CRTC Telecommunications Monitoring Report

Status of Competition in Canadian Telecommunications Markets

Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services

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Documentation Centre
Canadian Radio-television and
Telecommunications Commission (CRTC)
Les Terrasses de la Chaudière
Central Building
1 Promenade du Portage
Gatineau, Quebec

Mailing Address:
CRTC
Ottawa, Ontario
Canada
K1A 0N2

Telephone: 1 819-997-2429
1 (877) 249-2782 (toll-free)
TDD: 1 (877) 909-2782 (toll-free)

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Executive summary

The Canadian Radio-television and Telecommunications Commission (the Commission) has issued, pursuant to Order in Council P.C. 2000-1053, 26 June 2000, five annual monitoring reports on the status of competition in Canadian telecommunications markets and on the deployment and accessibility of advanced telecommunications infrastructure and services. As these reports had evolved to become a key component of the Commission's monitoring plan and were used by stakeholders as an invaluable source of information on the Canadian telecommunications industry, the Commission, in *Monitoring the Canadian telecommunications industry*, Telecom Public Notice CRTC 2005-15, 18 October 2005, announced that it would continue with its monitoring activities and the issuance of monitoring reports. This is the Commission's first monitoring report on the status of competition in Canadian telecommunications markets pursuant to that public notice.

In *Forbearance from the regulation of retail local exchange services*, Telecom Decision CRTC 2006-15, 6 April 2006, the Commission established a framework for forbearance from the regulation of incumbent local exchange services that will provide greater certainty and enable the Commission to reach expeditious determinations with respect to local forbearance applications. As part of this framework, the Commission defined 86 local forbearance regions (LFRs) for which market share statistics are provided in Appendix 4. The Commission also allowed for a measure of flexibility, in its decision to take into account differing market and geographic conditions. To that end, while the Commission has provided guidance on the LFRs outside of the census metropolitan areas (CMAs), the Commission is willing to entertain applications for local forbearance outside of a CMA, pursuant to the local forbearance framework, which identify a different LFR from those set out by the Commission.

Industry overview

Total telecommunications service revenues were $34.5 billion in 2005, an increase of $1.2 billion or 3.5% over the previous year. The vast majority of this increase is directly attributable to the revenue growth of high-speed Internet and wireless services and, to a lesser extent, the newer data services such as Ethernet and Internet protocol (IP)-based services. Traditional services such as long distance, circuit switched local service and legacy data services such as X.25 and ATM have either declined or displayed no revenue growth in 2005.

The competitors' share of total telecommunications revenues, both wireline and wireless, continued to increase and reached 35% or $12.2 billion in 2005. The competitors' market share consisted of the incumbent telephone companies' out-of-territory activities with 11%, facilities-based competitors with 19% and resellers with the remaining 5%.

The development and adoption of new technologies continues to impact the industry, not only by reducing costs, but also by introducing new ways of providing telecommunications services. This has resulted in the delivery of traditional services by non-traditional service providers, such as cable broadcasting distribution undertakings (BDUs) and utility companies. In the midst of these

developments, Canada continued to have not only a very high wireline and wireless telephone penetration rate of 98.9 subscribers per 100 households but also a very high Internet subscription rate of 64 subscribers per 100 households. Moreover, 51% of all households subscribed to high-speed Internet service.

The major cable BDUs have evolved their Internet and distribution network infrastructure and have entered the local residential telephone market. These companies are major providers of high-speed Internet service, as they had approximately 54% of high-speed Internet subscribers, and in 2005, they started to provide local telephone service generally over a managed network utilizing voice over Internet protocol (VoIP).

The telecommunications industry's earnings before interest, taxes, depreciation and amortization (EBITDA) increased from $11.5 billion to $12.4 billion, a $0.9 billion or 8% increase. The increase was mainly due to the wireless service providers, whose EBITDA increased from $3.7 billion in 2004 to $4.4 billion in 2005, a $0.7 billion or 19% increase.

Capital expenditures decreased from $5.7 billion in 2004 to $5.6 billion in 2005, a $0.1 billion or 1.8% decrease. Wireline service providers' capital expenditures declined from $4.6 billion in 2004 to $4.5 billion in 2005, a $0.1 billion or 2% decline. Wireless service providers' expenditures were relatively unchanged at $1.1 billion in 2005.

Local and access

The local and access sector is now the second the largest in the telecommunications market, accounting for 28% of total industry revenues. Local revenues and the number of lines increased slightly to approximately $9.8 billion and 20.8 million lines in 2005. Overall, the incumbents' share of retail local revenues declined from 94% in 2004 to 92% in 2005 while their share of local lines declined from 94% in 2004 to 90% in 2005.

In the residential market, the competitors' revenue share increased from 3% in 2004 to 5% in 2005. Competition was primarily confined to a limited number of LFRs. The Halifax LFR had the highest competitor presence in terms of lines at 35%. Overall, the competitors' share of residential lines exceeded 10% in 11 of the LFRs. These 11 LFRs represent 39% of all residential lines.

In the business market, competitors' revenue share increased from 12% in 2004 to 14% in 2005. In terms of lines, the Edmonton LFR had the highest competitor presence at 24.5%. Overall, the competitors' share of business lines exceeded 10% in 31 of the LFRs. These 31 LFRs represent 68% of all business lines.

Technological development and adoption have permitted cable BDUs to use their cable networks to offer telephone service. The cable BDUs are, therefore, not as dependant on the unbundled network components provided by the incumbents as other entrants in the local market.

Long distance

In the long distance market, revenues continued to decline, decreasing from $5.6 billion in 2004 to $5.1 billion in 2005, a $0.5 billion or 8.6% decline. The number of long distance minutes, however, continued to increase in 2005 increasing by 10.1% when compared to the previous year. The incumbents' share of long distance revenues declined from 67% in 2004 to 64% in 2005.

In the residential market, competitors had 28% of the long distance revenues of which the vast majority (82%) was related to resellers. In the business market, competitors had 44% of the revenues of which 20% was related to resellers.

Internet and broadband services

The Internet market continued to have strong growth and remained competitive. The Internet market was again one of the fastest growing markets in the industry. Internet revenues increased from $4.2 billion in 2004 to $4.5 billion in 2005, a $0.3 billion or 8.8% increase. The incumbent telephone companies had 43% of the retail Internet access revenues in 2005, while the cable BDUs had 42% and all other competitors, including the incumbents' out-of-territory operations, had the remaining 16%. The four largest Internet service providers (Bell Canada, TELUS Communications Company, Rogers Communications Inc. and Shaw Cablesystems Ltd.) and their affiliates accounted for 63% of the retail Internet revenues in 2005.

Broadband deployment continued to progress, with approximately 92% of Canadian households having access to broadband services. Ninety-eight percent of urban households can access broadband service versus 74% of the rural households up from 68% in 2004. In 2005, 64% of Canadian households had an Internet subscription. There were far more high-speed Internet households (51%) than there were households with dial-up subscriptions (13%).

Data and private line

In the data and private line market, total revenues decreased from $4.4 billion in 2004 to $4.1 billion in 2005, a $0.3 billion or 7.2% decrease. Data service revenues declined from $2.3 billion in 2004 to $2.2 billion in 2005, a $0.1 billion or 4.1% decline, and private line service revenues declined from $2.1 billion in 2004 to $1.9 billion in 2005, a $0.2 billion or 10.7% decline.

The competitors', including the incumbents' out-of-territory operations, share of the data and private line market, increased from 27% in 2004 to 31% in 2005. Aggressive pricing and reduced demand continued to be major contributors to the decline in private line service revenues. The industry is continuing to benefit from the revenue growth of the newer data services that meet customer requirements for increased speed, functionality and cost efficiency – these services now represent almost 50% of the data protocol revenues. These newer data services such as Ethernet and IP based virtual private network had revenue growth of 4% and 52%, respectively. This may, in part, account for some of the reduced demand for private lines and legacy data services such as X.25.

Wireless

The wireless market continued to display strong growth and remained competitive in 2005. Wireless revenues increased from $9.5 billion in 2004 to $11.0 billion in 2005, a $1.5 billion or 16.2% increase. This strong growth made the wireless market the largest sector in the telecommunications market, accounting for 32% of the industry's revenues. The number of wireless subscribers increased from 15.0 million subscribers in 2004 to 17.0 million in 2005, an increase of 2.0 million subscribers or 13.3%. Three major wireless service providers accounted for over 90% of the wireless market, with no provider dominating in terms of either revenues or subscribers. The average monthly revenues per subscriber increased from $48 in 2001 to $53 in 2005.

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1.0 Introduction

1.1 Purpose of the report

The Canadian Radio-television and Telecommunications Commission (the Commission) issued its first monitoring report in 2001 pursuant to Order in Council P.C. 2000-1053, 26 June 2000. The Commission was required to submit annual reports for five years starting in 2001 to the Governor in Council on the status of competition in Canadian telecommunications markets and on the deployment and accessibility of broadband services and facilities across the country (the GIC Report).[1]

The Commission has found the reports useful in fulfilling its mandate under the *Telecommunications Act* (the Act). The reports have become an invaluable source of information on the Canadian telecommunications industry and provide the Commission and stakeholders with an efficient and effective tool to assess the extent to which the Commission's regulatory frameworks and determinations are fulfilling the Canadian telecommunications policy objectives set out in section 7 of the Act.

In *Monitoring the Canadian telecommunications industry*, Telecom Public Notice CRTC 2005-15, 18 October 2005 (Public Notice 2005-15), the Commission announced that it would continue to publish annual monitoring reports and collect information related to Canadian telecommunications markets using the procedures outlined in Telecom Circulars 2003-1[2] and 2005-4.[3] This is the Commission's first report following Public Notice 2005-15.

The information gathered as part of its data collection process enables the Commission to monitor (a) the state of competition, (b) the effect of the market on services to residential and business customers, and (c) the service providers' compliance with regulatory requirements.

The Commission is largely responsible for the implementation of the Act that came into force in 1993. Certain objectives of the Act, set out in section 7, are directly or indirectly tied to the notion that competition is in the public interest. For example, subsection 7(f) of the Act explicitly states that the Canadian telecommunications policy has as an objective "to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective."

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1 These reports on the *Status of Competition in Canadian Telecommunications Markets - Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services* were issued in September 2001, December 2002, November 2003, November 2004 and October 2005.

2 *Telecommunications industry data collection: updating of CRTC registration lists, telecommunications fees, Canadian contribution mechanism fund administration, international licences and monitoring of the Canadian telecommunications industry*, Telecom Circular CRTC 2003-1, 11 December 2003.

3 *Telecommunications industry data collection: updating of CRTC registration lists, telecommunications fees, Canadian revenue-based contribution regime, international licences and monitoring of the Canadian telecommunications industry*, Telecom Circular CRTC 2005-4, 9 February 2005.

The Commission collects information related to Canadian telecommunications markets in order to monitor the status of competition. As there is no single or simple way of assessing the state of competition in a market, the Commission examines various elements or factors, including among other things: (i) the market size and market share according to criteria, such as revenues and number of subscribers, lines and minutes; (ii) the number and description of service providers in the market; (iii) lists of available services, pricing levels and trends; and (iv) corporate financial conditions.

Specific elements of the monitoring exercise change over time to take into account new regulatory issues or market developments, such as new technologies, changes in the market structure or in domestic or international regulations or agreements, or the introduction of new or evolving services. Such changes serve to ensure that the monitoring reports continue to be useful tools for all stakeholders, including regulators, customers and industry players, both incumbents and competitors.

1.2 Data collection and outline of the report

Although there are various means for measuring competition, good quality data is critical if the monitoring process is to be accurate and useful. For the most part, the Commission uses its own data collection system in order to gather detailed and timely information.

This report is based on the responses to the Commission's data collection forms which have been issued annually since 2001 (referenced as CRTC data collection), internal analyses, data collected from other sources, including Statistics Canada, Industry Canada, and company-specific financial reports and information previously filed with the Commission.

Certain figures published in prior years' monitoring reports may be restated to be consistent with data displayed in this report. Other figures may change as a result of some service providers resubmitting prior years' data. In addition, certain data may be reclassified to better reflect the market segments or industry developments. All revised numbers are identified by means of a number sign (#).

This report is divided into a number of sections and appendices. An overview of regulation and the impact of competition on access to the public switched telephone network (PSTN) is provided in Section 2. Section 3 provides a review of telecommunications service providers. It also provides an overview of telecommunications revenues by type of service provider and a discussion of major industry or market developments. A review of financial information, including revenue, capital expenditures and other operational data for various sectors of the industry is contained in Section 4. It also examines the status of competition in each of the major market segments, including local and access, long distance, Internet and broadband, data and private line, and wireless.

A description of the data collection methodology is provided in Appendix 1. Appendix 2 discusses the classification of the telecommunications service providers. A summary of Canadian telecommunications markets subject to forbearance rulings is provided in Appendix 3. Appendix 4 provides local market share information by local forbearance regions (LFRs). A review of the status of promising means for broadband deployment in rural and remote areas of the country is contained in Appendix 5.

2.0 Overview of regulation and the impact of competition on access to the PSTN

2.1 Regulatory oversight of Canadian telecommunications markets

The Commission has the mandate pursuant to section 47 of the Act to exercise its powers and perform its duties with a view to implementing the telecommunications policy objectives set out in section 7 of the Act, and ensuring that rates Canadian carriers charge are just and reasonable and that, in relation to the provision of telecommunications services, Canadian carriers do not discriminate unjustly or accord any undue or unreasonable disadvantage.[4] In addition to regulating the rates, terms and conditions under which telecommunications services are provided, the Commission has the power to forbear from regulating telecommunications services or classes of service where it finds, among other things, that there is sufficient competition to protect the interests of users.[5]

2.2 The Commission and competition

In exercising its statutory powers under the Act and predecessor legislation, the Commission has over the years gradually and in an orderly manner opened up monopoly-based markets to competition. The Commission also strives to ensure the provision of reliable and affordable services of high quality accessible to both urban and rural area customers, to foster facilities-based competition, to provide incumbents with incentives to increase efficiencies and be more innovative, and to adopt regulatory approaches that impose the minimum regulatory burden possible.

In Decision 94-19,[6] the Commission established a three-step process by which it could determine whether a market is, or is likely to become competitive for the purpose of considering forbearance applications: (a) identify the relevant market; (b) determine whether the applicant has market power with respect to the relevant market; and (c) determine whether, and to what extent, forbearance should be granted.

As outlined in Appendix 3, over time the Commission has forborne from regulating a number of services including mobile services, retail Internet services, long distance and international services, various data and private line services, terminal equipment and inside wiring, satellite services and services provided by non-dominant carriers. In 2005, the Commission forbore from regulating approximately 1,000 additional interexchange private line routes[7] for a total of approximately 3,000 forborne routes.

While the Commission has forborne, and continues to forbear, from regulating a growing number of services, the Commission continues to regulate certain telecommunications services where competition has not been found to be sufficient to protect the interests of users. In the case of

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4 Subsections 27(1) and 27(2) of the Act.

5 Section 34 of the Act.

6 *Review of regulatory framework*, Telecom Decision CRTC 94-19, 16 September 1994 (Decision 94-19).

7 *Forbearance from regulating additional interexchange private lines services*, Telecom Decision CRTC 2005-18, 29 March 2005 (Decision 2005-18).

large incumbents [including Aliant Telecom Inc. (Aliant Telecom), Bell Canada, MTS Allstream Inc. (MTS Allstream), Saskatchewan Telecommunications (SaskTel) and TELUS Communications Inc. (TCI) (now part of TELUS Communications Company (TCC))], these services include residential basic local services, business single and multi-line local services, local calling features and options, pay telephone, digital network access, local channels, and competitor services. Starting in 1998, the regulation of these services (for all of these companies except SaskTel) changed fundamentally, shifting away from an earnings-based to a price level-based form of regulation.[8] The first price cap regime covered the period 1998 to 2002. In 2002, it was reviewed and modified.[9] The new regime, which now also applies to SaskTel, came into effect in June 2002 and extends through to 2007.

Non-forborne telecommunications services provided by Société en commandite Télébec (Télébec) and TELUS Communications (Québec) Inc. (TCQ) (now part of TCC) were made subject to price cap regulation as of August 2002.[10] In addition, non-forborne services provided by small incumbent telephone companies were made subject to a simplified form of price regulation effective in January 2002.[11]

Regulatory streamlining initiatives

The Commission has put in place a range of mechanisms to ensure effective and efficient regulation. These include:

1) the CRTC Interconnection Steering Committee (CISC) process that provides a forum for interested parties, with the assistance of Commission staff, to resolve competition issues of a technological, operational or administrative nature;

2) third-party mediation or staff-assisted dispute resolution to encourage and promote bilateral negotiations;

3) expedited procedures[12] for resolving competitive issues that are factual in nature, and generally relate to established rules, and not to the creation of new ones. This process is an efficient and effective way of dealing with disputes. The expedited hearings generally result in decisions being issued within a week. As a result of the expedited process, applications are withdrawn as the parties resolve their issues with the assistance of Commission staff and the expedite becomes a staff assisted dispute resolution. Between 2004 and 2006, expedited procedures were used to resolve 16 competitive issues;

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8 *Price cap regulation and related issues*, Telecom Decision CRTC 97-9, 1 May 1997.

9 *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002 (Decision 2002-34).

10 *Implementation of price regulation for Télébec and TELUS Québec*, Telecom Decision CRTC 2002-43, 31 July 2002 (Decision 2002-43).

11 *Regulatory framework for the small incumbent telephone companies*, Decision CRTC 2001-756, 14 December 2001.

12 *Expedited procedure for resolving competitive issues*, Telecom Circular CRTC 2004-2, 10 February 2004.

4) expedited processes for retail tariff filings. The Commission recognizes the need for timely disposition of tariff applications by incumbent companies for new or amended services. Initiatives were taken to streamline and expedite the processing of retail tariff filings[13] and the processing of applications concerning the withdrawal of services for which new technologies are employed and for which there are replacement services.[14] For the twelve-month period ending 31 March 2006, the average time for interim disposition of retail tariff filings was 9 business days; and

5) approval of confidential price ranges within which incumbents can offer certain services such as Bell's Digital Voice services and SaskTel's WebCall service. This permits the incumbents to respond to market forces by providing pricing flexibility and eliminating the need for regulatory approval of price changes within the range.

In Decision 2006-15,[15] the Commission established a framework for forbearance from the regulation of incumbent local exchange services that will provide greater certainty and enable the Commission to reach expeditious determinations with respect to local forbearance applications.[16] As part of this framework, the Commission defined 86 LFRs for which market share statistics are provided in Appendix 4.

2.3 Access to the PSTN

Penetration rates provide a useful indicator of consumer access to the PSTN. Penetration rates are measured by identifying the percent of households that subscribe to various local services that utilize or access the PSTN such as wireline local telephone service and wireless telephone service. Table 2.3.1 summarizes these results in the following categories: wireline, wireless, wireline and/or wireless and wireless only, covering the 2000 to 2005 period.[17]

The penetration rate of wireline and/or wireless services has remained relatively constant over the 2000 to 2004 period, at approximately 98.9% of households. Wireline penetration has gradually declined over this period from 97.7% to 96.2% of households. In contrast, wireless penetration increased 41.8% over this period, reaching 58.9% of households in 2004. The penetration rates in Table 2.3.1 indicate that 4.8% of Canadian households had only wireless service in 2005, up more than four-fold from 1.1 % in 2000.

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13 *Introduction of a streamlined process for retail tariff filings*, Telecom Circular CRTC 2005-6, 25 April 2005.

14 *New procedures for disposition of applications dealing with the destandardization and/or withdrawal of tariffed services*, Telecom Circular CRTC 2005-7, 30 May 2005.

15 *Forbearance from the regulation of retail local exchange services*, Telecom Decision CRTC 2006-15, 6 April 2006 (Decision 2006-15).

16 Aliant Telecom Inc. applied to the Federal Court of Appeal for leave to appeal this decision and Bell Canada, Saskatchewan Telecommunications and TELUS Communications Company also applied to the Federal Court of Appeal for leave to appeal an aspect of this decision. Petitions to the Governor in Council to reconsider Decision 2006-15 were filed by Aliant Telecom Inc., Bell Canada, Saskatchewan Telecommunications and TELUS Communications Company on 12 May 2006 and by the Coalition for Competitive Telecommunications on 31 May 2006.

17 June 2005 Affordability Monitoring Report pursuant to *Modification to the affordability monitoring program for residential telephone service in Canada*, Telecom Decision CRTC 2004-73, 9 November 2004. Data source: Statistics Canada.

Table 2.3.1
Canadian penetration rates
Wireline and wireless subscribers
(per 100 households)

Year	Wireline	Wireless	Wireline and/or wireless	Wireless (only)
2000	97.7	41.8	98.8	1.1
2001	97.4	47.6	98.6	1.2
2002	97.0	51.6	98.7	1.7
2003	96.3	53.9	98.8	2.5
2004	96.2	58.9	98.9	2.7
2005	n/a	n/a	n/a	4.8

Source: Statistics Canada
n/a: not available

Service improvement plans

To maintain a high level of telephone service that meets the basic service objective (BSO)[18] as established by the Commission, and to continue to expand local telephone service in Canada, the incumbent local exchange carriers (ILECs) were directed to file service improvement plans (SIPs)[19] for Commission approval. These SIPs outlined how, over a four-year period, the companies proposed to improve or upgrade telephone service, and to expand service in high-cost and non high-cost serving areas.[20] In some cases, SIPs were extended beyond four years due to the identification of additional households or delays in the roll-out of the plans.

The SIP programs in high-cost serving areas are funded from the National Contribution Fund.[21] Under the contribution regime, all telecommunications service providers that exceed a certain revenue threshold are required to contribute to the fund. SIP programs in non high-cost serving areas are funded from the ILECs' deferral accounts.[22]

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[18] In *Telephone service to high-cost serving areas*, Telecom Decision CRTC 99-16, 19 October 1999 (Decision 99-16), the basic service objective was defined as local telephone service consisting of: (a) an individual local line with touch-tone dialling; (b) dial-up Internet access service without incurring long distance charges; (c) enhanced calling features, access to emergency services, Voice Message Relay service, and privacy protection features; (d) access to operator and directory assistance services; (e) access to the long distance network; and (f) a copy of a current local telephone directory.

[19] Decision 99-16.

[20] Decision 2002-34.

[21] Decisions 2002-34 and 2002-43.

[22] Decision 2002-34.

Table 2.3.2 provides the cumulative results of the SIP program since 2002. During this time, the Commission has reviewed and approved SIPs from the large and small ILECs involving 25,674 unserved and 38,976 underserved[23] premises in 2,978 communities. SIPs have improved the level of local service. The impact of the SIPs is demonstrated by the fact that 22,959 households or 89% of households identified as unserved and 37,985 households or 98% of households identified as underserved were receiving local service by the end of 2005 that met basic service objectives as set out by the Commission.

Table 2.3.2
Service improvement plans – Status

	2002	2003	2004	2005
Unserved premises	19,680	26,620	26,486	25,674
Underserved premises	34,700	38,995	39,027	38,976
Total number of SIP communities	1,626	3,218	3,248	2,978
Previously unserved premises (service provided by SIPs)	742	5,402	12,877	22,959
Previously underserved premises (now with basic service)	14,219	20,961	34,200	37,985
Number of communities with service provided or improved to basic service under SIPs	221	865	1,703	2,499
Percent of unserved premises now with service	3.8%	20.3%	48.6%	89.4%
Percent of underserved premises improved to BSO	41.0%	53.8%	87.6%	97.5%

Source: ILECs' approved SIP filings for 2005 and previous years.

