
1941	1,562.2	13.5
1946	2,026.1	16.3
1951	3,113.8	21.8
1956	4,499.3	27.5
1961	6,014.0	32.6
1966	7,893.2	39.0
1971	10,268.8	47.3
1976	13,885.0	59.9
1981	16,943.7	69.6
1983	16,630.0 1	66.5
1985	15,974.0 1	63.2

Company-owned telephones only. Excludes those purchased from independent suppliers. No statistics on the total numbers of telephones are available beyond 1985.

Source: *Historical Statistics of Canada*, ed. M. C. Urquhart (Toronto, 1965), 559; Statistics Canada, Telephone Statistics (annual).

seek to achieve it. A major inhibiting factor to widespread early phone diffusion was the annual cost of phone rental which, according to Norris, was equivalent to about a tenth of a Canadian manufacturing worker's annual income during the period 1880-87.[23] In 1900 the yearly rental of a residential phone in Kingston was equivalent to about two weeks' pay for a male public school teacher, three weeks' for a skilled craftsman, and five weeks' for a starting Bell telephone operator.[24] Such a high cost level — dictated mainly by a heavy capital outlay and the need for constant technical refinements[25] —

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Table 2
Households with at least One Telephone by Province, 1953-1985 (Percentages)[2]

Province[1]	Year 1953	1956	1961	1966	1971	1976	1985
Newfoundland	22.7	27.5	36.8	61.2	82.8	90.7	93.8
P.E.I.	41.6	41.6	52.2	68.0	76.9	87.5	88.1
Nova Scotia	52.2	60.6	70.9	80.0	83.0	92.5	96.7
New Brunswick	63.7	57.0	73.1	84.0	86.5	94.8	94.9
Quebec	67.6	75.9	84.3	93.0	92.7	96.6	98.7
Ontario	80.2	85.6	91.9	95.2	96.3	97.4	99.0
Manitoba	61.9	69.7	82.7	91.8	94.8	95.8	97.2
Saskatchewan	53.1	58.0	77.9	85.8	92.1	96.4	97.3
Alberta	48.2	55.6	78.6	88.5	94.6	97.0	98.0
British Columbia	61.9	74.4	86.4	92.9	94.5	95.8	97.7
Canada	66.8	73.7	84.5	91.6	93.8	96.5	98.2

[1] Excludes Yukon and the Northwest Territories.
[2] Data include all residential telephones including those on party lines.

Source: Dominion Bureau of Statistics, Household Facilities and Equipment (annual) for 1953 and 1956; Telephone Statistics (annual) for subsequent years.

was sufficient to dampen the demand for the phone, despite the early adoption of "flat rate calling," which allowed phone renters to place an unlimited number of calls without extra charge within defined calling areas. The "real costs" of renting a phone declined gradually after 1900 as Bell was able to spread major capital expenditures over a growing, and increasingly prosperous, consumer market.[26] Even so, the possession of a phone remained beyond the financial means of most people until after World War I.

Similarly, although the development of long-distance phone communications by Bell Telephone was remarkably swift (and, indeed, financially subsidized until 1923 by Bell through the rental receipts from local exchange service)[27], the cost of a long-distance call was still sufficiently high to make it a luxury for most people. Thus, as early as 1883 it was technically possible for a Kingston phone subscriber to make a five-minute call to Toronto for 50 cents, and to Hamilton for 75 cents. By 1895 most well-populated parts of eastern Ontario and Quebec were accessible from western Ontario and vice versa, with the Toronto-

Montreal daytime charge for a three-minute call being $2.00.[28] The technical achievement of the long-distance network was an important milestone in electronic communications, but when it was placed in the context of typical monthly wages in the $20 to $50 range, the average citizen would hardly have considered it to be a serious alternative to the cheap and reliable postal service.

Selling the Telephone

Michele Martin has shown that early Bell marketing strategies focused upon attracting high income people to the use of the telephone. These strategies were obviously linked to the company's costing policies and were bolstered by the "ideological assumption" of Bell managers that low income people did not need a telephone, and did not appreciate its value.[29] Martin challenges this assumption, pointing to cases where people from low income neighbourhoods in Toronto about 1900 expressed a desire for household telephones but were not considered by Bell to be a good market risk. In her words, the company

chose to satisfy the group of subscribers who could afford the telephone, the dominant class, in giving the product a use value that would represent a useful element for the increase of their wealth and their power."[30] In other words, subscribers who could afford the phone at prevailing rates were seen as those most likely to yield revenue and profits to the company. Bell served the interests of its shareholders rather than a less tangible "public good." In that service, aided by a careful eye on costs and modern management practices, the company soon proved to be very successful.[31]

Given this "private interest" orientation and the nature of the preferred clientele, it is not surprising to find that early Bell advertising in both Canada and the United States focused mainly on "instrumental" themes — notably the value of the phone to businessmen and for household convenience — rather than such "sociability" themes as keeping in touch with family and friends. Indeed, Fischer has undertaken a content analysis of dominant themes in telephone advertising by Bell Canada and AT&T during the years before World War I and the two decades following the war, his main conclusion being that the Bell system did not discover "sociability" as a major advertising theme until roughly the mid 1920s after a substantial expansion of the residential market.[32] On the contrary the use of the phone for purposes of social interaction was not just ignored in the early advertising but actively deplored by Bell executives (and some subscribers) as a frivolous use of the technology.[33] Fischer suggests that this attitude was certainly framed by certain economic and technical considerations — for example, "visiting" on the phone in order to gossip tied up party lines — but he also places substantial emphasis on the cultural "mind-set" of early telephone men. They were often people who had previously worked in the telegraph industry, and their views of appropriate telephone use were, he suggests, strongly influenced by the uses of the telegraph: business communiques, orders, alarms, and

calls for service.[34] In short, they repressed telephone sociability because it did not fit their understanding of how the technology was supposed to be used. Fischer's explanation for the attitudes of early telephone executives suggests that the cultural heritage carried over from existing communication forms may restrict the perceived uses of a new communications medium to a narrowly defined range. Senior executives, such as President Vail of AT&T and President Sise of the Bell Company of Canada apparently did not believe that people had a "natural" need for the telephone, but rather that such need (which their publicity defined in instrumental terms mixed with an appeal to social prestige)[35] had to be created by the industry. Thus, in 1909 a Bell advertisement actually claimed that the company had invented the business uses of the phone and convinced people that they were uses.[36] The claim , although seemingly far-fetched, contains an element of truth insofar as some initial consumer resistance to the high-cost and technically limited medium was evident even among the official and business class.[37] None the less, this resistance does not appear to have been too hard to overcome: Bell's adroitness in fostering consumer demand was facilitated by a considerable measure of public fascination with the social and economic possibilities of the new technology.