Telephone price index and the consumer price index

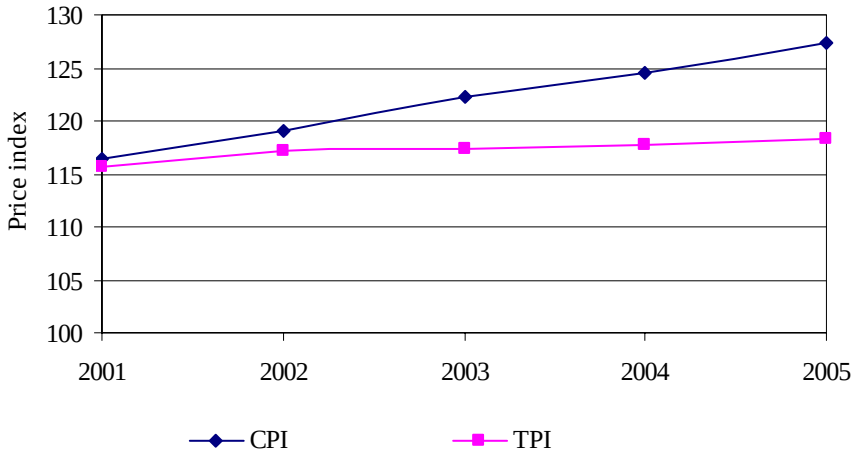
In Figure 2.3.1, the telephone price index (TPI) which reflects the price changes experienced by a household for a basket of telephone services is compared to the consumer price index (CPI) for the period 2001 to 2005. The basket of telephone services reflects a weighted average of consumer expenditures on basic local service, other local services (such as options and features), and long distance, installation and repair services. They do not, however, include wireless or Internet service expenditures.[24]

[23] In Decision 99-16, underserved households were those with telephone service that did not meet the basic service objective.

[24] Statistics Canada Catalogue No. 62-001-XPB 2001-2005.

Throughout the 2001 to 2005 period, the TPI remained below the CPI. In 2001, the rates for basic residential local service increased in most urban and rural areas, consistent with the first price cap regime established by the Commission's 1998 price cap decision[25] which applied to the large ILECs (except for SaskTel, Télébec and TCQ) and generally limited price increases to the rate of inflation less a productivity factor of 4.5%.

Figure 2.3.1
TPI v. CPI



Source: Statistics Canada

Since 2001, increases in the TPI were less than in the CPI and the difference between these two indices has consistently widened. In 2002, the price cap regime was modified with various changes made to the service baskets and to the pricing constraints applicable to residential and local exchange and option services.[26] Under this regime, residential consumers, on average, would not see a rate increase for basic local services unless inflation exceeded the productivity factor of 3.5%. From 2003 to 2005, the ILECs did not increase basic residential local rates.

[25] *Implementation of price cap regulation and related issues*, Telecom Decision CRTC 98-2, 5 March 1998.

[26] Decision 2002-34.

3.0 Overview of the telecommunications service industry

3.1 Market providers

The telecommunications service industry consists of companies ranging in size from the large national facilities-based, full service providers to the small regional, non facilities-based niche service providers such as the small Internet service providers (ISPs). The industry provides service to over 2.3 million business establishments[27] that range in size from the large multi-national companies to the small entrepreneurial companies operating in both the urban and rural regions of Canada and to over 12.5 million Canadian households.

This report encompasses not only telecommunications companies that are primarily involved in the provision of telephone services but also other service providers, such as utility companies and cable broadcasting distribution undertakings (cable BDUs), that provide telecommunications services such as Internet access or other telecommunications services.

The Commission maintains registration lists[28] of service providers that either operate or propose to operate in the Canadian telecommunications industry. Excluding the competitive pay telephone service providers, in 2005, these lists contained approximately 1,100 service providers which provided a multitude of services including local and access, long distance, Internet and broadband, data and private line, and wireless services.

To assess the state of competition in the telecommunications markets, the following classifications and sub-classifications of telecommunications service providers was adopted for this report:

1) Incumbents

    a) Large incumbents
    b) Small incumbents

2) Competitors

    a) Competitors (ILEC out-of-territory)
    b) Competitors (other) which may be further categorized as:

        (i) Facilities-based competitive service providers

            - cable BDUs
            - utility companies
            - other facilities-based providers

        (ii) Resellers

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27 Source: Statistics Canada.

28 Separate lists are maintained for non-dominant carriers, competitive local exchange carriers (CLECs), carriers, basic international telecommunications services (BITS), competitive pay telephone service providers (CPTSPs), digital subscriber line (DSL) providers, independent carriers, resellers and resellers of high-speed Internet service. These lists can be viewed at: http://www.crtc.gc.ca/eng/lists.htm.

Appendix 2 provides additional details on the classification of the telecommunications service providers.

Each of the reporting service providers was assigned to one of the above-noted categories. Certain categories of competitive service providers were combined, as disaggregated reporting could have resulted in disclosure of confidential information. Also, certain figures and percentage growth calculations may not reconcile due to rounding.

Wireless service providers are not identified separately under this classification structure. They are, however, categorized based on their affiliation with the other service providers. For example, the incumbent telephone companies' wireless affiliates are categorized as incumbent and those affiliated with cable BDUs are categorized as cable BDUs.

The incumbent carriers' out-of-territory activities are generally identified within the various sections of this report as competitors (ILEC out-of-territory). However, in cases where this is not possible, the incumbent carriers' out-of-territory activities are included with the incumbents and are noted as incumbents (including ILEC out-of-territory).

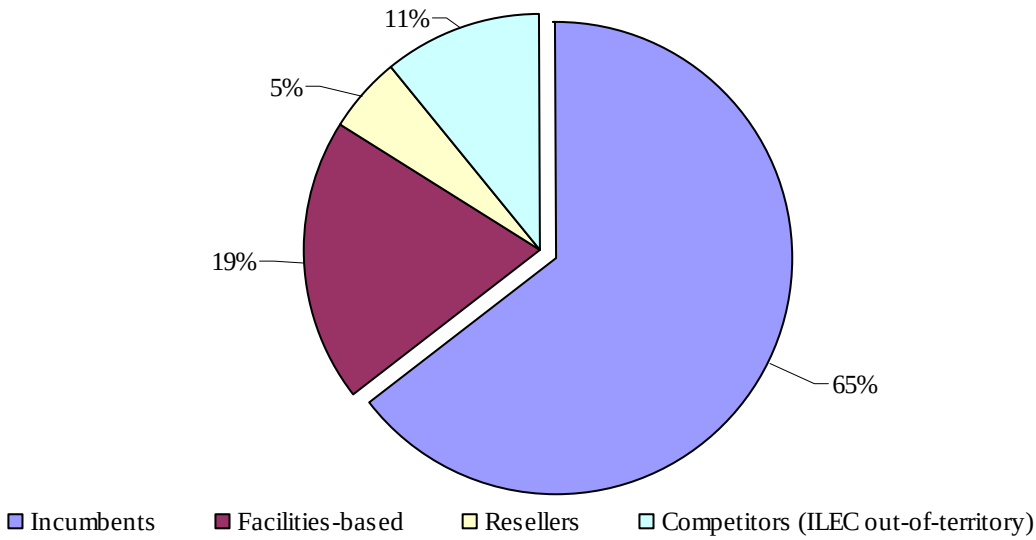
Telecommunications service providers and the markets

Total retail telecommunications revenues in 2005 were approximately $31.6 billion, up 7.5% from 2004. Of these revenues, $10.9 billion or 35% related to wireless services and $20.7 billion or 65% related to wireline services. Of these wireline revenues, approximately $10.9 billion or 53% related to residential services and $9.8 billion or 47% to business.[29]

As displayed in Figure 3.1.1, the incumbents had approximately 65% of the total wireline and wireless revenues in 2005. When operating outside of their traditional operating territory, they captured an additional 11% of the telecommunications revenues, whereas, the facilities-based competitors had approximately 19% and the resellers had 5%.

[29] Source: CRTC data collection.

Figure 3.1.1
Total telecommunications revenue market share by type of service provider
(2005)



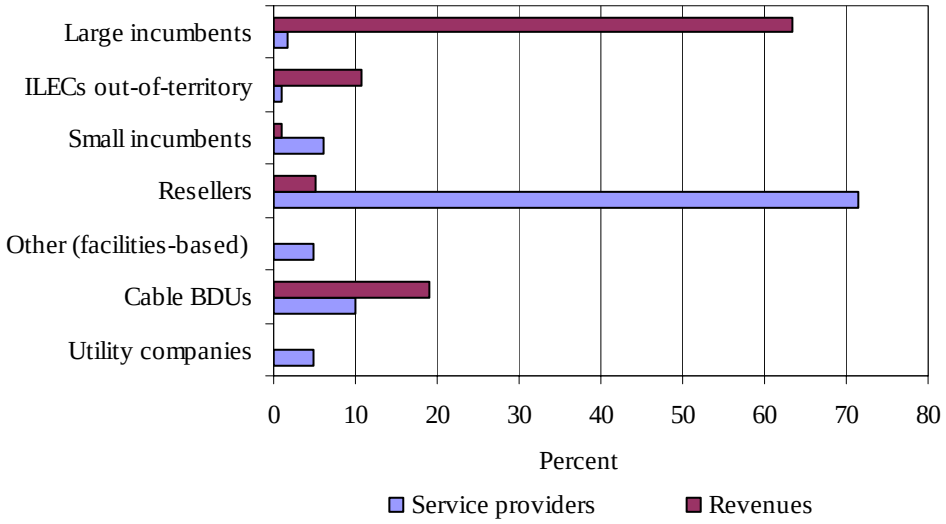
Source: CRTC data collection

As displayed in Figure 3.1.2, approximately 71% of the service providers are resellers, representing the single largest group of telecommunications service providers who operate or propose to operate in the Canadian telecommunications industry. Although the resellers represent 71% of the service providers, as a group they captured only approximately 5% of the revenues in 2005.

The large incumbents, excluding their out-of-territory operations, representing approximately 2% of the total number of service providers, captured approximately 65% of the revenues making them the largest group with respect to revenues.

The cable BDUs were the second largest group, both in terms of number of service providers and revenues, accounting for 10% of the number of service providers and 19% of the revenues. Over 86% of the cable BDUs' revenues were related to Internet and wireless services.

Figure 3.1.2
Distribution of telecommunications revenues and number of service providers by type of service provider



Source: CRTC telecommunications lists and data collection

A summary of total telecommunications service revenues in aggregate and by type of service provider for the five-year period 2001 to 2005 is provided in Table 3.1.1 below.[30] As this table demonstrates, excluding their out-of-territory operations, the incumbents' share of the industry's total telecommunications revenues decreased from 70% in 2003 to 65% in 2005.

[30] This amount includes estimates that were made for small service providers that were unable to complete the forms on time.

Table 3.1.1
Total telecommunications revenues
by type of service provider
($ millions)

	2001	2002	2003	2004	2005
Incumbents					
Large (incl. out-of-territory)	24,541.0	23,560.4	23,483.9	25,410.2	25,617.3
Small (incl. out-of-territory)	281.9	319.5	311.9	369.0	367.7
Sub-total	24,822.9	23,879.9	23,795.8	25,779.2	25,985.0
Percent of total	79%	76%	75%	77%	75%
Less: ILECs (out-of-territory)	n/a	n/a	1,679.9	3,168.1	3,721.6
Total incumbents	n/a	n/a	22,115.9	22,611.1	22,263.4
Percent of total	n/a	n/a	70%	68%	65%
Competitors					
Facilities-based service providers					
Cable BDUs	2,448.4	3,009.2	3,432.9	4,875.8	6,554.5
Utility companies	31.2	104.5	132.3	95.5	68.5
Other facilities-based	3,391.3	3,247.3	3,141.5	1,001.8	84.0
Total facilities-based	5,870.9	6,361.0	6,706.7	5,973.1	6,707.0
Resellers	709.2	1,217.6	1,315.2	1,558.6	1,788.5
Total facilities-based and resellers	6,580.1	7,578.6	8,021.9	7,531.8	8,495.5
Percent of total	21%	24%	25%	23%	25%
ILECs (out-of-territory)	n/a	n/a	1,679.9	3,168.1	3,721.6
Total competitors	n/a	n/a	9,701.8	10,699.8	12,217.1
Percent of total	n/a	n/a	30%	32%	35%
Total	31,403.0	31,458.5	31,817.7	33,311.0	34,480.5

Source: CRTC data collection
n/a: not available

With respect to wireline services, as displayed in Table 3.1.2, the incumbents had between 70% and 75% of the revenues in the residential, business and wholesale markets. When operating outside their traditional operating territory, the incumbents focused on the business and wholesale markets where they captured 16% and 20% of the revenues, respectively.

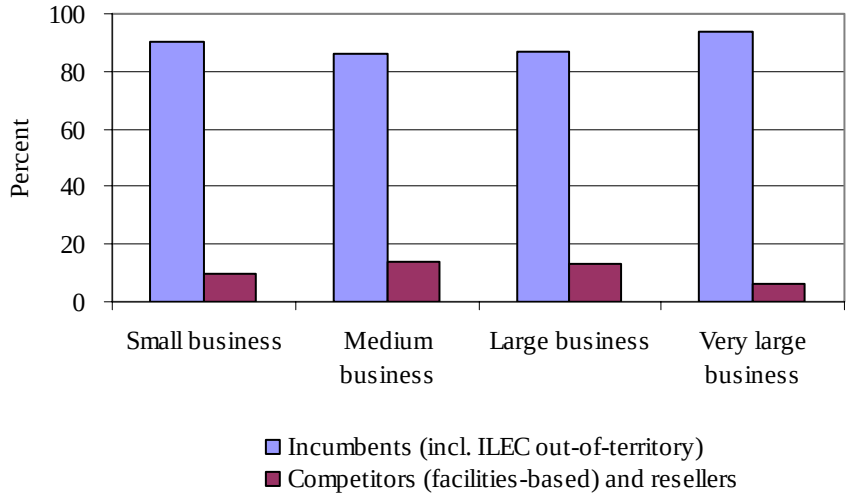
Table 3.1.2
Wireline telecommunications revenue market share
by type of service provider (2005)
(percent)

	Retail			Wholesale	Total
	Residential	Business	Total		
Incumbents	75.4	69.7	72.7	70.3	72.4
Competitors					
ILECs out-of-territory	0.2	15.8	7.5	19.7	9.0
Competitors (other)					
Facilities-based	16.1	6.9	11.8	7.9	11.3
Resellers	8.3	7.6	8.0	2.1	7.3
Subtotal	24.4	14.5	19.8	10.0	18.6
Total	24.6	30.3	27.3	29.7	27.6

Source: CRTC data collection

Figure 3.1.3 provides a comparison of the incumbents', including their out-of-territory operations, and competitors', both facilities-based and resellers, share of the total local, long distance, and data and private line revenues in the small, medium, large and very large business market segments[31] in 2005.

Figure 3.1.3
Total business market wireline revenue distribution (excluding Internet)
by customer size and type of provider
(2005)



Source: CRTC data collection

[31] For the purposes of this report, wireline business customers were segmented into small, medium, large and very large customers. A small business customer is defined as a business account that generated less than $6,000 in annual telecommunications revenues. A medium business customer is defined as a business account that generated annual revenues of at least $6,000 but less than $30,000. A large business customer is defined as a business account that generated annual revenues of at least $30,000 but less than $240,000. A very large business account is defined as a business account that generated annual revenues of at least $240,000.

3.2 Industry evolution

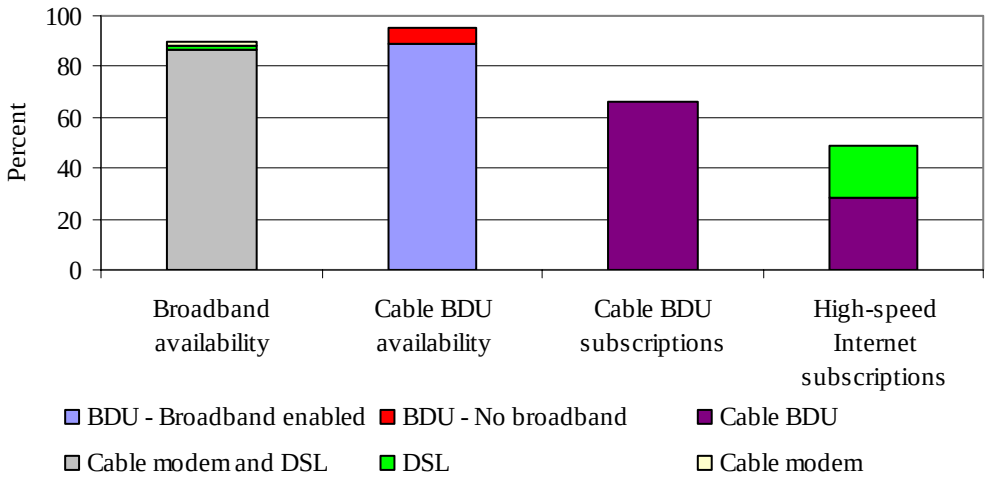
Convergence of telecommunications and broadcasting

The telecommunications service industry is a beneficiary of technological developments. These developments have resulted in advanced telecommunications networks which are efficient and offer innovative and advanced telecommunications services. These developments provide a platform for convergence in the provision of telecommunications services and video distribution.

Of the cable industry's total revenues derived from BDU services and wireline telecommunications services, approximately 24% was derived from telecommunications services (mostly Internet services). With respect to telecommunications service providers that offer DSL BDU services, a very small percentage of their revenues were derived from BDU operations.

The potential of convergence from an access facilities perspective is displayed in Figure 3.2.1.

Figure 3.2.1
BDU and high-speed Internet subscriptions and availability as a percent of the number of Canadian households
(2005)



Source: CRTC data collection, Statistics Canada and Industry Canada

The cable BDU availability bar in Figure 3.2.1 indicates that 95% of households were located within cable BDU serving areas. In addition, 89% of households were located within areas where cable BDUs can provide broadband service. This represents the potential telecommunications market for the cable BDUs as their cable distribution network provides them with the access facilities or connections to the households to provide telecommunications services. In addition, as displayed by the cable BDU subscription bar, these companies already distributed broadcasting services to 66% of the households and, as displayed by the high-speed Internet subscription bar, provided Internet service to 28% of households.

As displayed by the broadband availability bar in Figure 3.2.1, cable BDUs' broadband availability was essentially the same as that of the incumbents, as approximately 87% of households were able to obtain broadband service either by cable modem or by DSL, whereas approximately 3% of households were able to obtain broadband service but had no choice of technology (i.e., cable modem or DSL). Accordingly, the incumbents and the cable BDUs are increasingly in a position to compete in each other's respective markets.

Industry developments

The Canadian telecommunications industry continues to restructure as companies streamline or consolidate their operating structure to be more responsive to the evolving competitive markets. On 1 July 2005, Rogers acquired Call-Net Enterprises Inc. (Call-Net). More recently in 2006, Bell Canada Enterprises (BCE) announced the creation of a local telephone income trust consisting of the rural operations of Bell Canada. The trust, currently named Bell Communications, was subsequently expanded to include the operations of Télébec, NorthernTel, Limited Partnership and Aliant Telecom; while the wireless operations of these companies were combined with those of Bell Mobility. As well, in 2006, both TCI and TELE-MOBILE Company (TMC) ceased to operate as Canadian carriers. TCC began operating as the ILEC in the operating territory of the former TCI and as the wireless service provider in the territories in which TMC had operated.

4.0 Status of competition

4.1 Financial review of markets

Highlights

- Telecommunications industry service revenues increased from $33.3 billion in 2004 to $34.5 billion in 2005, a $1.2 billion or 3.5% increase. Wireline revenues decreased from $23.9 billion in 2004 to $23.5 billion in 2005, a 1.6% decrease; whereas wireless revenues increased from $9.5 billion in 2004 to $11.0 billion in 2005, a 16.2% increase.
- Telecommunications industry capital expenditures decreased from $5.7 billion in 2004 to $5.6 billion in 2005, a 1.8% decline.
- Telecommunications industry earnings before interest, taxes, depreciation and amortization (EBITDA) increased from $11.5 billion 2004 to $12.4 billion in 2005, a 7.9% increase.

Part A – Telecommunications revenues

Overview – Market segment revenues

Telecommunications revenues include revenues from both wireline and wireless service offerings. Wireline service revenues include local and access, long distance, data and private line and Internet service revenues, but exclude revenues from terminal equipment sales and rentals. Wireless service revenues include mobile and paging service revenues, as well as the terminal equipment revenues generated within this market segment.

As shown below in Table 4.1.1, wireline revenues decreased $0.4 billion or 1.6% from $23.9 billion in 2004 to $23.5 billion in 2005.

Table 4.1.1
Total telecommunications service revenues[32]
($ billions)

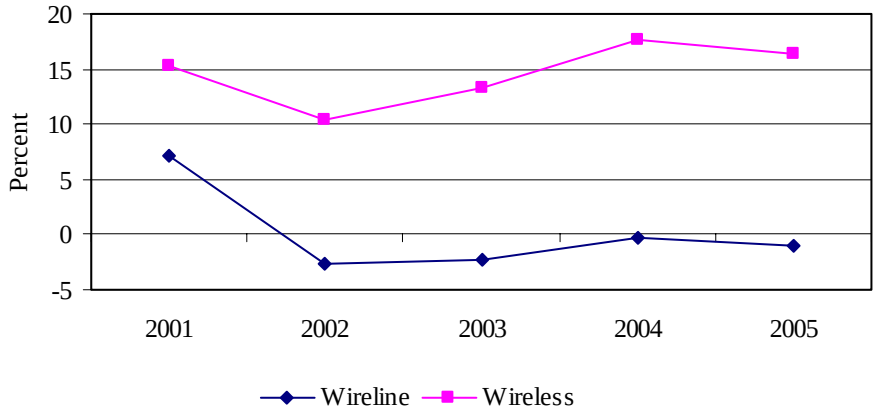
	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Wireline							
Retail	21.3	20.6	20.6	21.0	20.7	*-1.5%*	*-0.8%*
Wholesale	3.8	3.8	3.2	2.9	2.8	*-2.0%*	*-7.5%*
Subtotal	25.2	24.4	23.8	23.9	23.5	*-1.6%*	*-1.7%*
Wireless	6.4	7.1	8.0	9.5	11.0	*16.2%*	*14.5%*
Total	31.6	31.5	31.9	33.3	34.5	*3.5%*	*2.2%*

Source: CRTC data collection
Note: CAGR refers to cumulative annual growth rate

[32] Total telecommunications service revenues consist of the telecommunications service revenues of all companies surveyed. Wireline terminal equipment, as well as other non-telecommunications revenues, were excluded. Estimates were used to capture the revenues of the smaller service providers that were not required to complete data forms. These estimates were based on the information provided by the service providers in their registration forms.

This 1.6% decline in wireline revenues was more than offset by wireless growth, which continued to be strong at 16.2%. Wireless revenues increased from $9.5 billion in 2004 to $11.0 billion in 2005. Wireline revenues have declined since 2002. In contrast, wireless revenue growth has been strong since 2001, at approximately 15%, dipping in 2002 to 10% and recovering in 2003 and increasing to 16.2% in 2005.

Figure 4.1.1
Wireline and wireless annual revenue growth rates (%)



Source: CRTC data collection

Table 4.1.2 below illustrates that the long distance and data and private line revenues continued their downward revenue trend in 2005. Long distance revenues declined $0.5 billion or 8.6% in 2005, mostly due to declining prices. Declining prices and reduced demand in the private line market resulted in a decrease in data and private line revenues of $0.3 billion, or 7.2%. Internet revenues increased from $4.2 billion to $4.5 billion, a 8.8% increase. The local and access revenues increased slightly from $9.7 billion in 2004 to $9.8 billion in 2005, a 0.7% increase. Despite the decline in total wireline revenues, these revenues continued to account for the majority (68%) of telecommunications revenues in 2005.