Some Propositions on Technological Diffusion and an Introduction to the Kingston Study

The review of socio-historical research on the early diffusion and sales of the telephone allows for the formulation of a series of general propositions about the introduction of new communications technologies which can be tested in the light of more recent communications innovations. These propositions are as follows:

1 When a new communications technology is introduced, it may initially be expected by the populace and the media to be used substantially for purposes that later turn out to be of limited importance. Such was the case with the use of the phone as a broadcasting medium.

2 The cultural heritage and practices carried over from the existing communications forms may "condition" potential users and marketers of the new technology to see it as a natural extension of the previous forms (the phone as an extension of the telegraph). However, such a conditioning process may unnecessarily restrict the dominant uses of new technology to a narrowly defined range.

3 Notwithstanding the possibility that the sales of a new communications technology may be stimulated by its cultural linkage to existing communications forms, there is still no guarantee that its advantages over these forms will be self-evident to the majority of potential customers. The uses of the technology may, therefore, have to be "sold" (and in some measure created) by the marketers in order to overcome sales resistance. The validity of this proposition in the case of early phone marketing was touched upon in the previous section. It would also be valid to an understanding of current corporate efforts to sell cellular telephones.

4 The diffusion of a new communications technology among a population is not likely to be socially or regionally uniform, nor is this diffusion always free of contradictions and reversals in consumer demand. Thus, the documentary evidence suggests that the early Bell phone subscribers were drawn mainly from the wealthier segments of urban communities. Later, after the substantial expansion of the phone clientele during the 1920s, the numbers of subscribers fell substantially during the Depression years.

In addition to assisting in the formulation of these propositions, the historical review provides certain important "pointers" towards the expected findings of an empirical study of early urban phone subscribers to the Bell system. For example, one would expect that they would tend to be institutional or individual subscribers who were mainly interested in the use of the phone for business purposes (although, according to C.S. Clark, who wrote *Of Toronto the Good* in 1898, money and its acquisitions easily bought high status among the urban haute bourgeoisie of the period:[38] from this perspective, a telephone might well have constituted an element of conspicuous consumption à la Veblen as well as offering more utilitarian functions). One would also expect that the individual subscribers would be drawn from the more affluent segments of the community. However, although Martin's documentary research on the development of the early telephone system in Ontario and Quebec is quite exhaustive, there remains the need to support — and possibly expand upon — the evidence of documentary sources through actual case studies of urban phone diffusion. Such is the purpose of the Kingston study. Its aims, methodology and principal conclusions are outlined below.

The Telephone in Kingston, 1883-1911

The Goals and Methodology of the Case Study

Kingston was a small city in the late 19th century, with a population of 14,000 in 1881 and just under 18,000 in 1901. Nevertheless, according to one recent account of the city's development, Kingston was typical of many other urban centres of the period in its social structural transformation and, according to a recent study, "exuded the major structural trends of Canadian industrial-urban capitalism in the 1880's and 1890's ... being a locus of industrial capitalist activity with a substantial manufacturing and mercantile function.... It was a microcosm of the larger society."[39] This typical urban structure makes

it probable that the findings of a case study of early telephone adoption in Kingston can, in some measure, be generalized to other urban centres of central Canada at the same period. For example, as shown in Table 3, the rate of telephone adoption per 100 of Kingston's population was somewhat lower than in Toronto between 1881 and 1911, but was similar to Montreal, which was the home of the Bell Company and the setting for much of its early marketing activity. Such a comparison does not, however, capture differences in the social and economic dynamics of city life which may have influenced the rates of adoption and use of the new technology. For example, Kingston experienced a far slower rate of population growth between 1881 and 1921 than most other major urban centres of the province; indeed it remained essentially a pedestrian city with limited need for complex transportation and communications services within its boundaries throughout the period under review.[40] On the other hand, the city was strategically located on central Canada's "main street" — the Quebec-Windsor axis — and between the burgeoning metropolitan centres of Toronto and Montreal. This location factor may have boosted telephone adoption, especially for long-distance purposes, just as the small scale of the city may have reduced the phone's potential value as a means of local communications.

The case study itself consists of an analysis of all local organizational and individual subscribers who were listed in the Kingston phone directories in each of four years: 1883 (the first year that the local directory was published), 1891, 1901, and 1911. The three latter years were national census years which facilitated some limited comparison between data on the subscribers and the wider city population from which they were drawn. The main purpose of the case study was to ascertain the primary motives for early phone adoption (and hence, the main functions of the early phone as a means of distance communication) by examining the socio-economic and organizational characteristics of the subscribers and the physical location of their phones. Two related purposes were, first, to ascertain the nature of the "pioneering adopters" — those organizations and individuals subscribing to the phone within a few years of its commercial availability — and, secondly, to see what changes occurred over time in social access to the instrument. The main criteria used to determine levels of social access were: the absolute growth in numbers of phones and subscribers relative to city population, the movement of phones into residential locations, and changes in the socio-economic composition of the subscribing population.

Some occupational and organizational information on subscribers and phone locations can be gleaned directly from the early telephone directories. For example, the names of individual subscribers were often followed by information on phone location or subscriber's occupation (e.g. "Breck, J. A., Residence, Union St," and "Brame, H., Undertaker, Princess St"). However, such information would not have been sufficiently comprehensive to permit a detailed exploration of the characteristics of the early phone subscribers unless supplemented by reference to the annual street directories published during this period. They provide the researcher with much more specific information on addresses, status of dwelling as residence or workplace (or both), and occupations of residents. For example, confronted by the 1891 telephone book entry which lists a number for an "R.E. Kent of Bagot St." but no additional information, one can turn to the street directory in order to ascertain that the phone was located in the residence of R.E. Kent who was a banker with, as the telephone book shows, another phone at his office.[41]

Taken together, the telephone book and the street directory allow us to learn a good deal about the dominant uses of the early phone and about its subscribers. Much of what we learn tends to support the conclusions of such scholars as Martin and Fischer, but our own conclusions often must, none the less, be based upon enlightened guesses about people's motives for phone installation and use. For example, since a residential phone was a rare item in Kingston in 1891, it can be assumed that a businessman such as R.E. Kent maintained one primarily because he wished to facilitate communication with his office and with other business contacts. In other words, his primary motive for having the residential phone was probably instrumental, especially if this is taken to include a businessman's awareness of the social and economic value of being widely recognized as "keeping up with the times." Such is not to suggest that Kent and family members (and indeed, surreptitiously, the servants) did not sometimes use the phone in order to catch up on the latest gossip.[42]

Table 3

Year	Kingston's Population	Number of Telephones	Per 100 Population	Telephones Per 100 Population	
				Montreal	Toronto
1881	14,091	107(1883)	0.8	0.7	0.9
1891	19,264	360	1.9	3.1	2.7
1901	17,961	512	2.9	3.4	4.1
1911	18,874	1,382	7.3	7.5	10.2

Source: Bell Canada Statistics and Censuses of Canada.

Telephone Directory - 1883

November 1883

KINGSTON AGENCY.

Central Office:—Ontario Street.