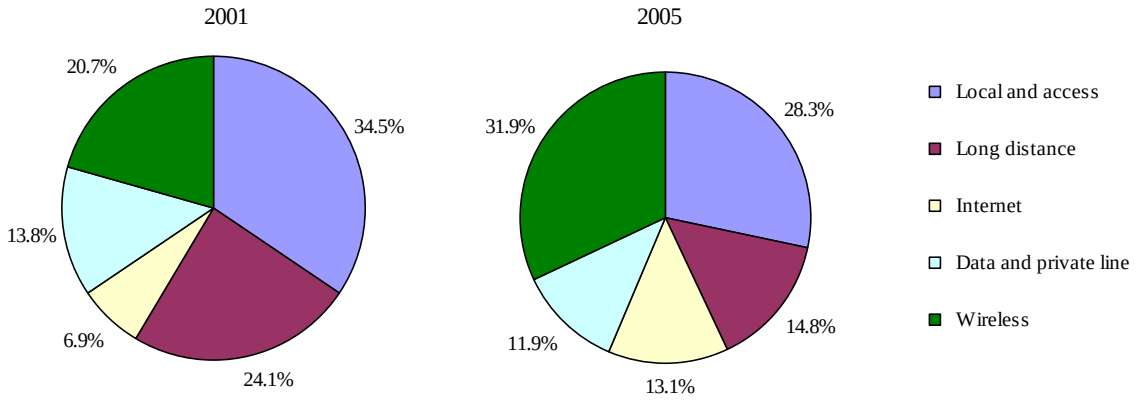
Table 4.1.2
Segmented telecommunications service revenues
($ billions)

	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2002-2005*
Wireline						
Local and access	10.0	9.7	9.7	9.8	*0.7%*	*-0.8%*
Long distance	6.5	5.9	5.6	5.1	*-8.6%*	*-7.9%*
Internet	3.3	3.7	4.2	4.5	*8.8%*	*11.3%*
Data and private line	4.5	4.5	4.4	4.1	*-7.2%*	*-3.4%*
Total wireline	24.4	23.8	23.9	23.5	*-1.6%*	*-1.2%*
Wireless	7.1	8.0	9.5	11.0	*16.2%*	*15.7%*
Total industry	31.5	31.9	33.3	34.5	*3.5%*	*3.1%*

Source: CRTC data collection

Figure 4.1.2 compares the distribution of telecommunications revenues by market sector in 2001 to 2005. Over this five-year period, Internet and wireless revenues as a percent of total revenues increased significantly. When combined, the revenues from these two market sectors accounted for 45% of total telecommunications revenues in 2005 compared to 28% in 2001. Conversely, the revenues from the remaining three sectors, local and access, long distance, and data and private line, as a percent of total telecommunications revenues, declined to 55% in 2005 from 72% in 2001.

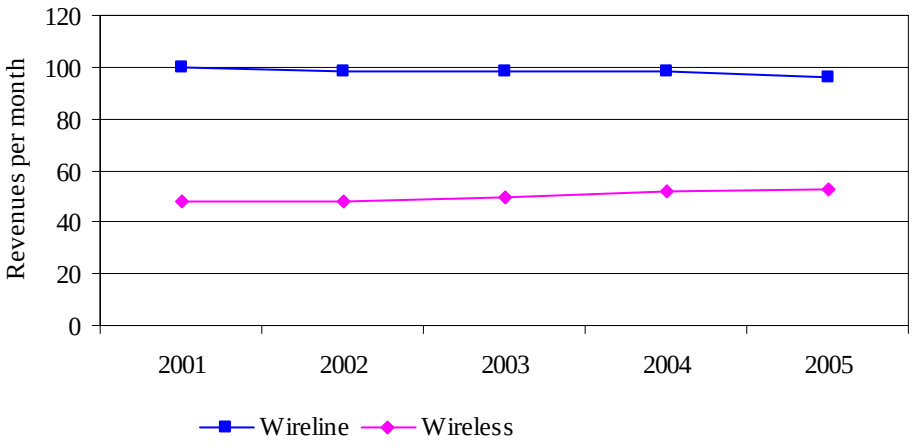
Figure 4.1.2
Distribution of telecommunications revenues by market sector



Source: CRTC data collection

Figure 4.1.3 below shows that the average monthly wireline revenue per line which remained relatively stable since 2001, declined from $98 in 2004 to $96 in 2005. Monthly wireless revenue per subscriber, however, steadily increased from $48 in 2001 to $53 in 2005. The local and access portion of the monthly revenue per line in 2005 for wireline service providers was roughly 42% of the total monthly revenue per line.

Figure 4.1.3
Average monthly revenues per line/subscriber



Source: CRTC data collection

Part B – Key financial indicators[33]

The following section provides a broader indication of the state of the Canadian telecommunications industry through the study of key indicators such as EBITDA and capital expenditures. Due to the difficulty of determining these financial indicators for the out-of-territory operations of the incumbents, the financial results of the incumbents include their out-of-territory operations.

a) EBITDA

As shown in Table 4.1.3 below, the EBITDA for the industry as a whole increased from $11.5 billion in 2004 to $12.4 billion in 2005. Wireline competitors' (other) EBITDA increased from $0.1 billion in 2004 to $0.7 billion in 2005. However, wireline incumbents, including their out-of-territory operations, decreased by $0.4 billion to $7.3 billion in 2005.

[33] It is important to note that the universe surveyed for the calculation of these metrics differs slightly from the universe surveyed in the calculation of the telecommunications revenues calculated in Tables 4.1.1 and 4.1.2. Notably, companies whose primary source of revenue is not telecommunications service have been excluded entirely, as have providers who were unable to segment the key financial data related to the telecommunications portion of their operations.

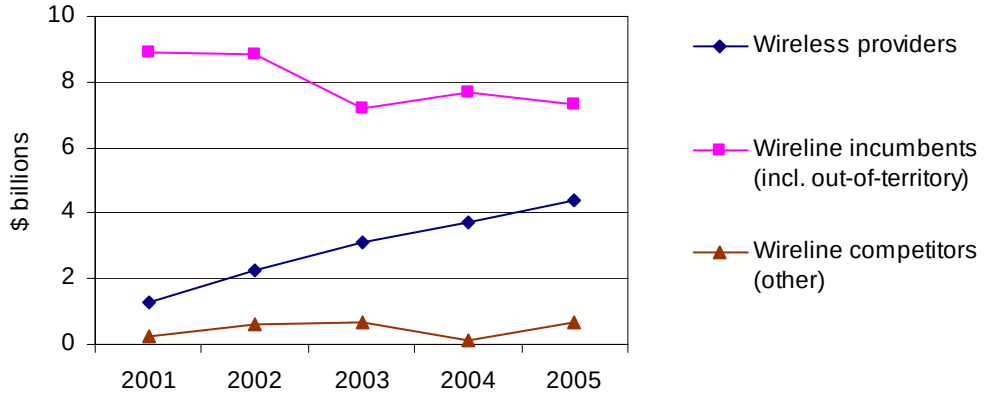
Table 4.1.3
EBITDA by type of provider
($ billions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Wireline							
Incumbents	8.9	8.7	7.2	7.7	7.3	*-5.3%*	*-4.8%*
Competitors (other)							
Facilities-based competitors	#	#	#	#	0.5		
Resellers	#	#	#	#	0.2		
Subtotal	0.3	0.7	0.6	0.1	0.7	*562.7%*	*24.9%*
Wireline subtotal	9.2	9.4	7.8	7.8	8.0	*2.7%*	*-3.4%*
Wireless	1.3	2.2	3.1	3.7	4.4	*18.9%*	*35.6%*
Total	10.5	11.6	10.9	11.5	12.4	*7.9%*	*4.3%*

Source: CRTC data collection

Wireless service providers experienced continued growth in EBITDA in 2005. These providers registered an 18.9% increase in EBITDA from $3.7 billion in 2004 to $4.4 billion in 2005, increasing their share of the industry EBITDA from 32% in 2004 to 35% in 2005.

Figure 4.1.4
Comparison of EBITDA by type of provider



Source: CRTC data collection

b) Telecommunications expenditures

The main cost components of provisioning telecommunications services are capital expenditures related to the building of a service provider's own facilities and inter-carrier expenses related to acquiring access to the facilities of other service providers.

i) Capital expenditures

Capital expenditures in the Canadian telecommunications industry for the period 2001 to 2005 are displayed below in Table 4.1.4, by type of provider. Total capital expenditures in the Canadian telecommunications industry were $5.6 billion in 2005, a 1.8% decrease from $5.7 billion in 2004.

Table 4.1.4
Capital expenditures by type of provider
($ billions)

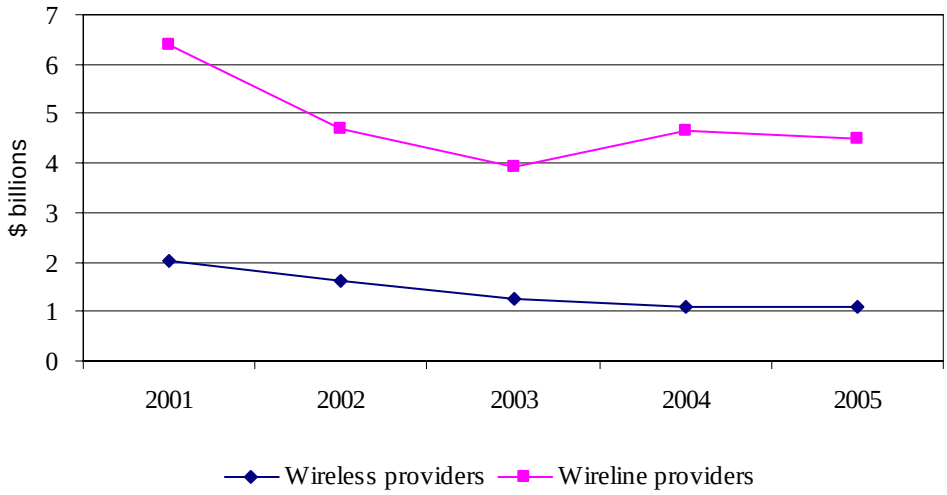
	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Wireline							
Incumbents	5.0	4.0	3.2	4.2	3.8	*-8.6%*	*-6.4%*
Competitors (other)							
Facilities-based competitors	n/a	n/a	n/a	n/a	0.6		
Resellers	n/a	n/a	n/a	n/a	0.1		
Subtotal	1.4	0.7	0.7	0.4	0.7	*64.8%*	*-17.2%*
Wireline subtotal	6.4	4.7	3.9	4.6	4.5	*-2.2%*	*-8.4%*
Wireless	1.5	1.6	1.3	1.1	1.1	*0.1%*	*-7.4%*
Total	7.9	6.3	5.2	5.7	5.6	*-1.8%*	*-8.2%*

Source: CRTC data collection
n/a: not available

Wireless capital expenditures, excluding spectrum, remained relatively unchanged at $1.1 billion in 2005. Spectrum related capital expenditures in 2005 were minimal at less than $10 million.

Wireline capital expenditures representing 80% of the industry's expenditures, decreased from $4.6 billion in 2004 to $4.5 billion in 2005, a decrease of $0.1 billion. The decline in capital expenditures of $0.4 billion by the incumbents was partly offset by the increase in capital expenditures of the facilities-based competitors and resellers. Wireline capital expenditures averaged approximately $4.4 billion since 2002, while wireless capital expenditures have trended downward since 2002, declining from $1.6 billion in 2002 to $1.1 billion in 2005. Most of the decline in wireless capital expenditure can be attributed to sharing agreements and roaming arrangements among the wireless service providers which tend to minimize the need for expanding their networks.

Figure 4.1.5
Capital expenditures by type of provider
(wireline v. wireless)

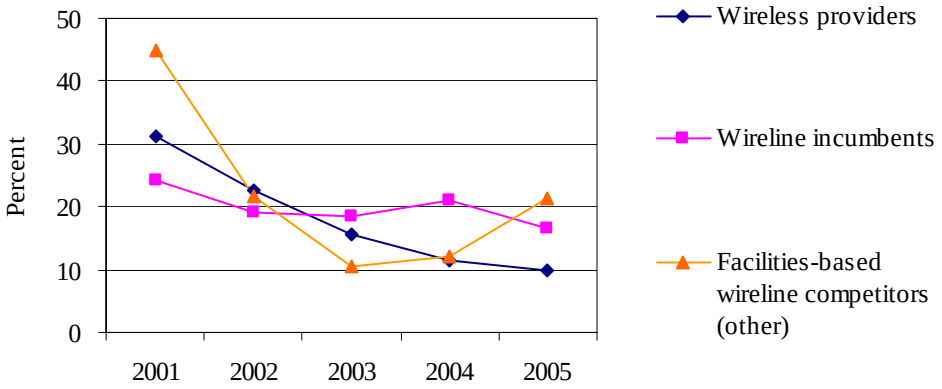


Source: CRTC data collection

Capital intensity

As shown below in Figure 4.1.6, the capital expenditures as a percentage of revenues for wireless service providers, wireline incumbents, including their out-of-territory operations, and facilities-based wireline competitors, shifted significantly over the past five years. While wireline incumbents' capital expenditures as a percentage of revenues were relatively constant at 20% since 2002, they declined to 16% in 2005. The facilities-based competitors' capital expenditures as a percentage of revenues declined from 22% in 2002 to 11% in 2003 and subsequently increased to 21% in 2005. Wireless providers showed a significant decrease in their capital expenditures as a percentage of revenues over the past four years, dropping from 31% in 2001 to 10% in 2005. Increased coverage through sharing agreements and roaming arrangements which reduced the need for capital expenditures and the growth in wireless revenues accounted for most of the decrease.

Figure 4.1.6
Capital expenditures as a percentage of revenues



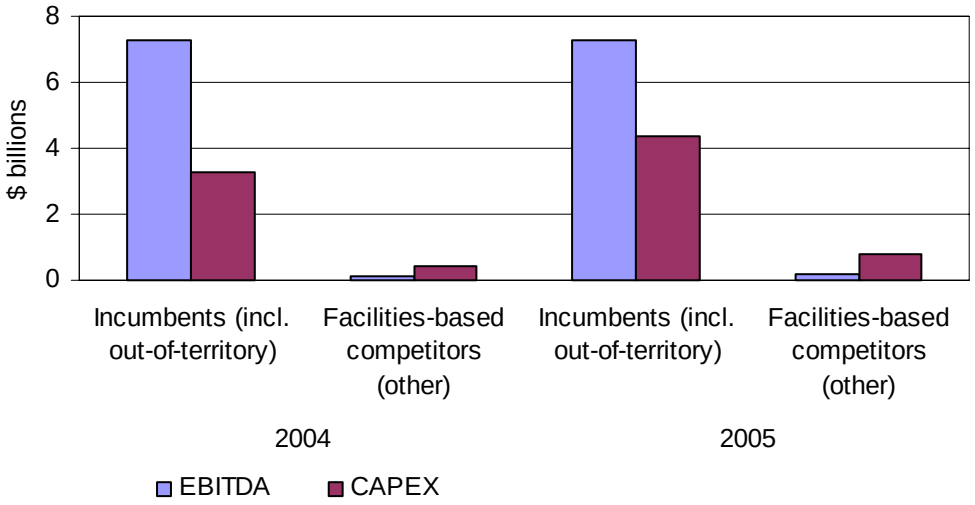
Source: CRTC data collection

Based on the most recently available data,[34] an international comparison of capital expenditures as a percentage of revenues for 2003 indicates that at 17%, Canada's capital expenditures as a percentage of revenues was higher than that of the United States and United Kingdom which were at 12% and 13% respectively. However, when compared to Australia, Canada's capital expenditures as a percentage of revenues were below that of Australia at 21%.

Figure 4.1.7 below compares EBITDA and capital expenditures (CAPEX) for incumbents, including their out-of-territory operations, and facilities-based competitors (other) for the years 2004 and 2005. The data shows that in each year, the incumbents' EBITDA far exceeded their capital expenditures, indicating that the incumbents were generally able to rely on internally-generated funds to finance their expenditures. This has not generally been the case with facilities-based competitors. Although capital expenditures were minimal for facilities-based competitors, their EBITDA was not sufficient to cover these expenditures for both 2004 and 2005.

[34] Source: OECD Communications Outlook (2005). Capital expenditures as a percentage of revenues was only available for years up to 2003.

Figure 4.1.7
Wireline EBITDA v. wireline CAPEX



Source: CRTC data collection

ii) Inter-carrier payments

Inter-carrier expenses, excluding settlement, represent approximately 20% of total wireline operating expenses.[35] Table 4.1.5 below displays inter-carrier payments, excluding settlement, as a percentage of revenues for incumbents, including their out-of-territory operations, and competitors in the wireline industry by market sector. In 2005, both facilities-based competitors and resellers had significantly higher inter-carrier payments per revenue dollar in each segment.

Table 4.1.5
Inter-carrier payments per revenue dollar
by wireline market sector[36]
(2005)

	Incumbents (incl. out-of-territory)	Competitors	
		Facilities-based	Resellers
Local	2.6%	31.4%	64.8%
Long distance	21.3%	50.3%	41.4%
Internet	4.6%	7.3%	17.8%
Data and private line	15.5%	37.8%	41.0%

Source: CRTC data collection

The higher inter-carrier payments as a percentage of revenues in the long distance market by all the service providers is generally a reflection of (a) the extent of their networks to carry the traffic, and (b) their various unlimited or flat rate calling plans, as some of these payments are usage based.

[35] Source: CRTC data collection.

[36] Inter-carrier expenses do not include contribution payments.

c) Service bundling

Over the past number of years, telecommunications service providers have increasingly relied on the packaging or bundling of various services to maintain or increase their revenues. For example, those providing local service are increasingly bundling long distance service with their local service offering. Some service providers, such as the wireless providers, offer family plans. For example, in 2005, 20% of wireless subscribers had family plans.[37]

Service providers that offer the full spectrum of telecommunications services are well positioned to take advantage of the benefits of bundling services. Smaller companies that are not full service providers who want to realize the benefits of bundling are required to enter into agreements with other service providers to complement their service offerings. In 2005, approximately 10% of residential accounts consisted of a bundle of services that included two or more of the following services; local, Internet, cable TV, and wireless.[38]

[37] Source: FASTFORWARD Wireless & Telecom Module 2005, Solutions Research Group, website: www.srgnet.com.

[38] Source: CRTC data collection.

4.2 Local and access

Highlights

- In 2005, total local and access revenues, and lines both increased slightly to $9.8 billion and to 20.8 million lines, respectively.
- Retail revenues increased slightly to $8.6 billion, of which the competitors held 8.4%, up from 6.5% in 2004.
- The number of retail lines increased slightly to 19.3 million lines, of which the competitors held 9.7%, up from 6.4% in 2004.

Sector description

a) Description of services

The local and access sector is comprised of services relating to access and connectivity with the public switched telephone network (PSTN) including services used both by retail and wholesale customers.

Local wireline telephone service has traditionally included a managed access from a local exchange carrier (LEC) to the customer, a connection to the PSTN and a telephone number. Utilizing a telephone set or other terminal equipment, the customer may place unlimited calls within a local calling area for a basic monthly fee.

In Decision 2005-28,[39] the Commission determined that local voice over Internet protocol (VoIP) services, defined as local voice communication services using Internet Protocol (IP) that use telephone numbers that conform to the North American Numbering Plan and that provide universal access to and/or from the PSTN, are in the same relevant market as switched-circuit local exchange services. As such, local VoIP services have been included in determining local and access sector results for 2005.

Local VoIP services include managed access services (access dependent) such as those provided by cable BDUs and access independent Internet telephony services. Computer-to-computer communication which does not access the PSTN is not considered to be local VoIP service.

Local service also includes other services such as automated call answering services, business Centrex, integrated services digital network (ISDN) services, and other user services such as inside wiring, installation and repair, teleconferencing, and miscellaneous local services.

Local and access revenues also include the sale of local services on a wholesale basis and with the introduction of local competition, has included revenues from access service for interconnection between carriers and other service providers, including switching and aggregation, and unbundled network components.

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[39] *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2005-28, 12 May 2005 (Decision 2005-28). In P.C. 2006-305 dated 4 May 2006, the Governor in Council referred the Decision 2005-28 back to the Commission for reconsideration.

Contribution revenues, which are received by LECs based on the number of residential lines they provide in high-cost serving areas (HCSAs) and the extent to which they are priced below cost, are also included in local and access revenues. While contribution revenues are included in the overall sector revenues reported in Table 4.2.1, they are excluded from the remaining tables in the local and access section of this report.

Revenues from the sale of wireline terminal equipment, such as telephone handsets and private branch exchange (PBX) switching equipment, are also excluded from the local and access revenues covered in this report.

b) Markets and observations for 2005

Table 4.2.1 provides results for total local and access revenues, and lines for the period 2001 to 2005.

Table 4.2.1
Total local and access revenues, and lines

	2001	2002	2003	2004		2005	*Growth 2004-2005*	*CAGR 2001-2005*
Total local and access revenues ($ millions)	11,203	10,003	9,699	9,695		9,762	*0.7%*	*-3.4%*
Less: Contribution revenues ($ millions)	1,002	250	247	240		251	*4.6%*	*-29.3%*
Local and access service revenues ($ millions)	10,021	9,724	9,452	9,455		9,511	*0.6%*	*-1.3%*
Lines (thousands)	21,126	20,622	20,612	20,563	#	20,780	*1.1%*	*-0.4%*

Source: CRTC data collection

Total local and access revenues in Table 4.2.1 include revenues from local and access monthly rates and non-recurring service charges, contribution, and local pay telephone services. Local lines in Table 4.2.1 include local pay telephones, as well as lines provided on a wholesale basis to affiliated companies and third party providers of telecommunications services, and official telephone service (OTS) lines. OTS lines are non-revenue generating lines provisioned by a LEC for internal operational use. OTS lines have been included in Table 4.2.1 in order to indicate the overall size of the PSTN. However, in order to present an appropriate competitive analysis, all other tables and figures in this section, unless otherwise noted, exclude OTS lines, as well as pay telephone lines and revenues, and contribution revenues.

Between 2004 and 2005, total local and access revenues, and lines both increased slightly to $9.8 billion and 20.8 million lines, respectively.

i) Local competition

The use of IP for voice communications became more prevalent in 2005. Whereas telecommunications service providers are already operating, or transitioning, legacy networks to cost-effective IP-based networks, retail consumers are now benefiting from the choice of services made available by VoIP-enabled technology. In particular:

- cable BDUs have introduced telephone service by utilizing their existing distribution networks (cable telephony); and

- the availability of services facilitated by a broadband Internet service, which allows a user to interconnect with the PSTN, using the standard North American Numbering Plan (Internet telephony).

Local VoIP services are capable of reproducing the functionality of traditional local service and operate over either a managed access (access dependent) or a non-managed access (access independent). Similar to traditional local service, local VoIP services offered by cable BDUs are provided over a managed access connection between the subscriber and the service provider. Local VoIP services provided over a broadband Internet access are considered access independent because the customer selects the broadband provider and the local VoIP service provider independently.

In 2005, the cable BDUs aggressively entered the residential market and were a significant contributor to the growth in competitor market share.

ii) Continued consumption of telephone number resources

The number of in-service central office (CO) codes continues to increase annually.[40] In addition to telephone number resources used to support the growth of existing and new services, other factors contributing to this consumption include past CO code assignment practices and overall number utilization rates.

In certain area codes, this consumption will eventually exhaust all available CO codes. The typical resolution is the area-code overlay, where additional area codes are added to the same geographic area as the nearly exhausted area code. An effect of implementing an area-code overlay is the requirement for customers to utilize 10-digit dialling when placing local calls to telephone numbers in the geographic area of the affected area code. In 2006, due to new code overlays in parts of Ontario and Quebec, customers will be required to dial 10 digits when making local calls. Also in 2006, 10-digit dialling will be required in area codes 613 and 819 in order to extend the life of both these area codes.

c) Sector participants

The large incumbents operate in most areas of the country, both in their original operating territories, and in other regions either directly or through affiliate operations. Small incumbents operate in limited areas of Ontario, Quebec, and British Columbia, and include both municipally-owned, and public- and privately-held carriers. Other participants include facilities-based service providers operating as competitive LECs, including cable BDUs that deliver services using their own infrastructure. Lastly, are the resellers of PSTN services, purchased from the incumbent carriers or from facilities-based service providers.

There has been a limited amount of competitor penetration in the local and access sector since the introduction of local competition in 1998. Competitors have typically been facilities-based service providers and resellers. More recently, some ILECs have expanded outside of their traditional serving territories, either organically or through acquisition, thereby providing competition either

[40] Canadian Number Administrator – Annual number resource utilization forecast, www.cnac.ca/co_codes/nruf/annual/nruf_annual.htm.

directly or through affiliate companies. Small incumbents are also increasingly operating outside of their traditional territories or acquiring other small incumbents, as seen with the acquisition of People's Communications Inc. by Amtelecom Income Fund. In this report, competitive services provided by incumbents outside of their traditional operating territories are referred to as competitors (ILEC out-of-territory).

d) Regulatory framework

Local telephone service in the territories of the large ILECs, excluding the territories of SaskTel, Northwestel, Télébec and TCC's operations in Quebec, was opened to facilities-based competition in 1998. The Commission continues to regulate local services provided by ILECs, as well as the interconnection services provided by all LECs. Prior to the introduction of local competition, ILECs were subject to a rate-of-return regulatory framework, under which local service prices were set on a revenue requirement basis using a rate of return approved by the Commission.[41]

With the introduction of competition in local services, price cap regulation of the ILECs Utility segment was introduced. Price cap regulation uses a formula composed of three basic elements: inflation index, productivity offset and exogenous factors, to determine on an annual basis, the maximum allowable prices for different regulated services such as basic residential local services and single or multi-line business local services.