OFFICE ALWAYS OPEN.

C. W. STRINGER, Acting Agent.

Rules relating to Messages, &c., will be found on inside of Cover

Rates from Kingston to	For Five-Minute Conversations, Any Time In the Day	For Messages per word, Day Only	Free Subscribers	Non-Subscribers here
Belleville, Lesoronto, Napanee...	.25	50	1 cent	
Bowmanville, Brighton, Cobourg, Colborne, Lindsay, Millbrook, Newcastle, Oshawa, Peterboro, Port Hope, Toronto, Trenton, Whitby	.50	.75	1 "	
Dundas, Galt, Guelph, Hamilton, St. George	.75	1.00	2 "	
Brantford, Ingersoll, London, Paris, St. Thomas, Woodstock			2 "	
Glanworth, Hespeler, Ommmee, Palermo, Springfield, Troy, Waterdown (see last pages of book)				

SUBSCRIBERS.

Anglin, W. B., & S., Saw and Planing Mill, Bay St
Bajus, P., Brewery, Wellington St
Bank of Montreal, King St
Bawden & Machar, Barristers, King St
Birmingham, C., Residence, Sydenham St
Brame, H., Undertaker, Princess St
Breck, J. A., Residence, Union St
British American Hotel, Clarence St
British Whig, King St
Britton & Whiting, Barristers, Clarence St
Burnett House, Ontario St
Campbell, Col., Residence, King St

Should the Transmitter be out of order, it is possible to speak through the Hand Telephone.

Carruthers Bros., Financial Agents, Clarence St
Carruthers, J., Residence, Earl St
Carruthers, J. B., Residence, West St
Chown & Cunningham, Stove Foundry, King St
Chown & Cunningham, Stoves and Tinware, Bagot St
City Hotel, Princess St
Court House,
Cousineau, F. X., Dry Goods, Princess St
Crawford, J., Grocer, Princess St
Crothers, H. & W. J., Bakers and Confectioners, Wellington St
Daily News, Princess St
Drennan, W. M., Furniture Manuf., Princess St
Duff, Col., Residence, Princess St
Federal Bank, Wellington St
Fenwick, G. S., Residence, King St
Fenwick, Dr. K. N., Residence, William St
Fenwick, Hendry & Co., Wholesale Grocers, Ontario St
Folger & Hanley, Ticket Agents, Brock St
Gildersleeve, C. F., Steamboat Office, Clarence St
Grand Trunk Railway, Freight Office, Johnson St
Grand Trunk Railway, Station, Montreal St
Great North-Western Telegraph Co., Clarence St
Greet, Thos. Y., Residence, Barrie St
Griffin, G., Post-Office, Clarence St
Gunn, A. & Co., Wholesale Grocers, Ontario St
Harty, Wm., Residence, Johnson St
Henderson, J. S., Grocer, Brock St
Hendry, J. A., & Bro., Wholesale Grocers, Ontario St
Hewitt, Col., Residence, Emily St
Hobart, G. S., Druggist, Princess St
Hoppins, A., Residence, Bagot St
Horsey, R. M., Hardware, Princess St
Irwin, Dr. C. A., Residence, Cor. King and William Sts
King, J. Geo., Druggist, King St
Kingston Car Works, Montreal St
Kingston Cotton Manufacturing Co.
Kingston Hosiery Co., King St. West
Kingston & Montreal Forwarding Co., Wharf
Kirkpatrick, Geo. A., Residence, Emily St
Kirkpatrick, J. S., Residence, King St
Kirkpatrick & Rogers, Barristers, Ontario St
Knight, A. P., Residence, William St
Leslie, Wm., Jr., Residence, George St
Locomotive Works, Ontario St
Loynes, S. & Co., Grocers, Princess St
MacDonnell & Mudie, Barristers, Clarence St
MacNee & Minnes, Wholesale Dry Goods, Princess St

Complaints, relating either to the Instrument or to unsatisfactory service, should be made to the Local Agent personally, by mail, or by Telephone.

Martin, W. C., Opera House, Princess St
Merchants Bank, King St
McCammon Bros., Livery Stable, Princess St
McGill, S. C., Residence, King St
McKelvey & Birch, Plumbers, Brock St
McMahon Bros., Hardware, Princess St
McMillan John, Malster, King St
Muckleston, J., Hardware, Princess St
Muckleston, J., Residence, West St
Nisbet, F., Bookseller and Stationer, Brock St
Oliver, Dr. A. S., Residence, King St
Parkhill, J. Y., Grocer, Princess St
Phalen, Dr. D, Residence, Bagot St
Police Magistrate, Residence, Princess St
Police Station, Ontario St
Power & Son, Architects, Wellington St
Rathbun, H. B. & Sons, Lumber Merch'ts, Beverley St
Rathbun, H. B. & Sons, Lumber Merchants, Queen St
Redden, James, Grocer, Princess St
Rees Bros., Bakers and Confectioners, Princess St
Reid, James, Furniture Manufacturer and Undertaker
Richardson, Jas. & Son., Grain Dealers, Wharf, Princess St
Richmond & Boyden, Dry Goods, Princess St
Robertson Bros., China and Glassware, Princess St
Robertson, Geo. & Son, Wholesale Grocers, Ontario St
Robertson, B. W., Residence, Brock St
Rockwood Asylum, Portsmouth
Royal Military College, Pittsburg
Sabre Bros., Hay Dealers, Hay Market
Saunders, Dr. J., Residence, King St
Scott, N K., Grocer, Princess St
Skinner, Henry, Wholesale Druggist, Princess St
Smythe, E. H., Barrister, Ontario St
Smythe, E. H., Residence, West St
Spottswood, Geo. A., Saloon, 86 Wellington St
Stevenson & Co., Piano Manufacturers, Ontario St
Swift James, Coal Dealer, St. Lawrence Wharf
Swift, J., Residence, King St
Tete du Pont Barracks, Ontario St
Union Hotel, Ontario St
Waddington, Wm., Butcher, King St
Wade, Henry, Druggist, Brock St
Walkem & Walkem, Barristers, Clarence St
Water Works Department, Ontario St

Should it be necessary, after connection is made, for either party to temporarily leave the Telephone, the other party to the conversation must keep Telephone to ear, to prevent being disconnected at Central Office. Do not ring on returning to complete conversation.

Figure 1: First Kingston Telephone Directory, 1883, Initial Page.

Courtesy of Bell Canada Telephone History Collection

Phone Expansion and Location

We have already noted that the period
covered by the Kingston study was not one
during which Bell Telephone achieved a
mass market for the phone. Not surprisingly,
as a comparison of the per capita figures in
Tables 1 and 3 attest, urban phone diffusion
rates were higher than the national rates.
But, despite the view of Bell executives that
the Kingston telephone market had been
unpromising at first but had "done well" by
the mid 1880s[43], the locational information
contained in Table 4 underlines both the
relatively slow growth in telephone ownership
in the city between 1883 and 1901 and also
the clear dominance of the "business
phone."[44]

Three-quarters of the earliest phones (those
in place by 1883) were located in places of
employment, and this proportion never fell
below 60 per cent prior to 1901. Only with
the expansion of telephone subscribers
between 1901 and 1911 did the residential
phone come to dominate the market, with the
number of households with phones
increasing from just about 5 per cent to 15
per cent over the period.[45]

Conclusive though this locational data is on
the early primacy of the business phone, it
probably underestimates the extent to which
predominantly instrumental motives (those
related to business activities, crisis
management, and essential public services)

dominated subscribers' decisions to install
phones in places of employment and in
residences. This point is illustrated in Table 5,
which shows some changing patterns of
phone ownership over the period. Thus, if we
use 1891 as an illustrative year, there were a
total of 327 subscribers to phones in
Kingston (the difference between the number
of subscribers and the number of phones, as
shown in earlier tables, being largely
accounted for by subscribers who rented
more than one phone). Of these subscribers,
111 (rows i, ii, and iii of the table) had phones
in their residences, but 29 of these residential
subscribers were explicitly using them for
work-related purposes (the most common
example being physicians who had a single
phone number for their "residence and
office") while another 42 also had business
phones under their name, or their family
name, at places of employment. As we have
assumed in the case of R.E. Kent, access
both to a residential phone and to one or
more business phones suggests strongly that
the main motivation for the installation of the
residential phone was the ability to
communicate easily with the office and
business associates elsewhere. If so, this
means that 71 of the 111 residential phone
subscribers probably maintained a phone at
home largely for instrumental reasons, and
indeed this figure is much higher (see Table
6) if we take subscribers with residential
phones who were connected, in the capacity
of owner, manager, agent, or other employee,

Table 4
Telephone Locations in Kingston, 1883-1911

Location	1883	%	1891[2]	%	1901[2]	%	1911[2]	%
Residence[1]	25	23.3	111	31.2	197	39.1	689	57.8
Place of Employment	82	76.7	245	68.8	308	60.9	503	42.2
	107	100.0	356	100.0	505	100.0	1,192	100.0

[1] Located at residential address, whether or not defined as "residence" in Bell directory.
[2] Excludes pay phones. In 1911 excludes extension phones that are included in data in Table 1.

to one of the relatively rare places of employment where a phone existed.

The pattern described above changed considerably during the following 20 years as witnessed by the absolute and relative growth in the numbers of residential phone subscribers, especially during the first decade of this century. However, perhaps more significant is the large proportionate increase between 1901 and 1911 in the numbers of subscribers with residential phones who had no explicit connections with a business phone. This change was likely not as radical as it seems: for example, professors and members of such "helping professions" as nurses and ministers appear in increasing numbers among residential subscribers during the first decade of the century, and one may reasonably surmise that facilitation of work-related activities was still a vital consideration in phone installation. None the less, as the phone network expanded and as family, friends, and colleagues became more readily accessible through it, the "instrumental-sociability" distinction (and the primacy of the former) among the dominant motives for having a residential phone must have become increasingly blurred. One suspects, therefore, that phone owners in Kingston and other urban centres discovered "sociability" as a

major feature of phone usage long before it became a selling-point in Bell campaigns.

Indeed, according to a Scots journalist who reported back to the Glasgow *Citizen* on his visit to Canada in 1910, "the telephone [in Canada] is literally used for everything constantly and continually ... the first operation you have to perform in arriving in a Canadian town is to ring up your friends on the telephone and let them know where you are. To omit this is unpardonable neglect."[46] The Scots journalist was canny in perceiving the social uses of the telephone; but his social circle in Canada clearly consisted of that small minority of people who could be reached by phone in their homes in 1910. This comment applies, of course, to the receivers of phone messages. Senders of such messages had slightly more access to the phone in the sense that they could, if not subscribers themselves, use one of a number of public phone stations. Kingston and environs had four such stations in 1891 and three in 1906, all located throughout that period in the same grocery stores. Like the sub-post office, a public pay phone attracted customers to the store, and was, therefore, an economic asset to the proprietor. However, as Martin points out, a call from a public phone was expensive — equivalent at five cents a call to the price of half a pound

of butter in 1892 — and hence not much likely to be used by low-income people except in emergencies.[47] For this reason, not to mention the inconvenience of walking to the store, the pay phone of this period offered no significant "democratic alternative" to private service.

Who Were the Subscribers? Their Socio-Economic Characteristics

In this section we look at some of the characteristics of business and residential subscribers and thereby attempt to gain a clearer picture of early patterns of phone access and use. Since the earliest phones were mainly in places of employment, the first part of the analysis will focus mainly on these "business subscribers" but will pay particular attention to the "pioneering adopters": that is, the small number of both business and residential subscribers leasing a phone in 1883. The second part will focus on the socio-economic characteristics of residential subscribers between 1891 and 1911.

The Pioneering Adopters and Subsequent Business Subscribers

The first phone leased in Kingston was installed to connect the Rockwood Mental Asylum and the superintendent's residence in 1879. This pioneering installation illustrates one of the major purposes (instantaneous communication in case of emergency) for which the new invention was considered to be ideally suited. By 1883 there were 97 business and residential subscribers, the overwhelming majority of whom could be

Table 5
Telephone Subscribers:
Numbers and Patterns of Phone Ownership

	1883	1891	1901	1911
Total Subscribers With:	97	327	437	985
Residence Phone Only[1]	19	40	122	436
Dual Residence/Business[2]	—	29	36	130
Residence and Business Phone[3]	6	42	39	123
Business Only[4]	72	216	240	296

1 Stated as "residence" only.
2 Phone in residence used explicitly, in whole or part, for business purposes.
3 Residential phone subscribers with one or more business phones under their name or family name
   in other location.
4 Business subscribers with no evident residential connection.

Table 6
Estimated Number of Residential Subscribers Connected, Through Their Place of Employment, With a Business Telephone as Owner or Manager, or Agent, or Other Employee

1883	1891	1901	1911
17	75	75	164

classified into one of the following five broad institutional and functional areas:

Area	Number of Subscribers
Health-Related Services	12
Defence and Public Order	14
Transportation and Communications	11
Manufacturing, Financial and Sales	55
Personal Service	4
Unknown	1
Total	97

A more detailed description of the actual subscribers in each of these areas, and some of their probable reasons for early adoption of the phone, is provided in Appendix A. Suffice it to note here that they encompassed most of the major manufacturing and financial organizations of the city, as well as all the major organizations concerned with the movement of goods, people, and messages. In addition, certain "key installations" such as the Royal Military College, military barracks, court-house, police station, and asylum were "on line" and, as in the case of the latter, phone communications was sometimes provided between the offices and the residences of the chief executives of these installations. Finally, certain occupational categories — notably, physicians, druggists, and grocers — stand out as pioneering adopters of the phone. Taken together, the individual components of this small network of early phone subscribers made up the "bare bones" of a potentially complex communications network, both within Kingston and beyond, which could well serve the kinds of instrumental activity much facilitated by instantaneous communications and response.