Price cap regulation provides ILECs with stronger incentives to increase productivity, operate more efficiently and be more innovative in the provision of services.

e) Regulatory developments

In Decision 2005-28, the Commission set out details of the regulatory regime applicable to the provision of local VoIP services which determines, among other things, that:

- local VoIP service providers not operating as Canadian carriers are to register with the Commission as resellers;
- local VoIP services are contribution-eligible; and
- local VoIP services are part of the same relevant market as circuit-switched services.

In Decision 2006-14,[42] among other things, the Commission opened the territories of all small ILECs to local competition.

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41 Local competition is not allowed in the operating territory of Northwestel.

42 *Revised regulatory framework for the small incumbent local exchange carriers*, Telecom Decision CRTC 2006-14, 29 March 2006.

Local exchange service is one of the last major telecommunications markets that continues to be regulated in Canada. Decision 2006-15[43] set out criteria that large incumbents must meet for forbearance from regulation of residential or business local exchange service within a defined geographic area. These areas, constructed using geographic elements administered by Statistics Canada, are referred to as local forbearance regions (LFRs). The geographic area of Canada (with the exception of the operating territories of Northwestel and the small ILECs) is divided into 86 LFRs. Prior to being granted forbearance, the incumbent must demonstrate, among other criteria, that their market share within an LFR is 75% or less. As set out in the decision, Appendix 4 to this report provides a table displaying residential and business market line-share as of 31 December 2005 for incumbents, competitors (ILEC out-of-territory) and competitors (other) by LFR.

Market segments

Table 4.2.2 presents a summary of local and access revenues (exclusive of contribution, terminal equipment and pay telephone) segmented on a residential, business and wholesale basis for the period 2001 to 2005. Table 4.2.3 provides the number of local lines that correspond to these market segments.

Table 4.2.2
Local and access revenues by market segment
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Residential	5,060	5,140	5,132	5,099	5,086	*-0.3%*	*0.1%*
Business	3,946	3,544	3,398	3,402	3,472	*2.1%*	*-3.1%*
Wholesale	740	893	755	822	828	*0.7%*	*2.8%*
Total	9,746	9,577	9,285	9,323	9,386	*0.7%*	*-0.9%*

Source: CRTC data collection

Table 4.2.3
Local lines by market segment
(thousands)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Residential	12,920	12,913	12,886	12,891	12,900	*0.1%*	*0.0%*
Business	7,013 #	6,476 #	6,404 #	6,318 #	6,364	*0.7%*	*-2.4%*
Wholesale	474	521	611	617	788	*27.7%*	*13.5%*
Total	20,407 #	19,910 #	19,901 #	19,826 #	20,052	*1.1%*	*-0.4%*

Source: CRTC data collection

[43] *Forbearance from the regulation of retail local exchange services*, Telecom Decision CRTC 2006-15, 6 April 2006 (Decision 2006-15). Aliant Telecom Inc. applied to the Federal Court of Appeal for leave to appeal this decision and Bell Canada, Saskatchewan Telecommunications and TELUS Communications Company also applied to the Federal Court of Appeal for leave to appeal an aspect of this decision. Petitions to the Governor in Council to reconsider Decision 2006-15 were filed by Aliant Telecom Inc., Bell Canada, Saskatchewan Telecommunications and TELUS Communications Company on 12 May 2006, and by the Coalition for Competitive Telecommunications on 31 May 2006.

In 2005, local and access revenues increased slightly to $9.4 billion. While revenues for the residential segment declined marginally, the business and wholesale segments experienced revenue growth of 2.1% and 0.7%, respectively.

Over the same period, the total number of local lines increased by just over 1% to 20.1 million lines, with the number of lines within the residential and business segments each increasing slightly, and the wholesale segment increasing by 27.7% to 0.8 million lines.

a) Local retail market

Retail segment results (aggregated residential and business revenues and lines) are a measure of the addressable residential and business end-user market. Factors that impact the result within the retail segment may include competitive and technological developments, as well as overall national economic health. Table 4.2.4 provides retail revenues and lines for the period 2001 to 2005.

Table 4.2.4
Total retail revenues and lines

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Revenues ($ millions)	9,006	8,684	8,530	8,501	8,558	*0.7%*	*-1.3%*
Lines (thousands)	19,933 #	19,389 #	19,290 #	19,209 #	19,264	*0.3%*	*-0.8%*

Source: CRTC data collection

In 2005, retail revenues held by competitors increased by 31.5%[44] to $723 million, representing 8.4% of all retail revenue, up from 6.5% in 2004. In 2005, the number of retail lines provided by competitors increased by 51.1% to 1.9 million lines. The number of competitor-provided retail lines provisioned using some component of wholesale services also grew as is discussed in the section entitled Local wholesale market.

Table 4.2.5 shows the share of local retail lines held by the incumbents, excluding Northwestel, in their incumbent operating territories for each province. Within the provinces, the incumbents held 90.3% of local retail lines.

Table 4.2.5
Incumbent local retail market share by province (lines)

Province	2005
British Columbia	91.9%
Alberta	87.1%
Saskatchewan	99.9%
Manitoba	96.7%
Ontario	88.6%
Quebec	90.9%
New Brunswick	99.1%
Nova Scotia	82.1%
Prince Edward Island	87.3%
Newfoundland and Labrador	96.1%

Source: CRTC data collection

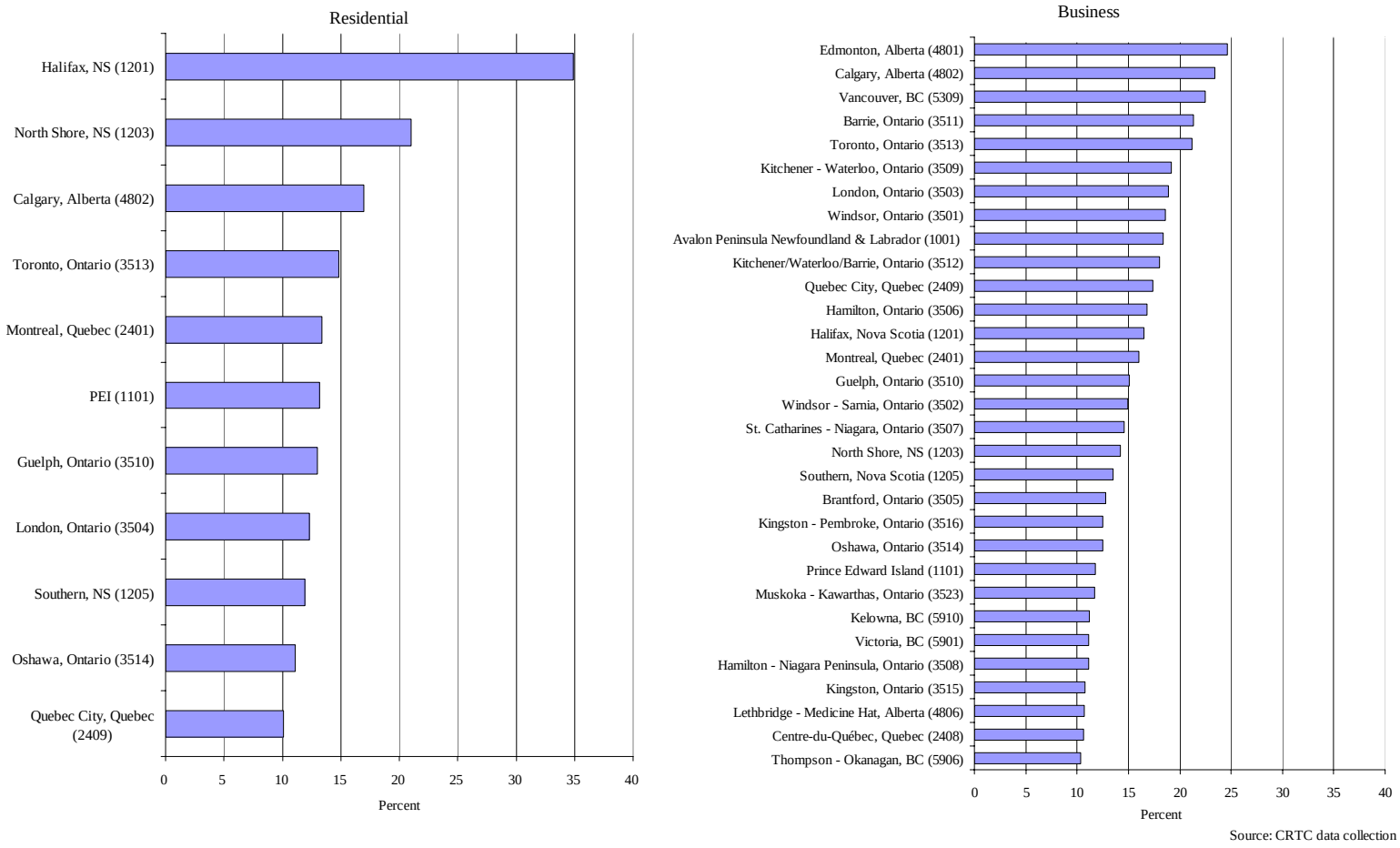
[44] Source: CRTC data collection.

Figure 4.2.1 provides further detail on retail market share, disaggregated by residential and business segments, measured in terms of the number of local lines held by competitors.

The 86 LFRs contain just over 98% of all local retail lines in Canada.[45] As displayed in Figure 4.2.1, there were 11 LFRs within the local residential market with 10% or greater competitor market share. The addressable residential market within these 11 LFRs represented 39% of all local residential lines. Similarly, within the local business market, there were 31 LFRs with 10% or greater competitor market share that represented an addressable market of 68% of all business lines.

[45] Source: CRTC data collection.

Figure 4.2.1
Competitor market share (local lines) in most competitive LFRs[46]



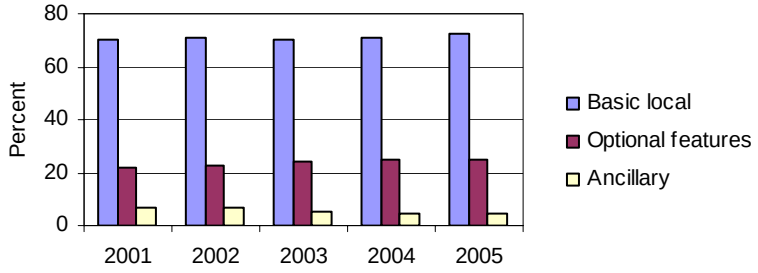
Source: CRTC data collection

[46] LFR boundaries are defined in Decision 2006-15. A complete list of competitor market share by LFRs is contained in Appendix 4.

b) Local residential market

Local residential service is composed of three primary components: basic local service, optional service features, and ancillary services such as connection and inside wiring. Figure 4.2.2 shows that the distribution of local residential revenues amongst these three components has remained essentially unchanged over the last several years, with basic local service representing 72% of local residential revenues in 2005.

Figure 4.2.2
Local residential revenues by component



Source: CRTC data collection

Table 4.2.6 and Table 4.2.7 present local residential revenues and lines, respectively, for the period 2001 to 2005.

Table 4.2.6
Local residential revenues
($ millions)

	2001	2002	2003	2004		2005	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents	5,038	5,082	5,035	4,955	#	4,837	*-2.4%*	*-1.0%*
Competitors (ILEC out-of-territory)	n/a	n/a	0	2	#	3	*50.0%*	*n/a*
Competitors (other)	22	58	97	142		246	*73.2%*	*82.9%*
Total	5,060	5,140	5,132	5,099		5,086	*-0.3%*	*0.1%*

Source: CRTC data collection
n/a: not available

In 2005, local residential revenues declined slightly to just under $5.1 billion, while over the same period, the number of local residential lines were essentially unchanged at 12.9 million lines.

As shown in Table 4.2.6, local residential revenues held by incumbents decreased by 2.4% to $4.8 billion in 2005, while competitors' local residential revenues increased by 72.9% to $249 million. The share of local residential revenues held by competitors grew to 4.9% in 2005, up from 2.8% in 2004.

Table 4.2.7
Local residential lines
(thousands)

	2001	2002	2003	2004		2005	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents	12,846	12,729	12,627	12,463	#	11,924	*-4.3%*	*-1.8%*
Competitors (ILEC out-of-territory)	n/a	n/a	1	10	#	13	*30.0%*	*n/a*
Competitors (other)	74	184	258	418		963	*130.4%*	*89.9%*
Total	12,920	12,913	12,886	12,891		12,900	*0.1%*	*0.0%*

Source: CRTC data collection
n/a: not available

As shown in Table 4.2.7, the number of local residential lines held by incumbents decreased by 4.3% to 11.9 million lines in 2005, while the number of competitors' lines grew by 128.0% to just under 1.0 million lines. The share of local residential lines held by competitors more than doubled from 3.3% in 2004 to 7.6% in 2005.

In 2005, the dramatic increase in the number of competitor-provided residential lines was due primarily to the launch of residential telephone service by a number of large cable BDUs. Although competitors who began offering residential service prior to 2005 experienced strong organic growth, cable telephony and access-independent local VoIP services accounted for 59% and 11%, respectively, of the increase in competitor-provided residential lines.

Local residential revenues and lines provided by competitors (ILEC out-of-territory) remained negligible in 2005 as they continued to focus on the business and wholesale market segments.

Over the past several years, the number of Canadian households has grown consistently,[47] yet the number of residential telephone lines remained almost unchanged in 2005. A number of demographic and technology factors may be contributing to this, including the growth of wireless subscriptions and wireless-only households, and the elimination of secondary telephone lines as the use of facsimile declined and consumers migrated to broadband Internet.

c) Local business market

Table 4.2.8 and Table 4.2.9 present local business revenues and lines, respectively, for the period 2001 to 2005.

Table 4.2.8
Local business revenues
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents	3,736	3,258	3,036	2,996	2,998	*0.1%*	*-5.4%*
Competitors (ILEC out-of-territory)	n/a	n/a	92	298	316	*6.0%*	*n/a*
Competitors (other)	210	286	270	108	158	*46.3%*	*-6.9%*
Total	3,946	3,544	3,398	3,402	3,472	*2.1%*	*-3.1%*

Source: CRTC data collection
n/a: not available

[47] Canadian Housing Observer, 2005.

In 2005, local business revenues increased by 2.1% to $3.5 billion, while over the same period, the number of local business lines increased slightly to 6.4 million lines.

As shown in Table 4.2.8, local business revenues held by the incumbents was essentially unchanged in 2005 at $3.0 billion, while over the same period, competitors' revenues increased by 16.7% to just under $0.5 billion, or 13.7% of total business revenues.

Table 4.2.9
Local business lines
(thousands)

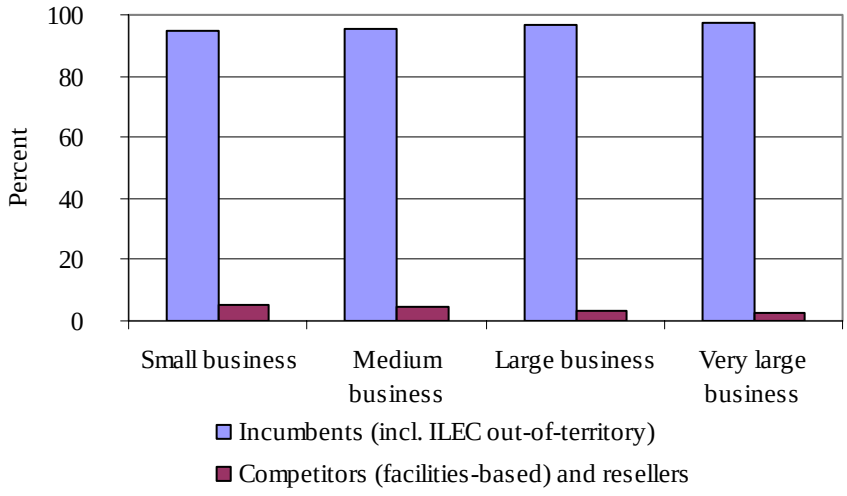
	2001		2002		2003		2004		2005	*Growth* *2004-2005*	*CAGR* *2001-2005*
Incumbents	6,451	#	5,784	#	5,688	#	5,512	#	5,476	*-0.7%*	*-4.0%*
Competitors (ILEC out-of-territory)	n/a		119		146	#	542	#	573	*5.7%*	*n/a*
Competitors (other)	563	#	574	#	570	#	264	#	315	*19.3%*	*-13.5%*
Total	7,013	#	6,476	#	6,404	#	6,318	#	6,364	*0.7%*	*-2.4%*

Source: CRTC data collection
n/a: not available

As shown in Table 4.2.9, local business lines held by the incumbents decreased slightly in 2005 to just under 5.5 million lines, while the number of competitors' business lines increased by 10.2% to 0.9 million lines, or 14.0% of total business lines.

Figure 4.2.3 presents the revenue-share held by incumbents and competitors in the business segment disaggregated by small, medium, large and very large customers. In 2005, the incumbents (including their out-of-territory operations) held the majority of available revenues in each of the four categories.

Figure 4.2.3
Local business revenue distribution by customer size and type of provider
(2005)



Source: CRTC data collection

d) Local wholesale market

The wholesale market segment includes access services and facilities used by competitive service providers for the purposes of interconnecting their respective networks and connecting to their retail customers. Additionally, a service which is resold by a service provider to their end-customer is included within the local wholesale segment. The major components of wholesale services include:

- interconnection, including switching and aggregation, transit and bill-and-keep trunk settlement;
- unbundled network components such as loops used by competitors to extend services over "the last mile" to their customers; and
- PSTN access, such as ISDN, Centrex and basic local service used by resellers and other competitors to provide local service in exchanges where they do not have facilities, or have facilities but are not operating as a CLEC.

Table 4.2.10 provides a breakdown of local wholesale revenues by component, for the 2001 to 2005 period.

Table 4.2.10
Local wholesale revenues by major component
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Interconnection	315	354	287	333	322	*-3.3%*	*0.6%*
Centrex	120	163	134	123	107	*-13.0%*	*-2.8%*
PSTN access	129	146	128	136	123	*-9.8%*	*-1.2%*
Unbundled loops	31	53	61	84	110	*30.8%*	*37.2%*
Basic local	55	84	89	83	114	*37.5%*	*20.0%*
Other user charges	90	93	56	62	53	*-14.9%*	*-12.4%*
Total	740	893	755	822	829	*0.9%*	*2.9%*

Source: CRTC data collection

In 2005, local wholesale revenues increased slightly to $829 million. Substantial increases in unbundled loop and basic local access revenues were partially offset by declines in Centrex, interconnection, PSTN access and other user revenues.

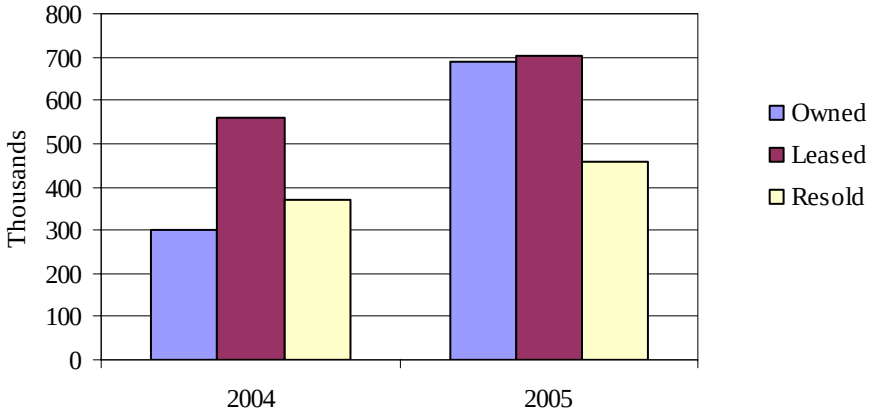
When a competitor cannot reach a retail customer by utilizing self-provisioned facilities, there are two alternatives it can employ:

- leased facilities, such as unbundled loops or loop-equivalent facilities leased from a facilities-based telecommunications service provider, used to connect the retail customer to the competitors' network. As with owned facilities, dial-tone is provided by the competitors' network; or
- resold services, such as Centrex or its equivalents, leased from a LEC and resold to the end-customer without touching the competitors' network.

Figure 4.2.4 illustrates the quantities of competitor retail lines provisioned utilizing either owned (self-provisioned), leased or resold facilities.

In 2005, approximately 75% of the competitor-provided retail lines were provisioned using owned or leased facilities. More significantly, of the 630 thousand retail lines added by the competitors in 2005, owned and leased facilities represented 62% and 23%, respectively, of these incremental lines.

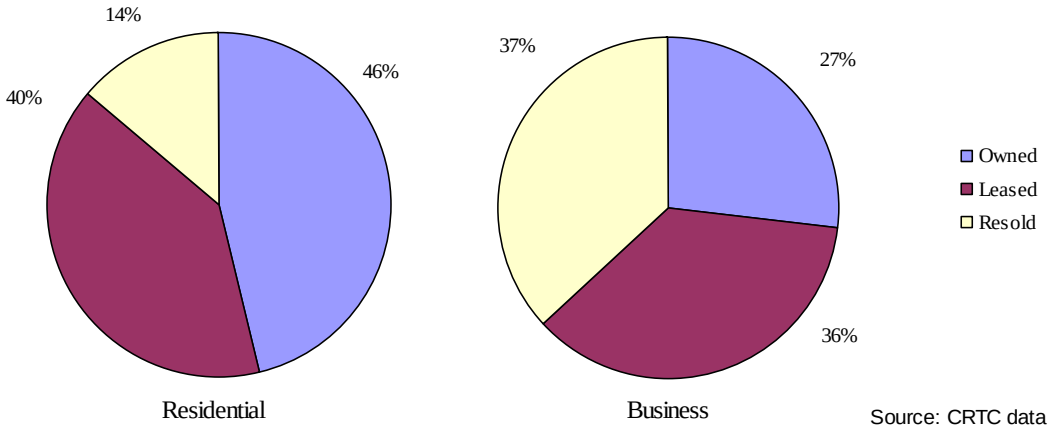
Figure 4.2.4
Competitor local retail lines by type of facility



Source: CRTC data collection

As shown in Figure 4.2.5, within the residential segment, 46% of competitor-provided local residential lines were provisioned via their own facilities, followed by lines provisioned using unbundled loops leased from the incumbents, at 40%. In 2005, revenues realized by the incumbents for the supply of local loops to competitors increased by 30.8% to $110 million, due primarily to growth of competitor-provided local residential service provisioned with leased local loops.

Figure 4.2.5
Competitor local residential and business lines by type of facility (2005)



Source: CRTC data collection

Within the business segment, there is no single dominant means that competitors use to provide service. Collectively, 63% of the competitors' business lines are provided via owned or leased facilities.

In 2005, the wholesale segment showed growth of both revenues and lines. As reported in Table 4.2.11, local wholesale revenues held by the incumbents decreased by 2.0% to $698 million in 2005, while competitors' revenues increased by 18.2% to $130 million, representing 15.7% of local wholesale revenues.

Table 4.2.11
Local wholesale revenues
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents	713	836	617	712	698	*-2.0%*	*-0.5%*
Competitors (ILEC out-of-territory)	n/a	n/a	70	93	104	*11.8%*	n/a
Competitors (other)	27	57	68	17	26	*52.9%*	*-0.9%*
Total	740	893	755	822	828	*0.7%*	*2.8%*

Source: CRTC data collection
n/a: not available

Over the same period, as shown in Table 4.2.12, local wholesale lines held by the incumbents decreased by 2.2% to 444 thousand lines, while the number of competitors' lines more than doubled to 344 thousand lines, representing 43.7% of local wholesale lines.