Moving beyond these pioneering adopters of the phone, we must deal briefly with subsequent trends in the business phone market. A few features of business phone

adoption during the following 30 years are worthy of mention:

1. Despite the growth in the number of business phones, there were significant variations in rates of adoption across relevant occupational and institutional categories. Thus, as shown in Table 7, all Kingston hardware merchants and flour and feed dealers had phones in 1891, as did the majority of physicians, barristers, druggists, grocers, and furniture dealers (who were often also undertakers). On the other hand, phones were clearly still not considered necessary to successful enterprise in the dry goods business, gentlemen's clothing stores, or the majority of hotels. However, with the passing of time many of these concerns did acquire phones, and there was also a substantial increase between 1901 and 1911 in the numbers of phones in hitherto "unconnected" organizations (social clubs and societies, charitable organizations, and union halls).[48] These later business adopters probably do reflect the growing

diffusion of the phone within the community rather than any sudden change in Kingston's social structure.

2. Certain institutional spheres and major organizations were clearly long-term hold outs against the new communications technology. For example, even in 1911 such a major institutional sphere as public education could boast just one phone at the Board of Education and none in the local public and secondary schools. Likewise, Queen's University did not install phone until 1902, although there was already a phone at the school of mines which later affiliated with the university. There was probably an idiosyncratic reason for the delay at Queen's: the influence of Principal Grant, who administered the university during the last quarter of the 19th century. He was reported to have had a marked aversion to Bell's invention and never used a phone in his life.[49]

Table 7
Diffusion of Telephones Among Selected Occupational and Industrial Categories, 1891

Occupation or Industry	Number Listed Kingston City Directory	Number With Phones
Architects	3	1
Bakers	2	2 (1 public pay)
Banks	6	5
Barristers	17	12
Booksellers	4	3
Chemists, Druggists	7	6
Dry Goods	14	5
Flour and Feed	7	7
Furniture Dealers (Undertakers)	5	4
Gents' Furnishings	8	1
Grocers	21	13
Hardware Stores	8	8
Hotels	15	5
Physicians and Surgeons	21	18

Sources: Kingston City Directories and Bell Directories.

3. Although multiple phone rentals at one general location and/or by one business subscriber did exist before 1901, the cases of such rentals, as well as the numbers of phones involved, increased substantially during the first decade of this century. To take a couple of examples, the Kingston Court-House listed two phones in 1901, four in 1906, and five in 1911 (which included one for the caretaker). Queen's University, under a new principal, was subscribing to five phones by 1906, and in 1911 had eight in such strategic locations as the registrar's office, gymnasium, library, medical faculty, engineering and chemistry departments, and principal's residence. Quite evidently, phones were becoming increasingly diffused within organizations as well as between them, a trend that greatly increased their accessibility and, especially when administered by an internal switchboard, allowed for enhanced intra- as well as inter-organizational communications.

These summary comments hardly do justice to the complex development of the business telephone during the 38-year period between Bell's initial invention and World War I. Beginning as a somewhat esoteric toy, the phone had become so indispensable as a means of business communication by the early years of this century that the breakdown of the service as a result of ice-storms (not uncommon in Canadian winters when wires were strung overhead) could merit headlines in the major urban newspapers. However, as we have seen, the use of the phone was spreading not only in places of employment but also into private residences. With due recognition of the fact that early business and residential phone subscribers were often the same people (and kept a phone at home for largely instrumental reasons), it is still pertinent to know more precisely which social groups had access to the technology within their own households. This is the topic of the next sub-section of this paper.

The Socio-Economic Characteristics of Residence Phone Subscribers

It has been estimated that in 1881 over two-thirds of Kingston's heads of households were in blue-collar employment and that about 34 per cent of all heads were unskilled labourers.[50] Thirty years later a somewhat limited analysis of the "gainful occupations" pursued by Kingstonians at the time of the 1911 census indicates that, as shown in Table 9, about 59 per cent of the gainfully employed of the city were broadly "working class" in occupational status.[51] Thus, if the residential telephone had been "democratically distributed" during the period under review, most phones would have been located in the homes of working-class people. But, of course, they were not. Just as the historical research of such scholars as Martin is intended to show that Bell's marketing strategies and high rental charges did not offer working-class people easy access to the phone, so the empirical

research on early phone subscribers shows that, until after the turn of the century, the residential phone in Kingston — and, by implication, in other central Canadian urban centres — remained almost exclusively the monopoly of the professional, business and leisured classes.

The data which support this conclusion are contained in Tables 8 and 9. The former provides a socio-economic classification of the occupations of Kingston residential phone subscribers (including those explicitly using their home phones for work-related purposes) in each of the three census years between 1891 and 1911.[52] The latter concentrates on residential subscribers in 1911 who were gainfully employed and whose occupations are known, and compares them with the census data on the occupations of all Kingstonians. Thus, 86 per cent of all subscribers to residential phones in 1891 were professional or business people, but ten years later this proportion
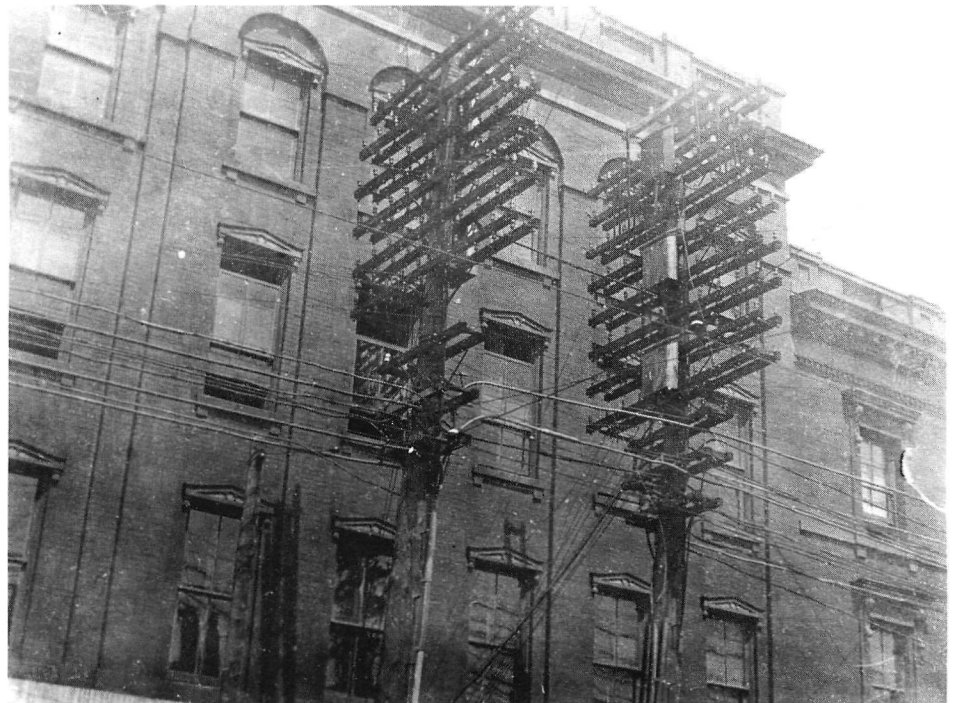