Table 4.2.12
Local wholesale lines
(thousands)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents	368	376	408	454	444	*-2.2%*	*4.8%*
Competitors (ILEC out-of-territory)	n/a	43	11	129	303	*134.9%*	*n/a*
Competitors (other)	106	102	192	34	41	*20.6%*	*-21.1%*
Total	474	521	611	617	788	*27.7%*	*13.5%*

Source: CRTC data collection
n/a: not available

4.3 Long distance

Highlights

- Long distance revenues continued to decline, decreasing from $5.6 billion in 2004 to $5.1 billion in 2005, an 8.6% decline.
- Long distance minutes continued to grow, increasing from 59.2 billion minutes in 2004 to 65.2 billion in 2005, a 10.1% increase.
- Average revenue per minute (ARPM) continued to drop, from $0.094 in 2004 to $0.078 in 2005, a reduction of 17.0%.
- The incumbents' share of long distance revenues dropped from 67% in 2004 to 64% in 2005, representing a $0.5 billion or 11.5% decline in their revenues.

Sector description

a) Description of services

Retail long distance services encompass wireline voice traffic to locations outside of the local service calling area. Wireline long distance services are sold in a variety of ways such as a standard per-minute charge, a monthly subscription plan, calling cards, or as part of a bundle with other services.

Wholesale long distance refers to services provided under connection arrangements between facilities-based carriers to transit traffic on behalf of other service providers, as well as the sale of wholesale bulk minutes to resellers of long distance services.

b) Markets and observations

Long distance revenues include retail revenues from long distance services sold to residential and business customers,[48] wholesale revenues for long distance traffic sold to other service providers for the purposes of resale, and settlement revenues paid to carriers for the transport of traffic outside a service provider's operating territory. Long distance minutes include both retail and wholesale minutes, but exclude minutes associated with domestic and international settlement revenues.

Table 4.3.1 provides long distance revenues and minutes for the period 2001 to 2005. During this period, long distance revenues declined at annual rates between a low of 2.5% in 2002 and a high of 8.6% in 2003, resulting in an average annual decline of 6.6%. Minutes, however, increased during this period between a low of 1.8% in 2003 and a high of 10.1% in 2005, resulting in an average annual growth rate of 5.3%.

[48] Long distance calls that are made and carried by wireless service providers are included in the wireless section of this report. However, long distance calls associated with calling cards, even if initiated by a wireless subscriber, are part of the wireline long distance sector and are included in this section.

Table 4.3.1
Total long distance revenues and minutes

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2004-2005*
Revenues ($ millions)	6,700	6,534	5,944	5,588	5,109	*-8.6%*	*-6.6%*
Minutes (millions)	52,977	54,835	55,820	59,175	65,175	*10.1%*	*5.3%*

Source: CRTC data collection

The long distance share of total telecommunications revenues dropped from 17% in 2004 to 15% in 2005, while total telecommunications revenues increased by 3.5%.

In 2005, there was increased competition from pre-paid card and dial-around service providers, as well as from incumbents operating outside their traditional territory, cable BDUs and companies offering long distance services via IP-based technologies.

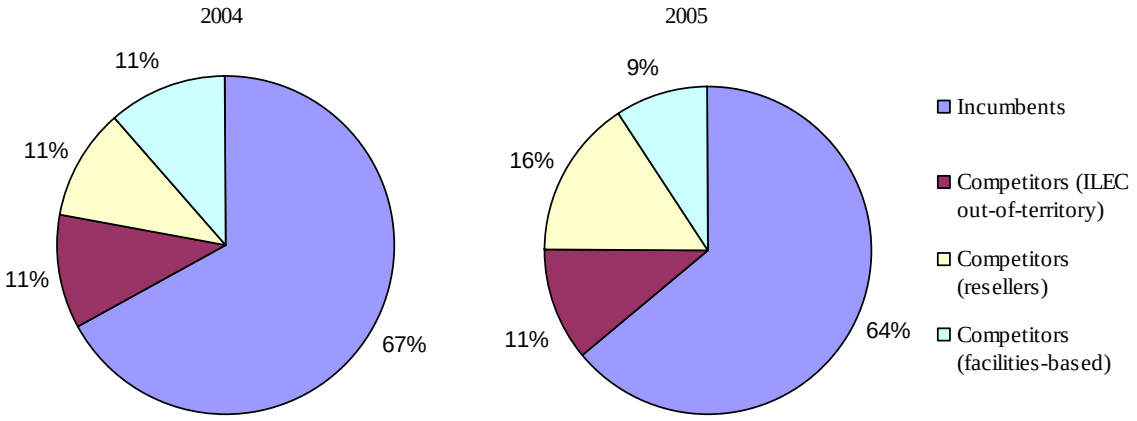
The effects of competition in the long distance market continue to be evident primarily in terms of declining prices and the growing number and variety of long distance plans offered by multiple companies. Long distance customers benefited from lower prices as the ARPM has declined by $0.048 or 38% since 2001.

c) Sector participants

The sector participants primarily include the large ILECs, facilities-based competitive carriers that provide both local and switched long distance services, and a variety of resellers. The majority of the large incumbents also provide long distance service outside their traditional operating territories either directly or through affiliates. Incumbents, when providing services within their traditional operating territories, are referred to as incumbents and when providing services outside of their usual territories, are referred to as competitors (ILEC out-of-territory). The remaining competitors generally consist of (a) facilities-based service providers which include cable BDUs and (b) resellers that purchase long distance minutes from facilities-based carriers on a wholesale basis.

As displayed in Figure 4.3.1, the incumbents accounted for 64% of the revenues in 2005, followed by resellers at 16% and the facilities-based service providers at 9%. Both the incumbents and the facilities-based competitors lost approximately 3% revenue market share in 2005 while resellers gained 5%. The incumbents' 3% market share loss represents approximately $0.5 billion.

Figure 4.3.1
Total long distance revenue market share by type of provider



Source: CRTC data collection

d) Regulatory framework

Competition in the long distance market began in 1990 with the resale of certain switched long distance services (Decision 90-3).[49] In 1992, the market was further opened to include facilities-based carriers (Decision 92-12).[50] The Commission has forborne from regulating the long distance market through a series of decisions that addressed various service providers and market segments (Decision 94-19, Decision 95-19,[51] Decision 97-10,[52] Decision 97-19,[53] Order 99-1202[54]). Pursuant to Decision 97-19, the Commission forbore from regulating the incumbents' long distance service rates, with the exception of Northwestel, and imposed certain conditions on the incumbents, most notably price ceilings applying to each basic long distance rate schedule.

While the Commission has forborne from regulating the long distance market, it continues to regulate access tandem and direct connect rates, which determine the competitive long distance carrier's cost to interconnect with a LEC's facilities. Access tandem and direct connect rates were updated in 2006, resulting in modifications to the rates paid by long distance service providers to the ILECs for originating and terminating long distance traffic.[55]

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49 *Resale and sharing of private line services*, Telecom Decision CRTC 90-3, 1 March 1990.

50 *Competition in the provision of public long distance voice telephone services and related resale and sharing issues*, Telecom Decision CRTC 92-12, 12 June 1992.

51 *Forbearance – Services provided by non-dominant Canadian carriers*, Telecom Decision CRTC 95-19, 8 September 1995.

52 *Teleglobe Canada Inc. – Resale and sharing of international private line services*, Telecom Decision CRTC 97-10, 5 May 1997.

53 *Forbearance – Regulation of toll services provided by incumbent telephone companies*, Telecom Decision CRTC 97-19, 18 December 1997.

54 *Forbearance for agreements between domestic and foreign common carriers*, Telecom Order CRTC 99-1202, 22 December 1999.

55 *Aliant Telecom, Bell Canada, MTS Allstream, SaskTel and TCI – Approval of rates on a final basis for Access Tandem service*, Telecom Decision CRTC 2006-22, 27 April 2006, and *Aliant Telecom, Bell Canada, MTS Allstream, SaskTel and TCI – Approval of rates on a final basis for Direct Connection service*, Telecom Decision CRTC 2006-23, 27 April 2006.

Market segments

Table 4.3.2 presents a summary of the residential, business and wholesale long distance revenues for the period 2001 to 2005.

Table 4.3.2
Long distance revenues by market segment
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Retail							
Residential	3,007	3,038	3,013	2,857	2,681	*-6.2%*	*-2.8%*
Business	2,081	1,970	1,777	1,790	1,570	*-12.3%*	*-6.8%*
Total retail	5,088	5,008	4,790	4,647	4,251	*-8.5%*	*-4.4%*
Wholesale	1,612	1,526	1,154	941	858	*-8.8%*	*-14.6%*
Total	6,700	6,534	5,944	5,588	5,109	*-8.6%*	*-6.6%*

Source: CRTC data collection

In 2005, long distance revenues declined by 8.6%, to $5.1 billion. The largest reduction was within the business market where revenues declined by 12.3%.

Retail long distance

Retail long distance accounted for 83% of total long distance revenues in 2005, unchanged from 2004. Retail revenues continued to decline, decreasing from $4.6 billion in 2004 to $4.3 billion in 2005, an 8.5% reduction, as:

- residential revenues decreased by 6.2% in 2005 to $2.7 billion; and
- business revenues decreased by 12.3% to $1.6 billion.

Figure 4.3.2 shows that retail ARPM generally declined in 2005:

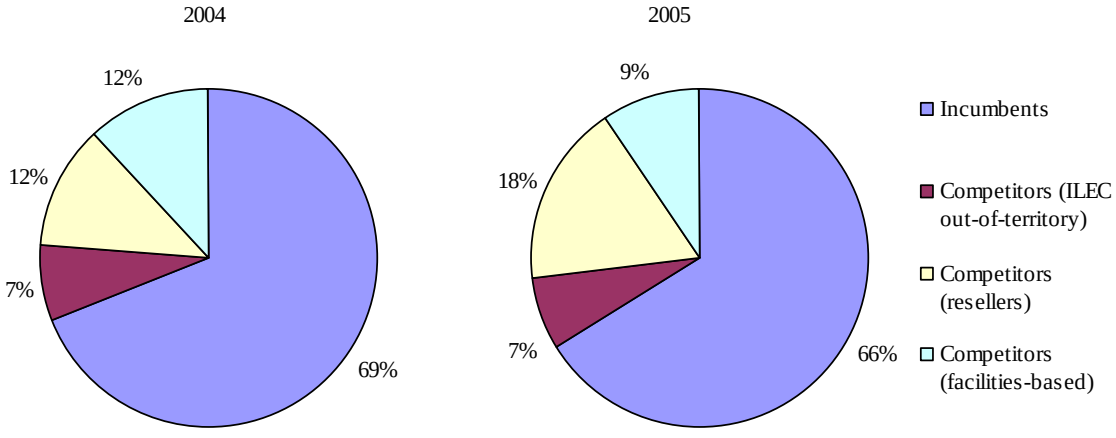
- in the residential market, the incumbents' and competitors' (resellers and facilities-based) ARPM declined by 8% and 29% respectively, with an increase of 12% for the ILEC out-of-territory; and
- business ARPM, already significantly below the residential ARPM, declined by about 14% for all competitors and the incumbents.

Figure 4.3.2
Residential and business ARPM

Source: CRTC data collection

Figure 4.3.3 depicts retail revenue market share in 2004 and 2005. The incumbents' retail long distance revenue market share declined from 69% in 2004 to 66% in 2005. Resellers, however, increased their revenue market share from 12% to 18%, while the facilities-based competitors lost 3% from 12% to 9%. The incumbents' 3% market share loss represents $406 million or 12.7% of their revenues.

Figure 4.3.3
Retail long distance revenue market share[56]
by type of provider



Source: CRTC data collection

[56] The cable BDUs' share of long distance revenues was negligible in 2005.

Table 4.3.3[57] provides the major incumbent telephone companies' retail long distance revenue market shares for the 2003 to 2005 period.

Table 4.3.3
Incumbent telephone companies' retail long distance revenue market share by region

Region	Percent		
	2003	2004	2005
BC, Alberta	72%	69%	70%
Saskatchewan	82%	84%	84%
Manitoba	76%	84%	86%
Ontario, Quebec	66%	65%	62%
Atlantic	75%	78%	77%

Source: CRTC data collection

Retail long distance – Residential market

Tables 4.3.4 and 4.3.5 display residential long distance revenues and minutes respectively, for the 2003 to 2005 period. Residential long distance revenues in 2005 were $2.7 billion, decreasing 6.2% or $176 million from the previous year. Incumbent revenues decreased 9.9% or $213 million in 2005, while revenues from the facilities-based competitors and resellers increased by 4.5% or $32 million.

Table 4.3.4
Residential long distance revenues
($ millions)

	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	2,300	2,135	1,922	*-9.9%*	*-8.6%*
Competitors (ILEC out-of-territory)	1	2	6	*187.1%*	*135.5%*
Competitors (resellers and facilities-based)	712	721	753	*4.5%*	*2.9%*
Total	3,012	2,857	2,681	*-6.2%*	*-5.7%*

Source: CRTC data collection

Table 4.3.5
Residential long distance minutes
(millions)

	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	16,295	15,383	15,100	*-1.8%*	*-3.7%*
Competitors (ILEC out-of-territory)	5	26	68	*156.1%*	*268.0%*
Competitors (resellers and facilities-based)	6,061	7,592	11,127	*46.6%*	*35.5%*
Total	22,361	23,001	26,295	*14.3%*	*8.4%*

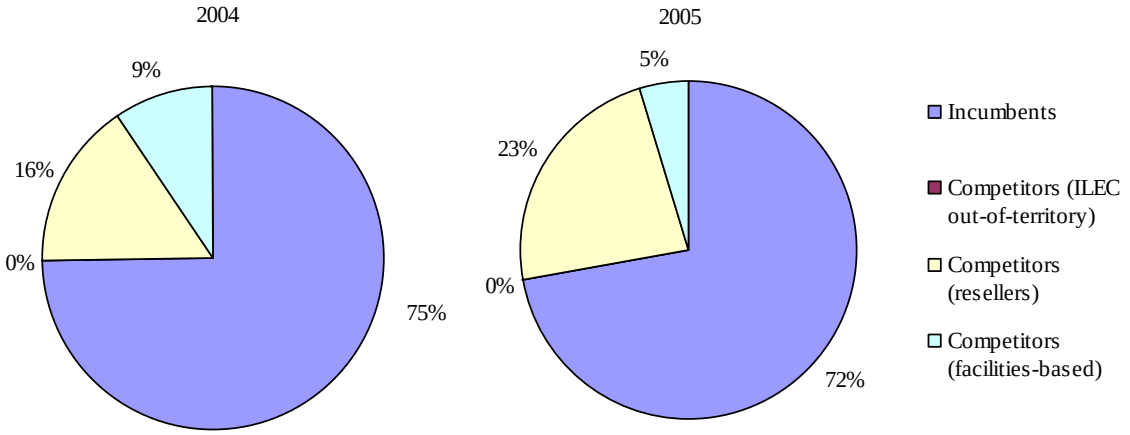
Source: CRTC data collection

[57] The incumbents' market share data in Table 4.3.3 exclude their out-of-territory revenue market share.

In 2005, residential long distance minutes increased by 14.3% to 26.3 billion minutes. The increase in residential long distance minutes was due to growth in reseller and facilities-based traffic.

The residential long distance revenue market share is shown in Figure 4.3.4. Both the incumbents and facilities-based competitors lost revenue market share. The incumbents' revenue market share declined from 75% in 2004 to 72% in 2005, while the facilities-based competitors declined from 9% to 5%. Resellers, however, increased their revenue market share from 16% in 2004 to 23% in 2005.

Figure 4.3.4
Residential long distance revenue market share
by type of provider



Source: CRTC data collection

Retail long distance – Business market

Tables 4.3.6 and 4.3.7 display the business long distance revenues and minutes respectively, for the 2003 to 2005 period. In 2005, business long distance revenues declined by 12.3% to $1.6 billion, while minutes increased by 3.6% to 21.8 billion, resulting in a reduction in the business ARPM from $0.085 in 2004 to $0.072 in 2005.

Table 4.3.6
Business long distance revenues
($ millions)

	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	977	1,067	873	*-18.1%*	*-5.5%*
Competitors (ILEC out-of-territory)	62	332	295	*-11.3%*	*118.1%*
Competitors (resellers and facilities-based)	738	390	402	*3.0%*	*-26.2%*
Total	1,777	1,790	1,570	*-12.3%*	*-6.0%*

Source: CRTC data collection

Table 4.3.7
Business long distance minutes
(millions)

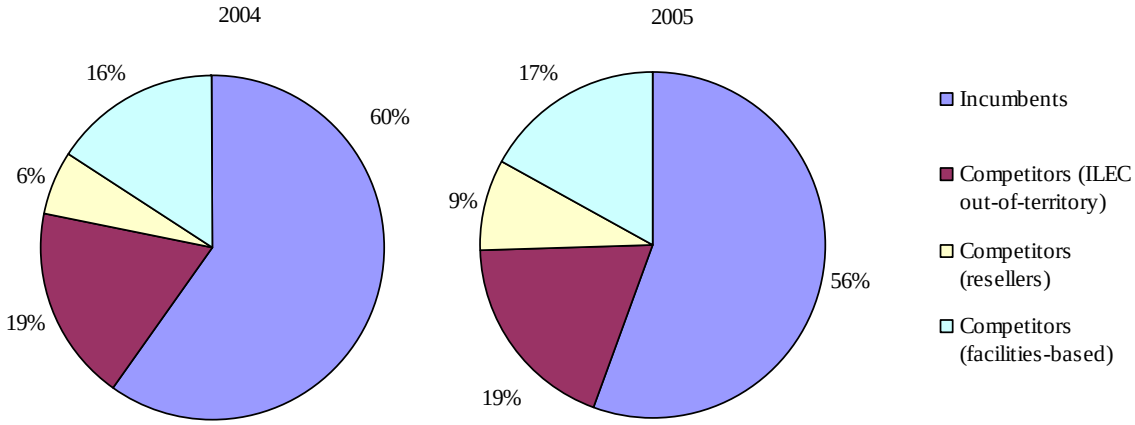
	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	11,247	10,585	10,208	*-3.6%*	*-4.7%*
Competitors (ILEC out-of-territory)	951	5,584	5,674	*1.6%*	*144.3%*
Competitors (resellers and facilities-based)	10,334	4,882	5,918	*21.2%*	*-24.3%*
Total	22,532	21,051	21,800	*3.6%*	*-1.6%*

Source: CRTC data collection

As displayed in Table 4.3.6, the incumbents' business long distance revenues declined $194 million or 18.1% in 2005, while the competitors' revenues declined $26 million or 3.6%. The incumbents' minutes decreased 377 million or 3.6% while the competitors' minutes increased 1,125 million or 10.8%.

The incumbents have generally focused their out-of-territory activities on the business market rather than the residential market. In the business market, they captured approximately 19% of the business revenues compared to a negligible share of the residential revenues. Due to their declining revenues, the incumbents' market share decreased from 60% in 2004 to 56% in 2005, as shown in Figure 4.3.5.

Figure 4.3.5
Business long distance revenue market share
by type of provider

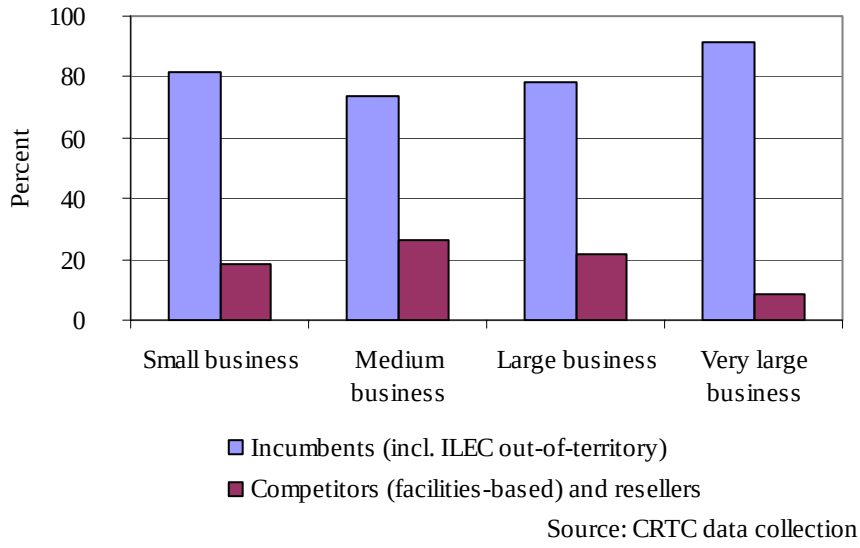


Source: CRTC data collection

Resellers had a greater share of residential long distance revenues (23%) than of business long distance revenues (9%). This may be attributed to the lower margins inherent in a reseller's operations which limit its ability to compete on price in the business market.

Competitors (facilities-based) and resellers had approximately 20% of the small, medium and large long distance business markets and 10% of the very large business market, as displayed in Figure 4.3.6. The incumbents, including their out-of-territory operations, had approximately 75% or more of the long distance revenues in each of these segments. Resellers generally had a greater share of the small and medium customers than of the large and very large customers.

Figure 4.3.6[58]
Business long distance revenue distribution by customer size and type of provider (2005)



Source: CRTC data collection

Wholesale long distance

Table 4.3.8 displays wholesale long distance revenues for the 2003 to 2005 period. In 2005, the incumbents' wholesale long distance revenues decreased by 11.5%, accounting for the largest portion of the 8.8% wholesale decline. The decline in wholesale long distance revenues may be attributed to consolidation activities in the industry, as well as to the newer technologies such as VoIP that have a downward pressure on wholesale prices.

Table 4.3.8
Wholesale long distance revenues ($ millions)

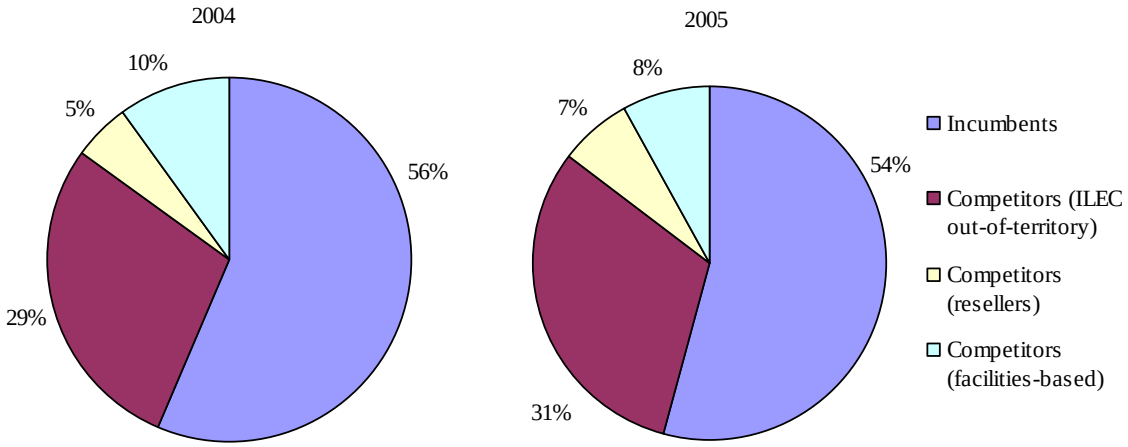
	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	686	530	469	*-11.5%*	*-17.3%*
Competitors (ILEC out-of-territory)	130	270	270	*0.0%*	*44.2%*
Competitors (resellers and facilities-based)	337	141	118	*-15.9%*	*-40.8%*
Total	1,154	941	858	*-8.8%*	*-138.0%*

Source: CRTC data collection

[58] Only long distance service providers with annual revenues in excess of $5 million were required to submit long distance revenue details by customer size.

Figure 4.3.7 displays the wholesale revenue market share for 2004 and 2005 by type of provider. The incumbents' share of long distance wholesale revenues decreased from 56% in 2004 to 54% in 2005.

Figure 4.3.7
Wholesale long distance revenue market share
by type of provider



Source: CRTC data collection

4.4 Internet service and broadband availability

Highlights

- Internet revenues increased 8.8% from $4.2 billion in 2004 to $4.5 billion in 2005, making it one of the fastest growing segments of the Canadian telecommunications services industry.
- The number of households with Internet access subscriptions reached 8.0 million in 2005, representing 64% of all Canadian households. The number of households with high-speed Internet access reached 6.4 million households or 51% of all Canadian households, up from 43% in the previous year.
- Dial-up subscriptions continued to decrease, declining 23% in 2005. As a percent of total subscriptions, dial-up subscriptions declined from 27% in 2004 to 20% in 2005.
- Approximately 98% of households in urban areas and 74% of households in rural areas were within the broadband footprint in 2005.