Figure 2: The Wired City. Poles in front of Bell Canada central office, Kingston, Ontario, 1903.

stood at 76 per cent, with another 11 per cent of subscribers (among them a number of women) being probably of private means. During the first decade of this century, as we have already noted, the explicit connection between the business and residential phone weakened, and some occupational groups — professors, nurses and ministers have been mentioned as cases in point — began to make a significant appearance among household subscribers. In the case of nurses, this trend can be seen as part of the evidence of a slight "democratization" as a small number of semi-professionals, white-collar workers, and manual workers obtained home phones (and may, in turn, have been linked to the declining real costs of phone rental). However, as Table 9 shows, "slight" is the appropriate adjective, since working-class people still made up less than 14 per cent of the employed subscribers to such phones in 1911.

In conclusion, although this survey of residential phone subscribers in Kingston adds evidence to the proposition that a new communications technology may not be uniformly diffused among all social segments of a population, one should balance an awareness of the highly selective nature of early home phone ownership with an appreciation that, by World War I, certain limited segments of the urban population had already achieved a remarkably high level of access to a residential phone. For example, the occupational category of "professionals" in the left hand column of Table 9 is limited mainly to those Kingstonians who were engaged in such traditional professions of law, medicine, the church, and the professoriate. This small group alone accounted for about one-quarter of all residential phone subscribers in 1911, and about 70 per cent of them (compared with the overall household penetration rate in Kingston of 15 per cent) had phones in their residences. With the business class, these were key occupational groups in the household adoption of the technology, and, incidentally, the type of people whom the

Table 8
Socio-Economic Characteristics of Residential Subscribers

	1891	%	1901	%	1911	%
1 Professionals	48	43.2	67	34.0	138	20.0
2 Semi-Professionals, White-collar, Sales	—	—	9	4.6	70	10.2
3 Proprietors, Managers, Agents of Commercial, Financial, Retail, and Manufacturing Companies	48	43.2	83	42.1	236	34.2
4 Skilled Tradesmen	5	4.5	8	4.1	33	4.8
5 Semi-Skilled Tradesmen	—	—	2	1.0	22	3.2
6 Unskilled	—	—	3	1.5	17	2.5
7 Farmers	—	—	—	—	9	1.3
8 Private Means	7	6.3	21	10.6	85	12.3
9 Unknown	3	2.7	4	2.0	79	11.4
	111	100.0	197	100.0	689	100.0

1 Doctors, dentists, clergy, military officers, lawyers, accountants, professors, etc.
2 Teachers, nurses, bookkeepers, reporters, draftsmen, salesmen, clerks, etc.
3 As stated.
4 Plumbers, milliners, dressmakers, engineers, blacksmiths, etc.
5 Gardeners, barbers, linesmen, carpenters, etc.
6 Cabmen, carters, delivery agents, etc.
7 As stated.
8 Widows, married women, gentlemen, etc.

Table 9
All Persons in Gainful Occupations and Residential Phone Subscribers: Kingston, 1911

	All Persons in Gainful Occupations	Residential Phone Subscribers[1]
	%	%
Professionals	2.7	26.2
Semi-Professionals, Officials, White-Collar, Sales Personnel	21.6	13.3
Proprietors, Managers, Owners, Foremen, Agents	7.7	44.9
Skilled, Semi-Skilled Trades	32.0	10.4
Labourers, Domestics, Other Unskilled	26.8	3.3
Other	9.2	1.9
	100.0	100.0

1 Excludes subscribers with private means and occupations unknown.

Source: For occupational data for Kingston: Census of Canada, 1911, Vol. 6, *Occupations*, Table VI.

Scots journalist mentioned earlier in this paper must have met on his Canadian travels. For them, as we have suggested, the residential phone was probably wealth-producing in the sense that it facilitated work. By contrast, for the average householder, the phone remained an expensive wealth-consuming instrument.

Conclusion

Recent historical research on the early marketing of the telephone has concentrated almost exclusively on the corporate ideologies and strategies of the large private telephone companies of Canada and the United States. As we have seen, these ideologies and strategies appear to have focused upon the wealthier classes and the use of the phone for instrumental purposes. Yet, when faced by accusations of profiteering and monopoly control (as they were repeatedly by civic populists during the first decade of this century), Bell Canada executives commonly counter-attacked with the argument that rental charges were not unreasonable in the light of the heavy costs of constant technical innovation; in 1902 this argument was coupled, in Bell's public attack on a proposal for municipal telephone service in Ottawa, with the rather self-serving view that "of the 60,000 people in the city not more than 1,200 have or require telephones."[53] Indeed, the expression of such views, and the prominence they have been given in recent research, leaves the impression that the early marketr from being the truth. Most notably, between 1907 and 1909 the provincial governments of Manitoba, Saskatchewan, and Alberta rejected the principle of private interest in favour of public utility as the basis for the development of telephone systems. They bought out Bell and established their own tax-supported and subsidized telephone services. By so doing, western politicians cultivated the support of their burgeoning and mostly rural electorates in a symbolic crusade against eastern monopoly interests.

The rhetoric of this prairie development, which also found strong support among powerful lobbies for public telephone ownership in central Canada, was that public ownership, associated with cheaper telephone rates, was the key to the broader market penetration of the telephone. For example, the premier of Manitoba, when speaking in 1905 against Bell and in favour of the government control of telephone services, noted that phones were necessary for the dispatch of business and the convenience and pleasure of the people. Thus, their price should be made low enough that "labouring men and artisans should have the advantage of the telephone, as well as the merchant, the professional man and the gentleman of wealth and leisure"[54] Behind this rhetoric was the perception that Bell was reaping monopoly profits from unnecessarily high rates and that the restricted pattern of phone ownership and use that we found to exist in the case of Kingston was mainly a result of the dominance of corporate self-interest over the common good. But how justifiable is this perception? With due acknowledgement of the primacy that Bell gave to serving its shareholders' interests, and due recognition of the selective nature of its advertising, a cautious answer would be not very justifiable on the basis of the evidence. As Armstrong and Nelles have noted in their historical account of the organization and regulation of Canadian utilities, by 1907 the western campaign for public telephone ownership had "entered a realm of discourse where rational calculation of cost and benefit counted for little."[55] More specifically, they have shown quite convincingly that neither public nor private ownership of telephones in Canada can be neatly correlated with maximum telephone utilization.[56] In Manitoba and Alberta, initially cheap phone rates offered on a par for both urban and rural areas soon brought major deficits to the provincial telephone services without achieving a market penetration that was broader than in Ontario. Only in Saskatchewan where the government placed considerable emphasis in supporting the

establishment of rural cooperative telephone companies, did public ownership appear to be far more effective than private enterprise during later decades in overcoming the barriers of geography, low population density and low per-capita incomes — and that was more a consequence of efficient organization than of low rates or public ownership.[57]

In short, arguments that the private enterprise ethic or Bell's quasi-monopolistic position can explain the early limited social penetration of the telephone market must be treated with caution. A more realistic explanation probably lies in the high costs of developing the early technology and the limited capital available for its exploitation. Such an explanation does not, of course, invalidate Martin's conclusion that there were substantial numbers of low-income people, in the period 1900-1914 who would have liked to have a phone — but, by the same token, there are probably substantial numbers of low-income people who would like to own a cellular phone at the present time. At some point, as ultimately occurred with standard phone technology, the price may be right.