Sector description

a) Description of services

Internet-related telecommunications services can be divided into three broad market segments: Internet access, Internet transport and Internet applications.

Internet access is the provision of an IP connection to an end-user which allows the end-user to exchange applications traffic with Internet hosts and other end-users. Internet access service consists of three major components:

- A data connection between a modem at the end-user location (such as a residential dwelling) and the ISP;

- ISP facilities, which include:

    - Routers, to switch traffic between ISP end-users and the Internet at large;
    - Servers, to provide ISP services provided in-house, such as e-mail; and
    - Network management elements; and

- A connection from the ISP to the Internet.

Internet access services are provisioned at a variety of speeds. Low-speed, or narrowband access services, operate at speeds of up to 64 kilobits per second (kbps), and are typically provided over dial-up access lines. High-speed access services, including wideband (up to 1.5 megabits per second (mbps)) and broadband (faster than 1.5 mbps), are for the most part delivered over DSL, coaxial cable and, particularly to businesses, fibre optic cables. Satellite and terrestrial wireless technologies are also used to provide high-speed access services.

Internet transport service is the provision of Internet connectivity to ISPs, and some larger business customers. Internet transport capacity is provided over Internet backbone facilities that carry aggregated traffic across domestic and international intercity links between Internet traffic switches or routers. In addition, it provides partial control over the movement of the customer's Internet traffic. In some cases, peering arrangements between Internet backbone service providers substitute for the outright purchase of Internet transport by one ISP from another. Consequently, separate accounting of all Internet transport services is not available.

Internet applications include a growing number of services which piggyback on the Internet connectivity services. They include e-mail, Web surfing and hosting, and instant messaging, among others. Typically, many of the Internet application services are bundled together with Internet access services. However, ISPs and other telecommunications companies participate in emerging stand-alone business Internet applications markets which include services such as premium Web hosting, Internet data centres and off-site data storage, security and firewall services, among others.

b) Markets and observations for 2005

Internet-related telecommunications revenues in Canada were $4.5 billion in 2005, representing an increase of 8.8% over the previous year. Based on Table 4.4.1, retail Internet access services accounted for approximately 80% of the total Internet revenues in 2005. The annual growth, however, in retail access revenues has been declining from 55% in 2001 to 9.4% in 2005.

Table 4.4.1
Internet revenues[59]
($ millions)

	2001	2002	2003		2004		2005	*Growth 2004-2005*	*CAGR 2001-2005*
Retail Internet access services	2,000	2,537	3,037	#	3,340	#	3,652	*9.4%*	*16.2%*
Internet transport, applications and other	660	748	651	#	825	#	878	*6.4%*	*7.4%*
Total Internet revenues	2,660	3,285	3,689		4,165		4,530	*8.8%*	*14.2%*

Source: CRTC data collection

c) Sector participants

There are four principal groups of participants providing retail Internet access and transport services in Canada:

- incumbent local exchange carriers (incumbents) who own the vast majority of the copper twisted pair access links to homes and businesses: these service providers provide Internet access mainly by dial-up, DSL, fibre and/or satellite, and more recently, in some cases, by fixed wireless.

[59] The Internet transport, applications and other related revenues reported in this Table exclude peer-to-peer agreements where there is no financial compensation. In these arrangements, the carriers exchange similar volumes of traffic. They simply reflect the revenues reported by telecommunications service providers participating in the Commission's data collection process. Consequently, this section focuses primarily on retail Internet access, which makes up the majority of the collected data on Internet-related revenues. The Internet transport, applications and other line includes wholesale Internet access services, and retail and wholesale Internet transport, applications, equipment and ancillary services.

- cable BDUs who own the coaxial-based television distribution networks serving homes and, to a lesser extent, businesses: these companies mainly provide access by cable modem or by fibre, and more recently, in some cases, by fixed wireless.

- competitive facilities-based telecommunications service providers who provide service via dial-up, DSL, fibre and/or satellite, as well as ISPs who utilize license exempt spectrum in rural areas, and municipal and utility company-affiliated service providers.

- non facilities-based ISPs such as AOL Canada, Cybersurf Inc., Inter.net Canada and Uniserve focus primarily on the provision of Internet access services. They primarily use wholesale DSL data services of the incumbents, although there was limited use of third party Internet access (TPIA) provided by cable BDUs.

In addition, satellite service providers offer wholesale satellite services to ISPs in order to serve their end-users. For example, in 2004, Telesat Canada launched the Anik F2 satellite, and in 2005 was providing wholesale satellite services to ISPs for purposes of providing end-user access to the Internet. In addition to Internet access services, some facilities-based service providers, including the incumbents, cable BDUs, and competitors, also provide Internet transport services.

Municipal and hydro utility service providers supply Internet access, and have also started to provide WiFi-based services. For example, the city of Fredericton, New Brunswick has been providing WiFi Internet access throughout the downtown area of Fredericton.

Early in 2006, Rogers Communications Inc. and Bell Canada introduced a portable Internet offering in several Canadian cities that utilises the wireless spectrum of Inukshuk Internet and non-line-of-sight technology. Although the service is not mobile, it is portable.

ISPs are categorized based on the description of service providers in section 3. The telephone companies' activities within their traditional territories are categorized as incumbent and their out-of-territory activities are categorized as competitors (ILEC out-of-territory). Although cable BDUs are incumbents with respect to their cable distribution activities, they are categorized as competitors (cable BDUs). The remaining service providers are referred to as competitors (other).

d) Regulatory framework

While both low-speed and high-speed retail Internet access services have been forborne from regulation under the Act, the Commission regulates the provision of wholesale Internet access services. In the case of the incumbents, the underlying facilities and services required by service providers are subject to price regulation and generally fall within the Competitor Services basket of services under the current price cap regime. Cable BDUs have also been required to provide TPIA to their underlying facilities.

In 1999, in its consideration of an appropriate framework for new media,[60] the Commission found that while some Internet applications fell under the definition of "program" and "broadcasting" under the *Broadcasting Act*, regulation was not necessary to achieve the objectives under that act.

[60] *New Media*, Telecom Public Notice CRTC 99-14 and Broadcasting Public Notice CRTC 1999-84, 17 May 1999.

Regulatory developments in the past year

To foster competition in the retail Internet access services market, in 2005, the Commission mandated the creation of certain tariff wholesale services (also referred to as Competitor Services) that are required by ISPs to provide high-speed Internet access. These include wholesale services provided by Bell Canada,[61] Cablevision du Nord de Québec inc.,[62] Télébec,[63] TCC,[64] MTS Allstream,[65] Shaw Cablesystems Ltd.,[66] and SaskTel.[67]

In Order 2005-144,[68] the Commission granted interim approval to Bell Canada's application to remove from its General Tariff on Gateway Access Service (GAS) and High-Speed Access (HSA), the requirement that an end-customer must subscribe to a primary exchange service (PES). This configuration, often termed "naked DSL", permits an ISP to provide high-speed Internet service utilising DSL facilities without the need for the end-user to subscribe to local telephone service over the same access line. In Order 2005-415,[69] the Commission ordered Bell Canada to reduce the unbundled loop rate by 50% for lines to be used in conjunction with wholesale DSL service in this configuration, thereby reducing costs to ISPs.

In 2002, in order to avoid a negative impact on local competition, the Commission required each ILEC that was subject to the price cap regime to create a deferral account.[70] In Decision 2006-9,[71] the Commission established the guidelines for, among other things, the disposition of funds remaining in the deferral accounts. These funds were to be made available for, among other things,

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61 *Gateway Access Service and High Speed Access Service*, Telecom Order CRTC 2005-62, 17 February 2005.

62 Telecom Order CRTC 2005-93, 8 March 2005.

63 Telecom Order CRTC 2005-224, 10 June 2005.

64 *Wide Area Network Asymmetric Digital Subscriber Line Service*, Telecom Order CRTC 2005-313, 1 September 2005, Telecom Order CRTC 2006-2, 4 January 2006, and *Wholesale Internet ADSL Service*, Telecom Order CRTC 2006-17, 20 January 2006.

65 Telecom Order CRTC 2005-406, 12 December 2005.

66 *Third Party Internet Access service*, Telecom Order CRTC 2006-55, 20 March 2006.

67 *Aggregated Asymmetric Digital Subscriber Line (ADSL) Service, and Ethernet Access Services and Agreement*, Telecom Order CRTC 2006-64, 27 March 2006.

68 *Gateway Access Service*, Telecom Order CRTC 2005-144, 15 April 2005.

69 *Gateway Access Service over dry loops*, Telecom Order CRTC 2005-415, 22 December 2005.

70 The deferral accounts were created by *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002, and *Implementation of price regulation for Télébec and TELUS Québec*, Telecom Decision CRTC 2002-43, 31 July 2002. The ILECs were directed to place into those accounts amounts equal to the revenue reductions that would otherwise have resulted from an application of the price cap formula.

71 *Disposition of funds in the deferral accounts*, Telecom Decision CRTC 2006-9, 16 February 2006 (Decision 2006-9). On 20 March 2006, two applications for leave to appeal Decision 2006-9 were filed with the Federal Court of Appeal by Bell Canada and by the Consumers Association of Canada and the National Anti-poverty Organization. The Consumers Association of Canada and the National Anti-poverty Organization are also seeking a stay of the decision pending the outcome of their appeal. On 16 May 2006, a petition to the Governor in Council to reconsider Decision 2006-9 was filed by Barrett Xplore Inc. On 8 June 2006, Barrett Xplore Inc. also filed with the Commission an application seeking a review and variance of Decision 2006-9 as well as a stay of the decision.

the expansion of broadband service in rural and remote communities. Pursuant to Decision 2006-9, the ILECs are to propose a list of communities for the expansion of broadband service which are unlikely to receive such services from any service provider in the near future.

Market segments

Table 4.4.2 provides a market segment breakdown of revenues for the retail Internet access service market. Since 2002, residential Internet access revenues have accounted for over 75% of the retail market.

The annual growth rate for residential Internet access revenues has consistently declined since 2001, from a 50% growth rate to 11% in 2005. Similarly, the annual growth rate for business Internet access revenues has also consistently declined but at a faster pace, declining from 69% in 2001 to 6% in 2005.

Nevertheless, the average annual growth rate for both segments combined was 16% over the 2001 to 2005 period, making the retail Internet access service market one of the fastest growing segments in the telecommunications industry.

Table 4.4.2
Residential and business Internet access service revenues
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Residential	1,461.9	1,943.0	2,279.5	2,523.6	2,790.5	*10.6%*	*17.5%*
Percent of total	*73.1%*	*76.6%*	*75.0%*	*75.6%*	*76.4%*		
Business	537.6	593.8	757.9 #	816.2 #	861.6	*5.6%*	*12.5%*
Percent of total	*26.9%*	*23.4%*	*25.0%*	*24.4%*	*23.6%*		
Total revenues	1,999.5	2,536.8	3,037.4 #	3,339.8 #	3,652.1	*9.4%*	*16.3%*

Source: CRTC data collection

Table 4.4.3 provides a breakdown of retail Internet access revenues by type of provider. These figures show that the incumbents and the cable BDUs are the major players with revenue market shares of 43% and 42%, respectively, in 2005, up from 43% and 39%, respectively in 2004. The market share of the competitors (other) declined from 15% in 2004 to 12% in 2005. This decline can be attributed to the consolidation within the industry and to the decline in dial-up subscriptions discussed below.

Table 4.4.3
Internet access service revenues by type of provider
($ millions)

	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	1,219.0	1,432.4	1,554.0	*8.5%*	*12.9%*
Market share	*40.1%*	*42.9%*	*42.6%*		
Competitors					
Cable BDUs	1,108.2	1,284.6	1,520.1	*18.3%*	*17.1%*
Market share	*36.5%*	*38.5%*	*41.6%*		
ILECs out-of-territory	35.1	114.5 #	134.9	*17.8%*	*96.1%*
Market share	*1.2%*	*3.4%*	*3.7%*		
Other	675.2 #	508.3 #	443.1	*-12.8%*	*-19.0%*
Market share	*22.2%*	*15.2%*	*12.1%*		
Competitors Total	1,818.5 #	1,907.4 #	2,098.1	*10.0%*	*7.4%*
Market share	*59.9%*	*57.1%*	*57.4%*		
Total	3,037.4 #	3,339.8 #	3,652.1	*9.4%*	*9.7%*

Source: CRTC data collection

As shown in Table 4.4.4, the four largest Internet access service providers[72] and their affiliates continue to, not only dominate the market but steadily increase their market share of the retail Internet access market, growing from 44% in 2001 to 63% in 2005.

Table 4.4.4
Top four retail Internet companies' revenues
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Four largest companies	875.3	1,289.9	1,641.0	1,970.6 #	2,312.5	*17.4%*	*27.5%*
Market share	*43.8%*	*50.8%*	*54.0%*	*59.0%*	*63.3%*		
Others	1,124.2	1,246.9	1,396.4 #	1,369.3 #	1,339.6	*-2.2%*	*4.5%*
Market share	*56.2%*	*49.2%*	*46.0%*	*41.0%*	*36.7%*		
Total	1,999.5	2,536.8	3,037.4 #	3,339.8 #	3,652.1	*9.4%*	*16.3%*

Source: CRTC data collection

a) Residential Internet access market

Table 4.4.5 illustrates residential Internet access revenues by type of provider for the period 2001 to 2005. Incumbents have minimal out-of-territory operations with respect to the residential Internet access market. As shown in Table 4.4.5, competitors (other) have been losing market share to the incumbents and cable BDUs. As shown in Figure 4.4.1, the incumbents and the cable BDUs had approximately 91% of the residential Internet access revenues in 2005.

[72] The four largest companies are Bell Canada, TCC, RWI and Shaw.

Table 4.4.5
Residential Internet access revenues by type of provider
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents	551.5	780.0	892.0	1,041.8	1,158.4	*11.2%*	*20.4%*
Market share	*37.7%*	*40.1%*	*39.1%*	*41.3%*	*41.5%*		
Competitors							
Cable BDUs	570.8	846.2	1,049.3	1,218.5	1,392.7	*14.3%*	*25.0%*
Market share	*39.0%*	*43.6%*	*46.0%*	*48.3%*	*49.9%*		
ILECs out-of-territory	-	-	-	9.0	10.1	*12.7%*	
Market share				*0.4%*	*0.4%*		
Other	339.6	316.9	338.2	254.3	229.2	*-9.9%*	*-9.4%*
Market share	*23.2%*	*16.3%*	*14.8%*	*10.1%*	*8.2%*		
Competitors Total	910.4	1,163.0	1,387.5	1,481.8	1,632.1	*10.1%*	*15.7%*
Market share	*62.3%*	*59.9%*	*60.9%*	*58.7%*	*58.5%*		
Total	1,461.9	1,943.0	2,279.5	2,523.6	2,790.5	*10.6%*	*17.5%*

Source: CRTC data collection

The decline in the competitors' (other) residential market share is largely explained by the fact that these competitors have a very small share of the growing residential high-speed access market as shown in Table 4.4.9. Table 4.4.9 indicates that over the 2001 to 2005 period, the competitors (other) had between 1.2% and 4.4% of the high-speed Internet subscribers. When compared to their dial-up subscriptions, the competitors (other) had 2.5 times as many dial-up subscribers as high-speed subscribers.

b) Business Internet access market

As reflected in Table 4.4.6, competitors' (other) market share declined in the business segment of the retail Internet access market from 31% in 2004 to 25% in 2005. Although the competitors (other) had the biggest share of the business Internet segment in terms of revenues after the incumbents who had 48%, their market share has been declining annually. The competitors (ILEC out-of-territory) had approximately 15% of these revenues in 2005. Unlike the residential Internet access market, cable BDUs had 15% of the business Internet access revenues versus 50% of the residential Internet access revenues.

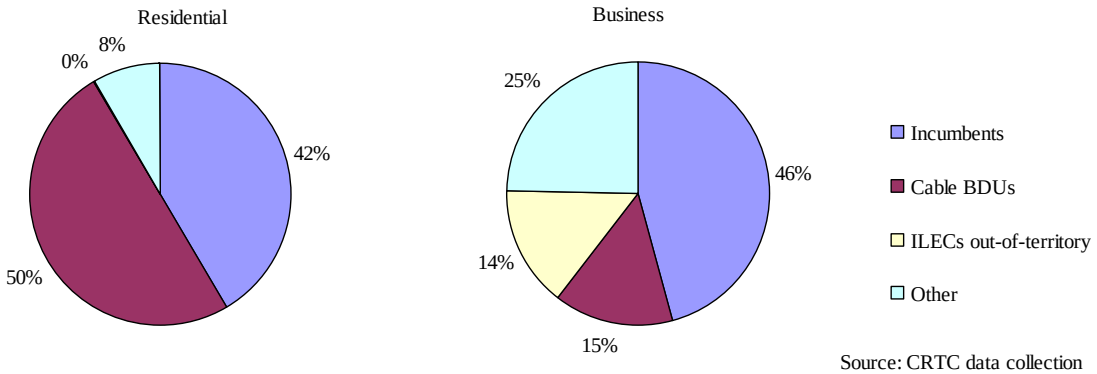
Table 4.4.6
Business Internet access revenues by type of provider
($ millions)

	2003	2004	2005	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents	327.0	390.6	395.6	*1.3%*	*10.0%*
Market share	*43.1%*	*47.9%*	*45.9%*		
Competitors					
Cable BDUs	58.9	66.1	127.3	*92.7%*	*47.0%*
Market share	*7.8%*	*8.1%*	*14.8%*		
ILECs out-of-territory	35.1	105.5 #	124.7	*18.3%*	*88.6%*
Market share	*4.6%*	*12.9%*	*14.5%*		
Other	337.0 #	254.0 #	213.9	*-15.8%*	*-20.3%*
Market share	*44.5%*	*31.1%*	*24.8%*		
Competitors Total	431.0 #	425.6 #	466.0	*9.5%*	*4.0%*
Market share	*56.9%*	*52.1%*	*54.1%*		
Total	757.9 #	816.2 #	861.6	*5.6%*	*6.6%*

Source: CRTC data collection

Figure 4.4.1 shows the Internet access revenue market share for the residential and business segments by type of provider in 2005. It should be noted that competitors (other) and competitors (ILEC out of-territory) have a far larger share of the business Internet revenues than of the residential Internet revenues. Conversely, the cable BDUs have a far larger share of the residential Internet access revenues than of the business Internet access revenues.

Figure 4.4.1
Residential and business Internet access revenues market share
by type of provider
(2005)



Source: CRTC data collection

Types and sources of facilities and services used by competitors

Tables 4.4.7 and 4.4.8 show the residential and business Internet access revenues by access technology for the 2003 to 2005 period. During this period, there continues to be a shift from dial-up facilities in both the residential and business Internet access markets to high-speed Internet facilities utilizing both DSL and cable modem.

Competitive ISPs rely predominantly on incumbent facilities and services and, to a much lesser extent, on cable company TPIA services to provide Internet connectivity to end-users. Competitive ISPs also rely on other telecommunications facilities, such as satellite, for Internet access and transport facilities.

Table 4.4.7
Residential Internet access revenues and market share by access technology

	2003		2004		2005			
	Revenues ($M)	Share*	Revenues ($M)	Share*	Revenues ($M)	Share*	*Growth 2004-2005*	*CAGR 2003-2005*
Incumbents								
Dial-up	249	44.4%	228	52.7%	192	53.2%	*-15.8%*	*-12.1%*
High-speed	643	37.4%	813	38.9%	966	39.8%	*18.8%*	*22.6%*
Total	892	39.1%	1,041	41.3%	1,158	41.5%	*11.2%*	*14.0%*
Competitors								
Cable BDUs								
Dial-up	10	1.7%	6	1.4%	13	3.5%	*107.7%*	*14.4%*
High-speed	1,040	60.5%	1,212	58.0%	1,380	56.8%	*13.8%*	*15.2%*
Total	1,050	46.0%	1,218	48.3%	1,393	49.9%	*14.3%*	*15.2%*
ILECs out-of-territory								
Dial-up	0	0.0%	9	2.1%	10	2.8%	*12.0%*	
High-speed	0	0.0%	0	0.0%	0	0.0%	*0.0%*	
Total	0	0.0%	9	0.4%	10	0.4%	*12.7%*	
Other								
Dial-up	302	53.9%	190	43.8%	147	40.5%	*-22.7%*	*-30.4%*
High-speed	36	2.1%	65	3.1%	83	3.4%	*27.7%*	*51.9%*
Total	338	14.8%	255	10.1%	230	8.2%	*-9.9%*	*-17.7%*
Competitors Total								
Dial-up	312	55.6%	205	47.3%	169	46.8%	*-17.3%*	*-26.3%*
High-speed	1,075	62.6%	1,277	61.1%	1,463	60.2%	*14.5%*	*16.6%*
Total	1,387	60.9%	1,482	58.7%	1,632	58.5%	*10.1%*	*8.5%*
Total								
Dial-up	561	24.6%	433	17.2%	362	13.0%	*-16.5%*	*-19.7%*
High-speed	1,719	75.4%	2,090	82.8%	2,429	87.0%	*16.2%*	*18.9%*
Total	2,280		2,523		2,791		*10.6%*	*10.6%*

Source: CRTC data collection

Notes: (a) Access mode share shows access mode's share of total revenues in same category.
(b) Access mode share for residential dial-up, for example, shows residential dial-up's share of total residential revenues.
(c) High-speed includes the remaining technologies, including cable modem, DSL and fixed wireless.

Table 4.4.8
Business Internet access revenues and market share by access technology

		Revenues ($ millions)					
		Dial-up	DSL	Cable	Fibre	Other	Total
2003	Incumbents	56	170	0	93	7	327
	Competitors						
	Cable BDUs	0	0	44	15	0	59
	ILEC out-of-territory	20	6	0	9	0	35
	Other	45	111	0	138 #	44	337 #
	Competitors Total	65	117	44	161 #	44	431 #
	Total	121	288	44	254 #	51	758 #
	Technology mode percent of total	*16%*	*38%*	*6%*	*33%*	*7%*	*100%*
2004	Incumbents	55	211	1	124	1	391
	Competitors						
	Cable BDUs	1	1	57	6	1	66
	ILEC out-of-territory	7	18	0	54 #	26 #	105 #
	Other	64	54	0	99 #	37 #	254 #
	Competitors Total	71	73	57	159 #	64 #	426 #
	Total	126	284	58	283 #	65 #	816 #
	Technology mode percent of total	*15%*	*35%*	*7%*	*35%*	*8%*	*100%*
2005	Incumbents	43	237	2	101	13	396
	Competitors						
	Cable BDUs	1	13	73	36	4	127
	ILEC out-of-territory	11	24	0	89	1	125
	Other	45	66	0	72	31	214
	Competitors Total	57	103	73	197	36	466
	Total	100	340	75	298	49	862
	Technology mode percent of total	*12%*	*39%*	*9%*	*35%*	*6%*	*100%*
	Revenue growth 2004-2005	*-20.3%*	*19.7%*	*28.9%*	*5.2%*	*-25.3%*	*5.6%*
	CAGR 2003-2005	*-9.0%*	*8.7%*	*30.3%*	*8.3%*	*-2.7%*	*6.6%*

Source: CRTC data collection

Notes: (a) Access mode share shows access mode's share of total revenues in same category.
(b) Access mode share for residential dial-up, for example, shows residential dial-up's share of total residential revenues.
(c) Other includes the remaining technologies such as, but not limited to, ISDN, fixed wireless and satellite.

Internet subscribers

The number of Internet access connections is generally measured on the basis of the number of end-user subscriptions. This, however, is not the case with business Internet access subscriptions which support multiple users. Consequently, the following data on subscriptions focuses solely on the residential segment of the market.

As Table 4.4.9 indicates, as of year-end 2005, there were roughly 8 million residential Internet access subscriptions, or 64% of all Canadian households. Households with high-speed Internet access reached 6.4 million households, or 51% of all Canadian households, up from 43% in the previous year.

Table 4.4.9
Residential Internet subscribers by type of provider

	2001		2002		2003		2004		2005			
	Subscribers /1000	Share*	Subscribers /1000	Share*	Subscribers /1000	Share*	Subscribers /1000	Share*	Subscribers /1000	Share*	*Growth 2004-2005*	*CAGR 2001-2005*
Incumbents												
Dial-up	1,524	48.4%	1,392	46.1%	1,123	44.9%	1,010	49.8%	765	48.8%	*-24.2%*	*-15.8%*
High-speed	903	35.3%	1,400	39.7%	1,859	41.2%	2,268	41.9%	2,676	41.6%	*18.0%*	*31.2%*
Total	2,427	42.5%	2,792	42.7%	2,982	42.5%	3,277	44.0%	3,441	43.0%	*5.0%*	*9.1%*
Competitors (cable BDUs)												
Dial-up	65	2.1%	70	2.3%	44	1.8%	38	1.9%	53	3.4%	*37.7%*	*-4.9%*
High-speed	1,624	63.5%	2,055	58.3%	2,532	56.1%	2,933	54.1%	3,467	53.9%	*18.2%*	*20.9%*
Total	1,689	29.6%	2,125	32.5%	2,576	36.7%	2,971	39.9%	3,520	44.0%	*18.5%*	*20.2%*
Competitors (ILEC out-of-territory)												
Dial-up							25	1.2%	34	2.2%	*36.4%*	
High-speed							0	0.0%	0	0.0%	*0.0%*	
Total							25	0.3%	34	0.4%	*36.4%*	
Competitors (other)												
Dial-up	1,560	49.5%	1,558	51.6%	1,333	53.3%	952	47.0%	716	45.7%	*-24.8%*	*-17.7%*
High-speed	31	1.2%	71	2.0%	122	2.7%	216	4.0%	286	4.4%	*32.5%*	*74.1%*
Total	1,591	27.9%	1,629	24.9%	1,455	20.7%	1,168	15.7%	1,002	12.5%	*-14.2%*	*-10.9%*
Competitors Total												
Dial-up	1,625	51.6%	1,628	53.9%	1,377	55.1%	1,016	50.2%	803	51.2%	*-21.0%*	*-16.2%*
High-speed	1,655	64.7%	2,126	60.3%	2,654	58.8%	3,149	58.1%	3,753	58.4%	*19.2%*	*22.7%*
Total	3,280	57.5%	3,754	57.3%	4,031	57.5%	4,165	56.0%	4,555	57.0%	*9.4%*	*8.6%*
Total												
Dial-up	3,149	55.2%	3,020	46.1%	2,500	35.6%	2,025	27.2%	1,568	19.6%	*-22.6%*	*-16.0%*
High-speed	2,558	44.8%	3,527	53.9%	4,513	64.4%	5,416	72.8%	6,429	80.4%	*18.7%*	*25.9%*
Total	5,706		6,547		7,013		7,442		7,997		*7.5%*	*8.8%*

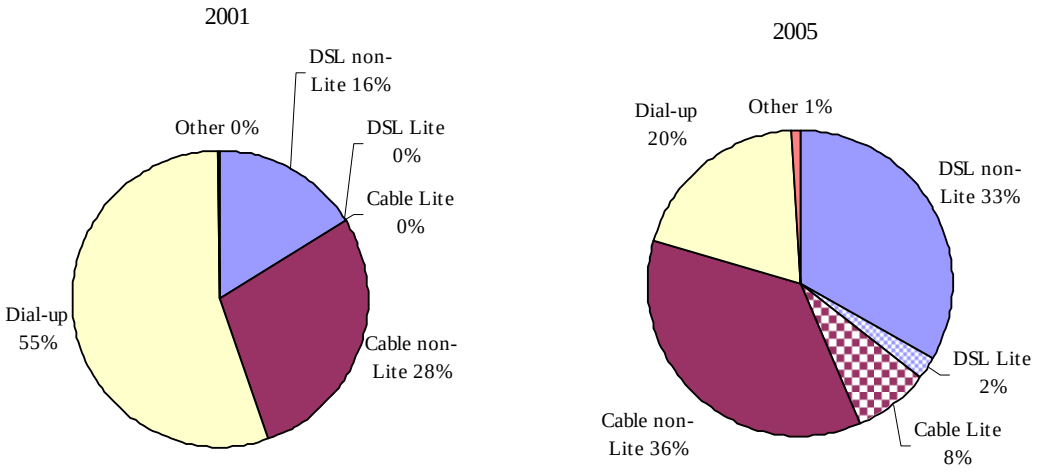
Notes: Percentages refer to access mode's proportion of all residential Internet subscriptions of its type, except for the total rows, where they are a proportion of total industry residential subscriptions.

Source: CRTC data collection

There has been a shift in residential Internet access subscriptions from dial-up to high-speed Internet access from 2001 to 2005. As displayed in Figure 4.4.2, in 2001, the majority (55%) of Internet access was by dial-up access. Five years later, in 2005, dial-up access was 20% of all residential Internet subscriptions. High-speed access is now the dominant means of accessing the Internet, comprising 80% of all residential Internet subscriptions.

As further indicated in Table 4.4.9, during the period 2001 to 2005, the number of dial-up subscriptions declined from 3.1 million subscriptions to 1.6 million, an average annual decline of 16%. A contributing factor to the decline in dial-up subscriptions is the introduction of a "high-speed Lite" service in 2002 by DSL and cable Internet access service providers. High-speed Lite service provides always-on connections to the Internet at slower transmission speeds (e.g., in the range of 128 Kbps). In Table 4.4.9, this service is included in the high-speed category, and is shown separately in Figure 4.4.2.

Figure 4.4.2
Residential Internet access technology mix
(2001 v. 2005)



Source: CRTC data collection

High-speed Lite subscriptions were approximately 10% of the number of Internet subscribers in 2005, representing approximately 857 thousand subscriptions. Of these, 77% were cable modem subscriptions and 23% were DSL.

In 2001, cable modem subscriptions were approximately 1.7 times that of DSL. Excluding Lite subscriptions, the gap between DSL and cable modem has almost disappeared, as cable modem subscriptions, excluding Lite, were slightly greater than that of DSL in 2005.

Broadband availability

As of December 2005, approximately 53% of the number of communities in Canada had access to broadband services, compared to 38% in 2004.[73] This increase in broadband availability is particularly evident in New Brunswick and Prince Edward Island. These provinces realized a 30% and 10% increase respectively in Broadband availability compared to 2004.

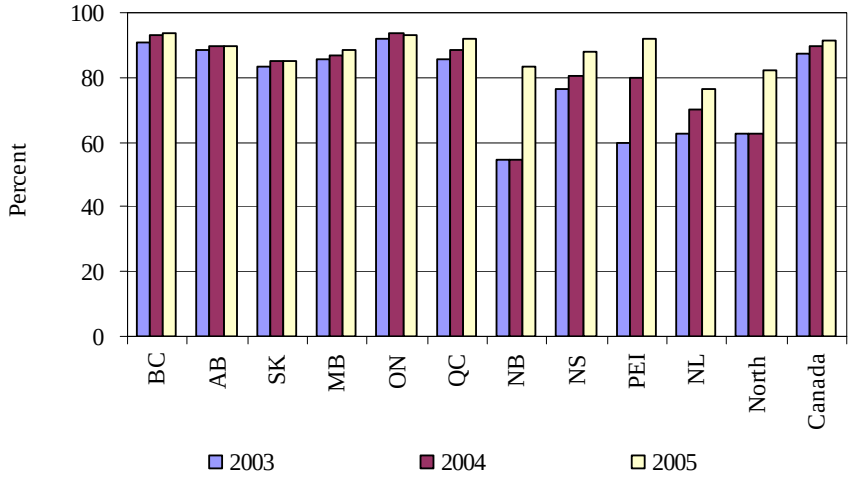
In New Brunswick, an agreement was reached between the federal and provincial governments and Aliant Telecom for a province-wide broadband program under the Canadian Strategic Infrastructure Fund. At the end of 2005, the network was 80% complete and service was being offered in the majority of communities. Once completed in 2006, broadband coverage will have been extended to 347 communities in New Brunswick, including all of the First Nations communities in the province.

In 2005, Prince Edward Island realized an increase from 80% to 90% in broadband availability. This can be directly attributed to the Broadband Pilot Program, which funded five projects and all network builds were completed by the end of 2005.

To accelerate broadband deployment in Canada, several government programs such as the Canadian Strategic Infrastructure Fund and the Broadband Pilot Program as well as private sector initiatives have been designed to support the deployment of broadband access and transport facilities in rural, remote, northern and First Nations areas. Appendix 5 provides details on such programs and initiatives.

Figure 4.4.3 shows the progress made in the deployment of broadband infrastructure since 2003.

Figure 4.4.3
Broadband availability
(percent of households)



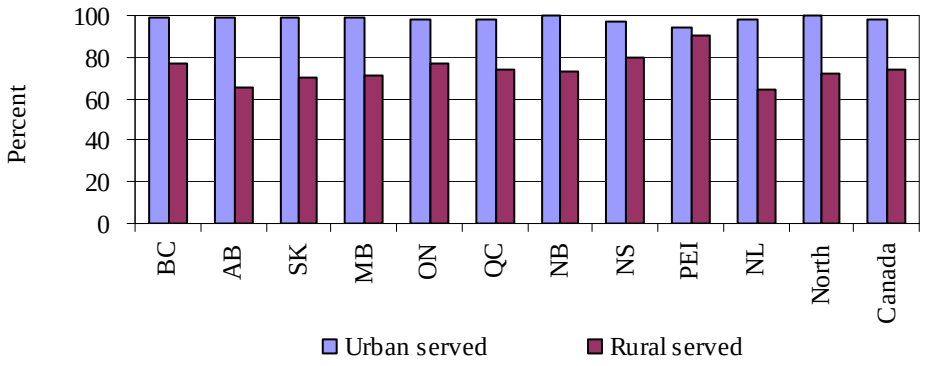
Source: Industry Canada and CRTC data collection

[73] Source: Industry Canada: Broadband Directorate.

When viewed on a household basis, approximately 91% of Canadian households were within areas that could have access to broadband services in 2005 compared to 89% in 2004. Factoring in the effects of deployment of Telesat's Ka band, broadband service is available to an additional 150 thousand subscribers.[74] With this deployment, broadband availability has increased to 92% of Canadian households.

Figure 4.4.4 compares the availability of broadband access for urban and rural[75] households. The majority of Canadian households (72%) are located in urban centres. In 2005, virtually all Canadian households in urban centres could have access to broadband services, versus 74% for rural[76] centres.[77]

Figure 4.4.4
Broadband availability
(percent of households)
Urban v. rural
(2005)



Source: Industry Canada and CRTC data collection

On a provincial/territorial basis, as displayed in Figure 4.4.5, broadband access is available to over 77% of households. This availability ranges from a low of 77% in Newfoundland and Labrador to a high of 94% in British Columbia.

Figure 4.4.5 shows that, while 92% of Canadian households have access to broadband services, 56% of these households actually subscribe to the service. The lowest subscription rate was in the Prince Edward Island at 35% of households and the highest rate was in Alberta at 70%.

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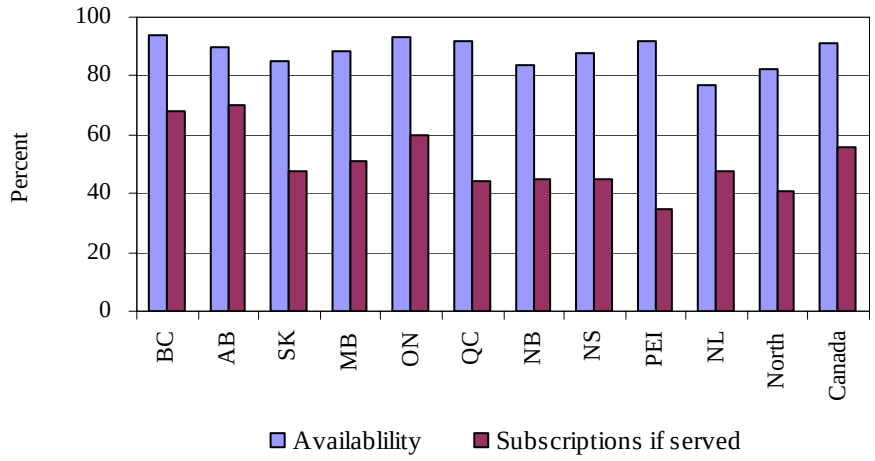
74 Source: Evidence filed by Telesat Canada pursuant to *Review and disposition of deferral accounts for the second price cap period*, Telecom Public Notice CRTC 2004-1, 24 March 2004.

75 Urban is defined as built up areas within CMAs, being classified as urban cores, urban fringes, and secondary urban cores. Rural is defined in accordance with the "rural areas and small towns" definition of Statistics Canada. This includes rural fringes, which are rural areas within CMAs, and urban areas outside of CMAs.

76 It should be noted that the methodology used to identify broadband availability in rural areas may result in an overstatement of availability of broadband service in rural areas, since communities are taken to be served if service is reported within them.

77 Due to granularity of the postal code structure in urban centres, broadband details by postal code collected by the CRTC data collection system were used to identify the availability of broadband service within urban centres. However, in rural areas and the North, where the postal code structure does not lend itself to data collection in sparsely populated areas, information gathered by Industry Canada was utilized.

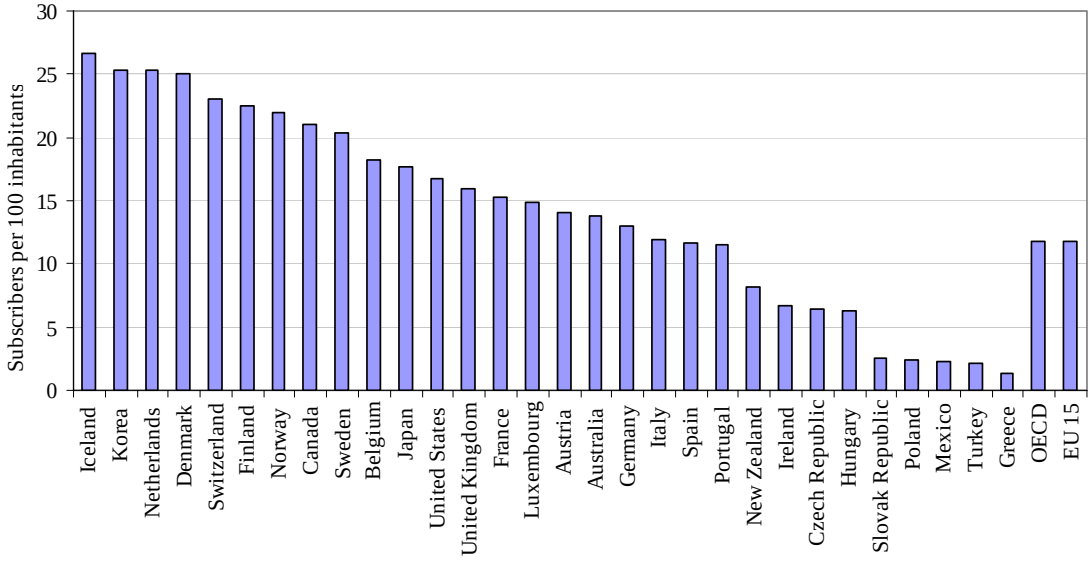
Figure 4.4.5
Broadband availability v. subscriptions
(2005)



Source: Industry Canada and CRTC data collection

Internationally, with respect to the G8 group[78] of countries, Canada ranks number one with respect to broadband availability. As illustrated in Figure 4.4.6, as of December 2005, Canada ranked eighth internationally in terms of broadband subscription rate per 100 inhabitants when compared to the member countries of the Organisation for Economic Co-operation and Development (OECD).

Figure 4.4.6
Broadband access in OECD countries
per 100 inhabitants (December 2005)



Source: OECD

[78] The G8 group of countries includes: Japan, the United States, Italy, United Kingdom, Germany, France, Canada and Russia.

4.5 Data and private line

Highlights

- Data revenues decreased 4.1% to $2.2 billion and private line revenues declined 10.7% to $1.9 billion, resulting in an overall decline in data and private line revenues of 7.2%.
- The distribution of data protocol services revenue continued to shift towards the new services – IP-VPN (virtual private network) and Ethernet, with these services accounting for 49% of data protocol revenues, up from 41% in 2004.
- Competitors' share of data and private line revenues increased from 27% in 2004 to 31% in 2005.

Sector description

a) Description of services

Data services provide managed local area network (LAN) and wide area network (WAN) services for data, video and voice networks within a metropolitan area or on a broader national or international scale. Data services include legacy protocols such as X.25 (packet switched network), asynchronous transfer mode (ATM), frame relay, and newer protocols such as Ethernet and IP-VPN, and the provisioning and management of networks and network equipment.

Private line services provide the capability to link two or more locations over dedicated facilities for the purpose of transporting data, video or voice traffic. Private line services include high-capacity digital transmission services (at speeds ranging from 56/64 kbps to gigabit speeds over fibre) and digital data systems, as well as voice-grade and other analog services. Transmission facilities include copper wire, fibre optic cable or satellite.

b) Markets and observations

The data and private line market sector is the fourth largest of the five markets, with revenues of $4.1 billion or roughly 12% of total telecommunications revenues. Table 4.5.1 shows that data and private line revenues declined at an annual rate of 2.9% over the 2001 to 2005 period. Since 2004, data revenues exceeded private line revenues, accounting for approximately 55% of the total in 2005. Between 2004 and 2005, data revenues declined by 4.1% and private line revenues declined by 10.7%.

Data protocol revenues (i.e. product-related revenues which exclude revenues associated with provisioning and management) grew in 2005 due to the growth in Ethernet and IP-VPN revenues.

Table 4.5.1
Data and private line revenues
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Data	2,069	2,092	2,184	2,334	2,239	*-4.1%*	*2.0%*
Private line	2,528	2,454	2,300	2,077	1,854	*-10.7%*	*-7.5%*
Total	4,597	4,546	4,484	4,411	4,093	*-7.2%*	*-2.9%*

Source: CRTC data collection

The competitors' share of the data and private line revenues increased from 27% in 2004 to 31% in 2005.

c) Sector participants

Data and private line services are delivered using wireline, fixed wireless and satellite technologies by a number of service providers including incumbent carriers, satellite service providers, facilities and resale-based competitive service providers, cable BDUs and utility companies. Data and private line services are marketed directly to end-users in the retail market or as wholesale products through service providers. Wholesale services can either be resold or used to construct underlying networks to deliver products and services to end-customers in the retail market.

d) Regulatory framework

Competition was first permitted in the data and interexchange (IX) private line market in 1979. The Commission has since forborne from regulating many of the incumbents' data services as well as their private line services on many IX routes.

The Commission forbears from regulating pursuant to section 34 of the Act when it considers that the service is, or will be, subject to a level of competition sufficient to protect the interest of users of the service. Order 99-434[79] directed competitors to file with the Commission on 1 April and 1 October of every year, the list of IX private line routes on which they offer or provide service at the equivalent of DS-3 (44.736 mbps) or greater, using their own terrestrial facilities, or terrestrial facilities leased from a company other than an ILEC or an affiliate of an ILEC. The Order further stated that upon the Commission being satisfied that one or more competitors meet this criterion, it would proceed quickly to forbear without process given that the evidence on which the forbearance determination would be made stems from the ILEC's competitors. Incumbent companies are also free to apply for forbearance at any time.

In 2005, the Commission forbore from regulating approximately 1,000 IX routes,[80] bringing the total to approximately 3,000 forborne private line routes.

X.25 and frame relay services were forborne from regulation under Order 96-130[81] in February 1996. Under Order 2000-553[82], in June 2000, WAN services were forborne from regulation. The access components of ATM and Ethernet services provided by ILECs continue to be regulated.

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79 Telecom Order CRTC 99-434, 12 May 1999.

80 Decision 2005-18 and *Forbearance from regulating interexchange private line services on additional routes*, Telecom Decision CRTC 2005-44, 5 August 2005.

81 Telecom Order CRTC 96-130, 19 February 1996.

82 *Forbearance granted for telcos' wide area network services*, Order CRTC 2000-553, 16 June 2000.

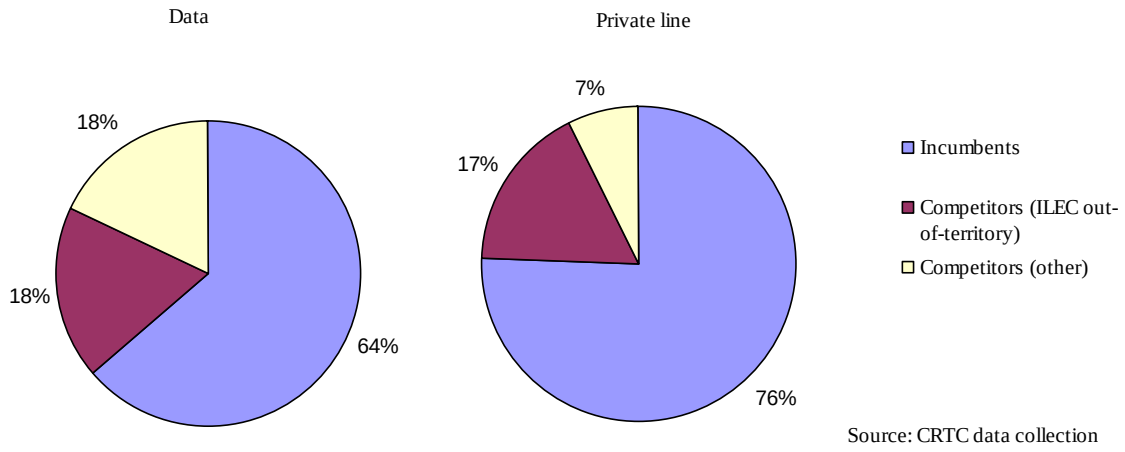
e) Regulatory developments

In 2005, the Commission issued its decision concerning competitor digital network (CDN) service.[83] The decision requires ILECs to provide competitors various services and facilities as part of CDN services including: digital network access (DNA) and links, DNA intra-exchange, CO channelization, non-forborne metropolitan IX services, copper and optical co-location links and other CO connecting links.

Market segments

As shown in Figure 4.5.1, the incumbents were the major providers in both the data and private line markets in 2005, capturing slightly more of the private line market at 76%, compared to 64% of the data market.

Figure 4.5.1
Data and private line revenue market share by type of provider
(2005)

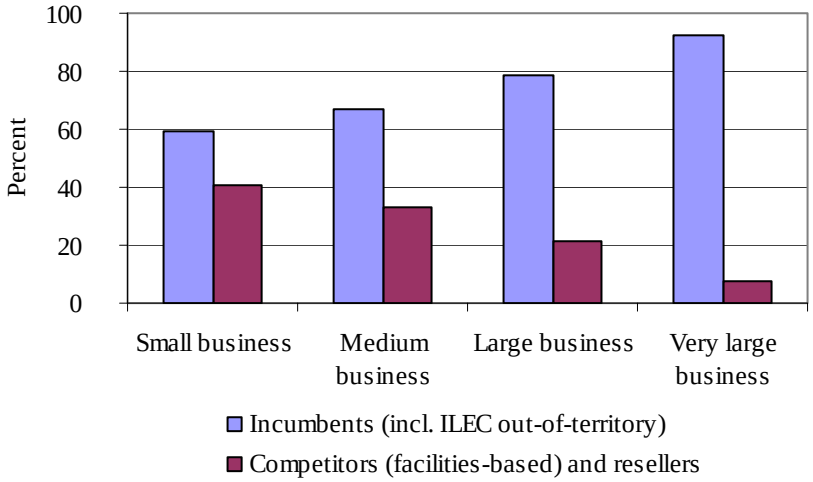


Source: CRTC data collection

Figure 4.5.2 displays the incumbents', including their out-of-territory activities, and the competitors' respective share of the data and private line revenues by size of customer account. In 2005, competitors captured between 30% and 40% of small and medium business data and private line revenues. Incumbents, with their out-of-territory operations, have been focussing on the large and very large segments of the market, capturing approximately 80% and 90% of the large and very large business data and private line revenues.

[83] *Competitor Digital Network Services*, Telecom Decision CRTC 2005-6, 3 February 2005.