Appendix A

This Appendix provides details of those pioneering subscribers who maintained a phone in a place of business or residence in Kingston in 1883. The subscribers are divided into five broad institutional and functional areas as outlined in the text.

1 **Health Related Services.** This category covers the Asylum, the Waterworks, five physicians with residence phones, and five druggists: a total of 12 subscribers.

2 **Defence and Public Order.** Business phones were installed at the Royal Military College, the military barracks, the court-house, the police station, and in the offices of four lawyers. Residence phones were installed in the homes of the police magistrate, two lawyers, and three military officers (including the officers commanding RMC and the local cavalry brigade). Fourteen subscribers in total fell into this category.

3 Transportation and Communications. Telephones were installed at all the major organizations concerned with the movement of goods, people, and messages: the two daily newspapers, the main post office, the local branch of the Great North-West Telegraph Company, the freight office and station of the Grand Trunk Railway, the steamboat office, and ticket agents. Two livery stables also had phones. In total, 10 subscribers in this category rented 11 phones.

4 Manufacturing, Finance, and Sales. The majority of the subscribers (55) fell into this large inclusive category of business organizations and the owners and agents of such organizations. Thus, among Kingston's pioneering adopters of the phone can be found most of the big manufacturing companies in the city, including the saw and planing mill, the brewery, the stove foundry and office, the locomotive works, and the cotton manufacturing company. Wholesale and retail sales were strongly represented in the form of lumber, hay, and grain merchants, coal dealers, and, most significantly, nine grocers, two of whom also maintained residential phones. In the financial sector, phones were located at three banks, and Carruthers Bros, Financial Agents, showed a true commitment to the new technology by maintaining an office phone and phones at two residential locations.

5 Personal Service. In the personal service sphere, a couple of hotels were early subscribers, as were two enterprising undertakers — the latter providing another good example of the perceived convenience of the phone during times of personal crisis and stress.

Some of the reasons why the above subscribers were swift to adopt the phone are not difficult to assess. In the areas of health, defence, and social control, the advantage of instantaneity of two-way communications as a basis for action is readily apparent. For tradespeople, such as grocers whose financial survival was dependent upon speedy contact with distant suppliers and freight offices in order to check the availability or arrival of fresh and perishable produce (and increasingly to take phone orders from customers), the phone's advantage over the alternatives of the telegraph or messenger boy can also be readily seen. Most interesting, however, is the natural succession from the telegraph to the telephone that is evident in the transportation-communications sphere, such as newsrooms and railway stations. The significance of the latter as communications centres in late 19th-century urban life is evidenced in the agreements Bell Canada sometimes reached with railway companies to allow only Bell phones on railway premises, thereby excluding competitors. But, more specifically, as the Montreal *Gazette* pointed out in an editorial column in 1908, the gradual substitution of the telephone for the telegraph in the working of passenger and freight traffic was "a silent revolution" which had greatly increased the efficiency and safety of traffic flow.[58]

In addition, as already mentioned, one should not ignore the influence of less tangible inducements, such as the enhancement of prestige, as reasons for early phone adoption. Some of the earliest marketing by phone companies emphasized the status that would accrue to those entrepreneurs who subscribed to a phone; the parallel with the contemporary marketing of cellular phones shows that many good sales ideas have a long history. By the same token, an entrepreneur who kept a phone in his shop could expect to attract some people who wanted to use it — and to attract their custom at the same time.

Notes

1   *Daily Mail* (Montreal), 14 Feb. 1914.

2   Exceptions include *The Social Impact of the Telephone*, ed. I. de Sola Pool (Cambridge: Mass., 1977) and I. de Sola Pool, *Forecasting the Telephone: A Retrospective Technology Assessment of the Telephone*. (Norwood, N.J., 1983).

3   C.S. Fischer, "Studying Technology and Social Life" in *High Technology, Space and Society: Emerging Trends*, ed. Manuel Castells (Beverly Hills, Calif., 1985).

4   See C.S. Fischer, "Technology's Retreat: The Decline in Rural Telephony, 1920-1940" (revised unpublished version of a paper presented at the 1985 American Sociological Association meetings in Washington); C.S. Fischer and G.R. Carroll, "The Diffusion of the Telephone and the Automobile in the United States, 1902 to 1937" (unpublished paper, University of California, Berkeley, 1987); C.S. Fischer, "'Touch Someone': The Telephone Industry Discovers Sociability", *Technology and Culture* 29 (January 1988); C.S. Fischer, "The Revolution in Rural Telephony, 1900-1920," *Journal of Social History*, 21 (Fall 1987).

5   Fischer and Carroll, 1.

6   M. Martin, "Communication and Social Forms: A Study of the Development of the Telephone System, 1876-1920" (unpublished Ph.D. Thesis, University of Toronto, 1987).

7   Sonny Kleinfield, *The Biggest Company on Earth: A Profile of AT & T* (New York, 1981), 13.

8   Fischer, "Studying Technology," 297.

9   J.A. Irving, *Mass Media in Canada* (Toronto, 1962), 3.

10   For two recent studies of the development of Canadian postal communications, see B. Osborne and R.M. Pike, 'Lowering the Walls of Oblivion': The Revolution in Postal Communications in Central Canada, 1851-1911," in *Canadian Papers in Rural History*, vol. 4, ed. D.H. Akenson (Gananoque, Ont., 1984) and, "From 'A Cornerstone of Canada's Social Structure' to 'Financial Self-Sufficiency': The Transformation of the Canadian Postal Service, 1852-1987," *Canadian Journal of Communication* 13 (1988).

11   Irving, 5.

12   P. F. W. Rutherford, *A Victorian Authority: The Daily Press in Late Nineteenth Century Canada*. (Toronto, 1982), 41.

13   A. Hunter, *The Telephone Idea* (New York, 1926), 10.

14   Martin, 240.

15   *Ibid.,* 344

16   Bell Canada Historical Archives (hereafter BCHA), document 1544.

17   Stephen Kern, *The Culture of Time and Space, 1880-1918* (Cambridge, Mass., 1983), chapter 5, *passim*.

18   The quotation is from S.H. Aronson, "The Sociology of the Telephone," *International Journal of Comparative Sociology* 12 (1971): 156. Aronson's remarks apply to the United States, but it is not unreasonable to assume, pending further research, that the Canadian business community utilized the telephone in the same way.

19   The accusation was unfair, especially in the large urban centres, because telephone operators would have had little time to listen to subscribers' conversations even if there had not been strict company prohibitions on the matter. For example on 18 March 1911, the Montreal *Daily Witness* noted that an operator at the Main Exchange was handling an average of 200 calls an hour or 1,500 calls a day.

20 The use of the telephone for these purposes in such diverse countries as Hungary and the United States has been referred to by Asa Briggs as "the pleasure telephone." There is, however, little evidence of any significant "pleasure telephone" development in Canada. See Briggs, "The Pleasure Telephone: A Chapter in the Prehistory of the Media," in *Social Impact of the Telephone*, ed. de Sola Pool.

21 In 1887, there were 12,000 telephone subscribers in Canada compared with 26,000 in Britain and 22,000 in Germany: in the context of a population of just 4.5 million, Canadians were already far more eager to adopt the phone than their European contemporaries. The statistics are from J. H. Morrison, *Wave to Whisper: British Military Communications in Halifax and the Empire, 1770-1880* (Ottawa, 1982), 69.

22 The basis of this estimate is described in R.M. Pike and V. Mosco, "Canadian Consumers and Telephone Pricing: From Luxury to Necessity and Back Again," *Telecommunications Policy*, 10 (March 1986).

23 D.A. Norris, "The Bell Telephone Collection and Late Nineteenth Century Urban History: A Preliminary Report," *Urban History Review/Revue d'histoire urbaine*, 10 (February 1982).

24 Pike and Mosco, 23.

25 For an early editorial article that dwells at some length on the relationship between cost factors and the constant process of technical innovation and obsolescence during the early years of telephone development, see *Canadian Electrical News* (May 1982), 72.

26 The rental rates of Bell Telephone did not undergo any significant changes during the period under review, though both wages and the wholesale price index rose substantially after 1900.

27 This pricing policy is outlined in the article by R. E. Babe, "Rejoinder [to Globerman]: Predatory Pricing and Foreclosure in Canadian Telecommunications," *Telecommunications Policy* 9 (December 1985).

28 BCHA data for 1895.

29 Martin, notably 149.

30 *Ibid.*, 158.

31 The efficient corporate performance of the Bell Telephone Company during the 1880s, in comparison to similar systems in the northeastern United States, is outlined in Christopher Armstrong and H. V. Nelles, *Monopoly's Moment* (Toronto, 1986), 126-127.

32 Fischer, "'Touch Someone'," *passim.*

33 For an entertaining Canadian example of this attitude among early subscribers, see R. C. Fetherstonhagh, *Charles Fleetood Sise* (Montreal, 1944), 119.

34 Fischer, "'Touch Someone'," 57.

35 The appeal to social prestige became particularly evident in the relatively sophisticated Bell advertising that appeared towards the end of the first decade of this century. For example, one advertisement from about 1909 publicizes the residential telephone by noting that "No progressive household can afford to be without the invaluable adjunct to comfortable living." The emphasis on being "up-to-date" and progressive was common in the publicity thereafter. BCHA.

36 Fischer, "'Touch Someone'," 37.

37 For more information, see Martin, 150.

38 C.S. Clark, *Of Toronto the Good* (Montreal, 1898; repr. Toronto, 1970), 27.

39 G. J. Levine, R. Harris, B. S. Osborne, *The Housing Question in Kingston, Ontario, 1881-1901: A Report of an Investigation* (Published paper, Queen's University, Department of Geography, June 1982), 5-6.

40 For a recent account of Kingston's urban characteristics during this period, see B. S. Osborne and Donald Swainson, *Kingston: Building on the Past* (Westport, Conn., 1988), notably Chapter 10.

41 In a similar fashion, when the telephone directory lists both an occupation and an address for a subscriber, it is possible to ascertain from the city directory whether or not the address is the subscriber's residence. In such instances, subscribers were presumably often working out of their homes.

42 For evidence of servants' surreptitious use of the telephone, see Fetherstonhagh, 119.

43 This statement is included in a letter dated 27 July 1886 from Bell executive C. P. Schlater to a sales representative. The former asks "Have you canvassed it [Niagara on the Lake] for a local Exchange? It might turn out to be a second Kingston which, if you recollect, was unpromising at first, but has done well." BCHA, unnumbered document.

44 The term "business phone" is used throughout the remainder of this paper to refer to phones located in any place of employment. It is recognized, however, that many phones in residences were *de facto* business phones.

45 This expansion of household use in Kingston is explored in R.M. Pike, "The Telephone and the Democratization of Communications in Canada" (unpublished paper presented at the Biennial Conference of the Association of Canadian Studies in Australia and New Zealand, Brisbane, 14-16 May 1986).

46 Article reprinted in *Montreal Herald*, 7 Oct. 1910.

47 Martin, 231-32.

48 An analysis of business phone subscribers in accordance with a broad industrial classification shows that the proportion engaged in a broad range of "other trades and services" that included such organizations as social clubs, union halls, and charitable societies rose from 7.6 per cent of all business subscribers in 1901 to 19.3 per cent in 1911 (in absolute terms, from 24 subscribers to 106 subscribers). This was a major change in the business profile during the first decade of the century.

49 See report in *Daily British Whig* (Kingston), 11 Nov. 1902.

50 P. Green, "The Land Development Process in Charlesville, Kingston, 1881-1891" (unpublished M.A. thesis, Queen's University, 1984), 62.

51 The occupational data for Kingston contained in the 1911 census does not lend itself to a precise socio-economic classification of the gainfully employed population of the city. None the less, the available data do allow for the broad classification utilized in Table 9 provided that it is recognized that the percentages in each category of the left-hand column are approximate.

52 The occupational data on the characteristics of
    residential phone subscribers in 1911 is somewhat
    less complete than for earlier census years as a
    result of the substantial number of subscribers for
    whom no information on occupations could be
    obtained. By 1911 the boundaries of the Kingston
    telephone district had extended beyond those of the
    city directory, so that some subscribers who
    appeared in the phone directory were not listed in
    the city directory. There is, however, no reason to
    believe that this problem invalidates the general
    trends outlined in this paper, notably in Table 8.

53 This quotation is taken from a Bell advocacy
    advertisement, dated 4 Jan. 1902, which appeared
    in Ottawa newspapers during the course of that
    month. BCHA.

54 Reported in *Manitoba Free Press*, 24 Nov. 1905.

55 Armstrong and Nelles, 182.

56 *Ibid.*, 282-92.

57 *Ibid.*, 289.

58 *The Gazette* (Montreal), 27 June 1908.