Figure 4.5.2
Data and private line revenues by customer size and type of provider (2005)

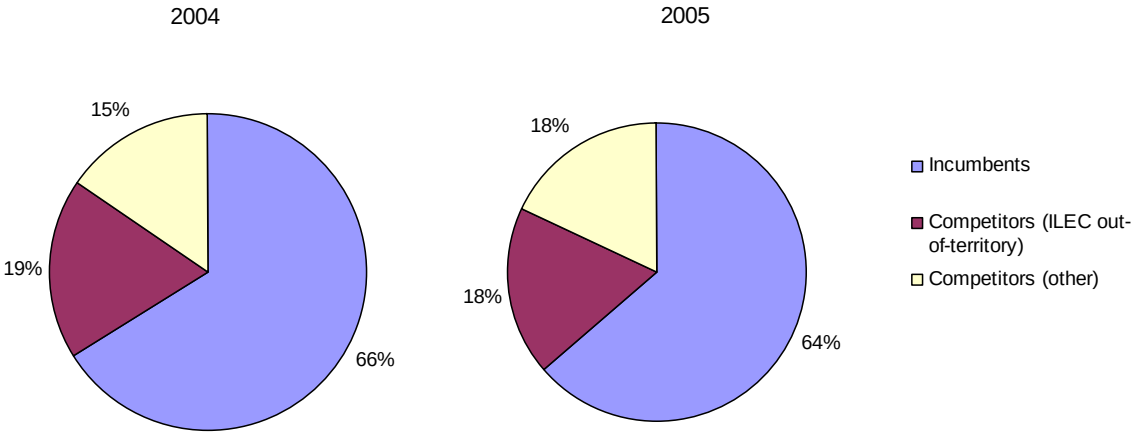


Source: CRTC data collection

a) Data services

As shown in Figure 4.5.3, the incumbents' revenue share decreased from 66% in 2004 to 64% in 2005, as competitors (other) increased by 3% in 2005.

Figure 4.5.3
Data revenue market share by type of provider



Source: CRTC data collection

Table 4.5.2 shows data revenues in terms of data protocols and other. Data protocols reflect the following five data services: X.25, ATM, Frame Relay, Ethernet and IP-VPN. Other includes services such as network management and networking equipment-related revenues. Although total data revenues declined by 4.5% in 2005, over the 2001 to 2005 period, they increased by 1.6% annually due to data protocol annual revenue growth of 11.9%.

Table 4.5.2
Data protocol and other revenues[84]

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Data protocols	865	1,259	1,381	1,418	1,354	*-4.5%*	*11.9%*
Other	1,204	833	767	890	849	*-4.6%*	*-8.4%*
Total	2,069	2,092	2,148	2,307	2,203	*-4.5%*	*1.6%*

Source: CRTC data collection

Table 4.5.3 displays revenues for the data protocol services. In 2005, data protocol revenues declined by 4.5%, to $1.4 billion, with aggregated revenues from Ethernet and IP-VPN increasing by 13.6%, representing 49% of total protocol revenues, up from 41% in 2004. This trend is expected to continue given the increased flexibility, capacity and interoperability that the new generation of IP services provides to the end-customer. In addition to capturing revenue from the legacy data services, the newer data services are also contributing to the reduction in private line revenues due to their ability to cost-effectively replicate the capacity and security associated with private line services.

Legacy data revenues continued to decline in 2005: X.25 declined by 13.2%, ATM by 20.2%, and frame relay revenues declined for the second year in a row, with a 17.4% decline in 2005. The decline in legacy data revenues is an indication of the telecommunications industry's adoption of newer technologies as discussed above. Ethernet growth at 4.3% in 2005 is second to IP-VPN, which continued to post the most significant revenue growth at 52.1%.

[84] Data revenues provided by smaller service providers do not provide this level of detail and are not included in this Table or Table 4.5.3.

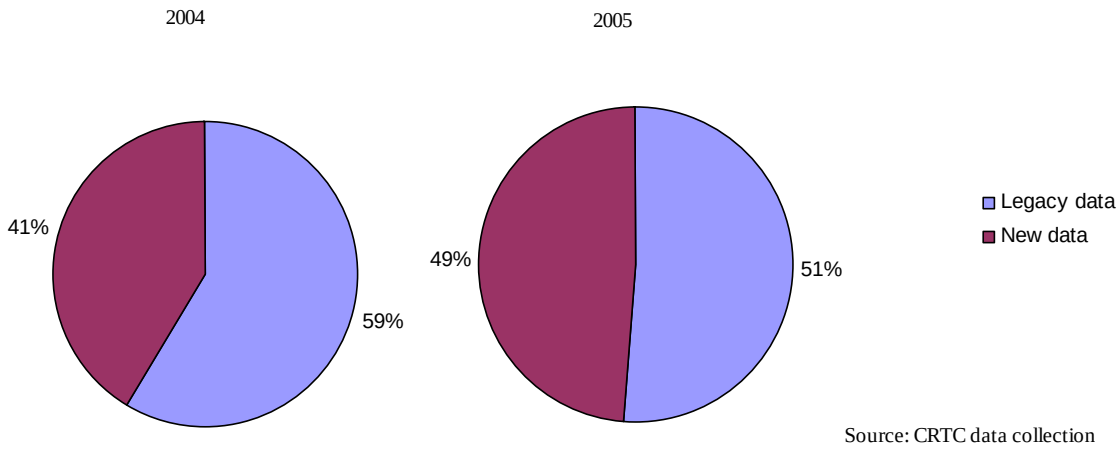
Table 4.5.3
Data protocol retail and wholesale revenues by service category
($ millions)

	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2002-2005*
X.25						
Retail	134.4	131.2	102.0	91.0	*-10.8%*	*-12.2%*
Wholesale	22.5	9.1	5.7	2.5	*-56.1%*	*-51.9%*
Total	156.9	140.3	107.7	93.5	*-13.2%*	*-15.8%*
ATM						
Retail	116.0	109.5	83.6	72.7	*-13.0%*	*-14.4%*
Wholesale	12.4	14.6	16.1	6.9	*-57.1%*	*-17.7%*
Total	128.4	124.2	99.7	79.6	*-20.2%*	*-14.7%*
Frame relay						
Retail	564.4	573.7	546.8	476.9	*-12.8%*	*-5.5%*
Wholesale	73.7	76.0	78.4	39.6	*-49.5%*	*-18.7%*
Total	638.1	649.7	625.2	516.5	*-17.4%*	*-6.8%*
Total legacy data						
Retail	814.8	814.4	732.4	640.6	*-12.5%*	*-7.7%*
Wholesale	108.6	99.7	100.2	49.0	*-51.1%*	*-23.3%*
Total	923.4	914.1	832.6	689.6	*-17.2%*	*-9.3%*
Ethernet						
Retail	272.5	351.3	427.4	442.6	*3.6%*	*17.5%*
Wholesale	24.7	48.1	44.4	49.6	*11.7%*	*26.2%*
Total	297.2	399.4	471.8	492.2	*4.3%*	*18.3%*
IP-VPN						
Retail	38.6	64.9	110.7	169.6	*53.2%*	*63.8%*
Wholesale	0.1	2.4	2.4	2.4	*0.0%*	*188.4%*
Total	38.7	67.2	113.1	172.0	*52.1%*	*64.4%*
Total new data						
Retail	311.1	416.2	538.1	612.2	*13.8%*	*25.3%*
Wholesale	24.8	50.5	46.8	52.0	*11.1%*	*28.0%*
Total	335.9	466.7	584.9	664.2	*13.6%*	*25.5%*
Total data protocols						
Retail	1,125.9	1,230.6	1,270.5	1,252.8	*-1.4%*	*3.6%*
Wholesale	133.4	150.2	147.0	101.0	*-31.3%*	*-8.9%*
Total	1,259.3	1,380.8	1,417.5	1,353.8	*-4.5%*	*2.4%*

Source: CRTC data collection

Figure 4.5.4 shows the revenue share of the legacy and new data services, illustrating the trend away from the legacy protocols towards Ethernet and IP-VPN. As previously noted, this evolution is expected to continue as service providers migrate end-users to secure VPNs over both private IP networks and the Internet.

Figure 4.5.4
Data protocol services
Revenue distribution by service category



Source: CRTC data collection

Table 4.5.4 shows incumbent and competitor data protocol revenue market shares by data service category. Overall, the incumbents' revenue share decreased from 61% in 2004 to 58% in 2005. For the new services, the incumbents' share dropped from 70% in 2004 to 63% in 2005, while the incumbents' share of legacy data services remained unchanged at 54% in 2005.

Table 4.5.4
Revenue market share by data protocol service category

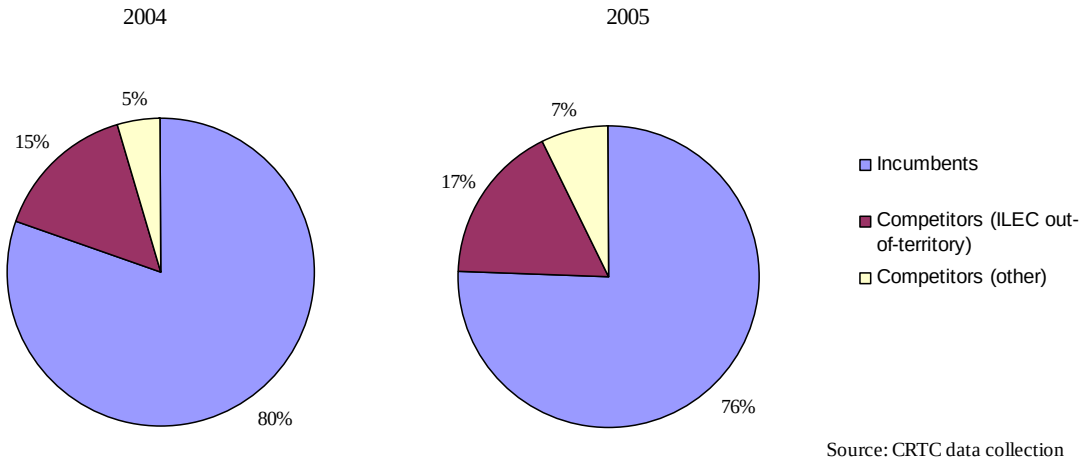
	2003	2004	2005
X.25			
Incumbents	90%	91%	91%
Competitors (ILEC out-of-territory)	8%	8%	9%
Competitors (other)	2%	1%	0%
ATM			
Incumbents	22% #	27% #	28%
Competitors (ILEC out-of-territory)	26% #	57% #	50%
Competitors (other)	52%	16%	23%
Frame relay			
Incumbents	56%	52%	51%
Competitors (ILEC out-of-territory)	5%	31%	28%
Competitors (other)	39%	17%	21%
Total legacy data			
Incumbents	57% #	54% #	54%
Competitors (ILEC out-of-territory)	8% #	31% #	28%
Competitors (other)	35%	15%	18%
Ethernet			
Incumbents	64% #	70% #	63%
Competitors (ILEC out-of-territory)	22% #	18% #	22%
Competitors (other)	13%	12%	15%
IP-VPN			
Incumbents	90%	71%	63%
Competitors (ILEC out-of-territory)	0%	1%	0%
Competitors (other)	10%	28%	37%
Total new data			
Incumbents	68% #	70% #	63%
Competitors (ILEC out-of-territory)	19% #	14% #	17%
Competitors (other)	13%	15%	21%
Total Data protocols			
Incumbents	61% #	61% #	58%
Competitors (ILEC out-of-territory)	12% #	24% #	22%
Competitors (other)	28%	15%	19%

Source: CRTC data collection

b) Private line services

As shown in Figure 4.5.5, competitors gained 4% in private line revenue share as the incumbents' share declined from 80% in 2004 to 76% in 2005.

Figure 4.5.5
Private line revenue market share by type of provider



Source: CRTC data collection

Table 4.5.5 provides a summary of industry-wide revenues for short-haul and long-haul services.

Table 4.5.5
Private line service retail and wholesale revenues by service category[85]
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Short-haul							
Retail	471	527	496	521	503	*-3.5%*	*-1.7%*
Wholesale	342	440	444	369	285	*-22.8%*	*-4.5%*
Total	813	966	940	890	788	*-11.5%*	*-0.8%*
Long-haul							
Retail	971	800	739	732	660	*-9.8%*	*-9.2%*
Wholesale	744	688	600	419	406	*-3.1%*	*-14.1%*
Total	1,715	1,488	1,339	1,151	1,066	*-7.4%*	*-11.2%*
Total							
Retail	1,442	1,326	1,235	1,253	1,163	*-7.2%*	*-5.2%*
Wholesale	1,086	1,128	1,044	788	691	*-12.3%*	*-10.7%*
Total	2,528	2,454	2,280	2,042	1,854	*-9.2%*	*-7.5%*

Source: CRTC data collection

[85] The information relating to private line revenues provided by smaller service providers does not contain this level of detail and are not included in this table.

At approximately $1.9 billion in 2005, total private line revenues have declined each year over the 2001 to 2005 period:

- Short-haul revenues dropped by 11.5% in 2005, accounting for 43% of total private line revenues in 2005, virtually unchanged from 44% in 2004.
- Long-haul revenues decreased by 7.4% in 2005, continuing its downward trend.
- Retail revenues decreased by 7.2% in 2005, accounting for 63% of private line revenues in 2005, compared to 61% in 2004.
- Wholesale revenues dropped by 12.3% in 2005, compared to a decline of 10.7% over the 2001 to 2005 period.

The use of satellite facilities in long-haul has remained relatively constant over the 2001 to 2005 period at approximately 20% of total long-haul revenues.

As shown in Table 4.5.6, the incumbents' market share for short-haul routes declined from 90% in 2004 to 73% in 2005 and for long-haul routes, increased from 72% in 2004 to 77% in 2005.

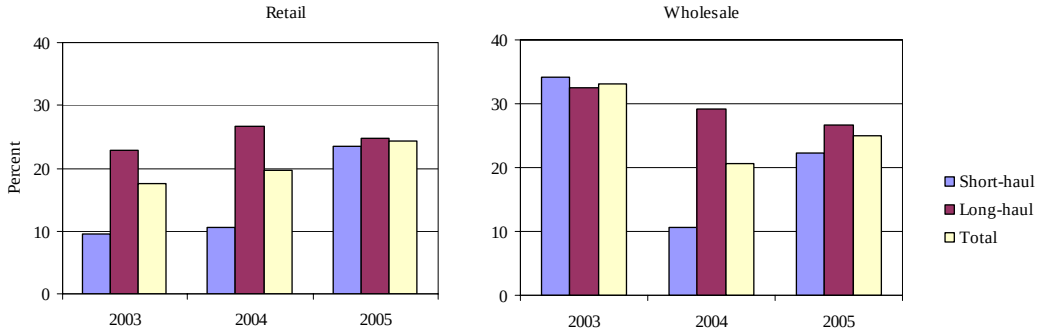
Table 4.5.6
Private Line
Short-haul and long-haul revenue market share

	2003	2004	2005
Short-haul			
Incumbents	79%	90%	73%
Competitors (ILEC out-of-territory)	10%	9%	24%
Competitors (other)	11%	1%	3%
Long-haul			
Incumbents	73%	72%	77%
Competitors (ILEC out-of-territory)	8%	20%	14%
Competitors (other)	19%	7%	10%
Total			
Incumbents	75%	80%	76%
Competitors (ILEC out-of-territory)	9%	15%	17%
Competitors (other)	16%	5%	7%

Source: CRTC data collection

Figure 4.5.6 shows the competitors' private line revenue share for the short-haul and long-haul and for the retail and wholesale markets. In 2005, competitors captured a higher revenue share in both the retail and wholesale short-haul market and a lower revenue share in both the retail and wholesale long-haul market than in 2004.

Figure 4.5.6
Competitors' private line revenue share
Short-haul and long-haul



Source: CRTC data collection

4.6 Wireless

Highlights

- In 2005, the wireless industry, excluding paging, had an annual growth rate of 16.5% in revenues and 13.3% in subscribers.
- The average revenue per subscriber (ARPU) increased from $52 per month in 2004 to $53 per month in 2005.

Sector description

a) Description of services

The wireless market segment encompasses telecommunications services provided via wireless access facilities. These services include mobile telephone, mobile data such as text messaging, wireless Internet access and paging services. More recently, these services have been expanded to include services such as mobile TV. While satellite private line services are included in the data and private line section of this report, the satellite services, associated with mobile telephone, are included in this section.

In addition to voice communication over wireless networks, new technologies and applications in wireless are used to send text messages from one subscriber to another, as well as multi-media messages which include photos, graphics, video and audio clips. Inter-carrier text messaging has been in place for the last few years. The reach of picture and video messaging services continues to expand following the introduction of full inter-carrier multi-media messaging on 1 July 2005.[86] Other services are increasingly being offered to wireless subscribers. For example, on 8 November 2005, the national wireless service providers announced a joint venture to develop a standard common way of making payments over the wireless network. This service is expected to be launched during the third quarter of 2006.[87]

Wireless services are generally billed on a usage basis. Subscribers have a choice of two payment options: prepaid and post-paid. Prepaid plans require the subscriber to purchase the wireless service prior to using it, while post-paid plans require payment on a monthly basis after using the service.

b) Markets and observations

Wireless revenues continued to grow in 2005 with pricing plans that focused on certain markets, improved handsets, and innovative service bundles. Table 4.6.1 displays wireless revenues and the number of subscribers for the period 2001 to 2005.

[86] CWTA Press Release, 29 June 2005.

[87] Rogers Wireless Communications Inc. News Release, 8 November 2005.

Table 4.6.1
Wireless and paging revenues and number of subscribers

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Wireless revenues ($ millions)	6,190.9	6,924.6	7,905.3	9,348.8	10,895.5	*16.5%*	*15.2%*
Paging revenues ($ millions)	232.0	166.4	131.4	103.3	92.0	*-11.0%*	*-20.7%*
Total revenues	6,422.9	7,091.0	8,036.7	9,452.1	10,987.5	*16.2%*	*14.4%*
Wireless subscribers (millions)	10.8	12.0	13.3	15.0	17.0	*13.3%*	*12.0%*
Paging subscribers (millions)	1.3	1.1	1.0	0.8	0.6	*-17.9%*	*-16.5%*

Source: CRTC data collection

In 2005, the wireless sector, excluding paging, had revenues of approximately $10.9 billion, a 16.5% increase over the previous year, and approximately 17.0 million subscribers, representing a 13.3% increase over the previous year.

c) Sector participants

Industry participants include both facilities-based and non facilities-based wireless service providers. Non facilities-based wireless service providers are generally referred to as mobile virtual network operators (MVNOs) or resellers. Facilities-based wireless providers include: three national service providers (the Bell Group,[88] TCC and RWI), regional wireless service providers (MTS Allstream and SaskTel), and small incumbents. MVNOs include operators such as Virgin Mobile Canada and Primus Telecommunications Canada Inc.

As discussed in section 4.0, the growing trend in the telecommunications market to package or bundle various services has caused telecommunications providers that do not offer wireless service to enter into agreements or alliances with wireless service providers or enter the market as MVNOs in order to offer wireless services as part of their bundled services.

d) Regulatory framework

Industry Canada has responsibility for the licensing regime governing wireless communications, including the awarding of spectrum licences to companies, and for the terms and conditions for these licences.

In Decisions 94-15,[89] 96-14,[90] and 98-18,[91] the Commission forbore from regulating mobile wireless services on the basis that such services were sufficiently competitive.

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88 The Bell Group consists of Bell Canada, Aliant Telecom, Northwestel Mobility Inc., Télébec Mobilité, NorTel (Northern) Mobility and Virgin Wireless.

89 *Regulation of wireless services*, Telecom Decision CRTC 94-15, 12 August 1994, as amended by an erratum dated 8 September 1994.

90 *Regulation of mobile wireless telecommunications services*, Telecom Decision CRTC 96-14, 23 December 1996.

91 *NBTel Inc. – Forbearance from Regulating Cellular and Personal Communications Services*, Telecom Decision CRTC 98-18, 2 October 1998.

e) Regulatory developments

In Decision 2005-72,[92] the Commission directed that wireless number portability (WNP) be made available initially for porting-in[93] and porting-out[94] of a customer's phone number in British Columbia, Alberta, Ontario and Quebec and porting-out in the rest of Canada by 14 March 2007, and porting-in for all other areas where LEC to LEC local number portability (LNP) is available, by 12 September 2007. For all other locations where LNP does not exist, WNP would be introduced within Commission-approved time periods upon wireless carrier notification to an ILEC. WNP would allow consumers to switch between telecommunications service provider, either wireline or wireless, and retain the telephone number of their previous provider.

Industry Canada announced, in May 2005, a review of its spectrum policy framework to accommodate increasing demand for wireless services and the rapid pace of evolution in wireless technology.[95]

In July 2005, following a consultation with the wireless industry and others, Industry Canada announced a new policy that encourages regional and national wireless carriers to voluntarily provide digital roaming to non-competing rural wireless carriers.[96] Industry Canada stated that this will enable rural subscribers to benefit from advanced services and extend coverage across Canada.

Market segments

As displayed in Figure 4.6.1, wireless revenues, excluding paging, have continuously increased from $6.2 billion in 2001 to $10.9 billion in 2005, representing an average annual growth rate of 15.2%. Similarly, there has been a continuous increase in the number of subscribers from 10.8 million in 2001 to 17.0 million in 2005, resulting in an average annual growth rate of 12.0%.

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92 *Implementation of wireless number portability,* Telecom Decision CRTC 2005-72, 20 December 2005.

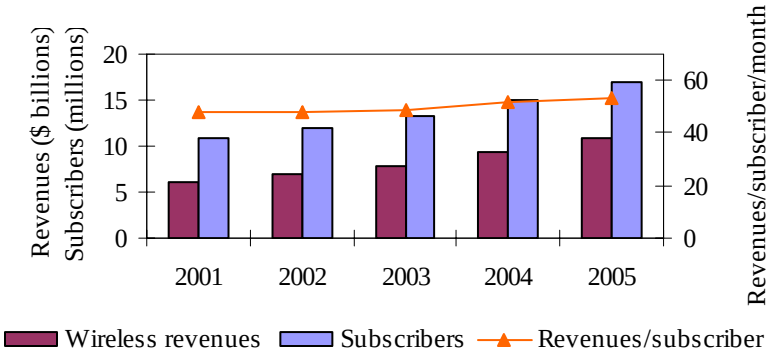
93 Porting-in refers to the ability of a service provider to accept a customer's phone number from another service provider when the customer changes service providers.

94 Porting-out refers to the ability of a service provider to transfer to another service provider a customer's phone number when the customer leaves that provider for another service provider.

95 Canada Gazette Notice No. DGTP-001-05 – "Consultation on a renewed spectrum policy framework for Canada and continued advancements in spectrum management," 2 May 2005.

96 Canada Gazette Notice No. DGTP-006-05 – "Policy to promote digital roaming for rural subscribers," 21 July 2005.

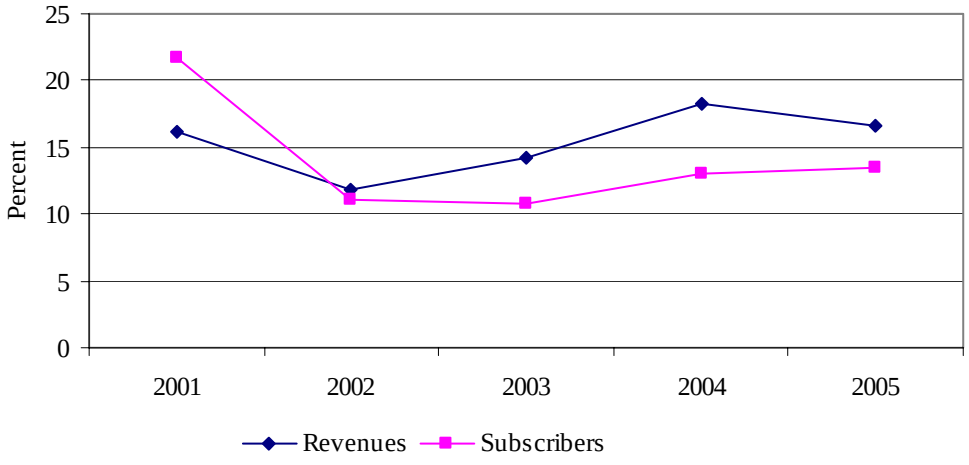
Figure 4.6.1
Wireless revenues, subscribers and revenues per subscriber
(excluding paging)



Source: CRTC data collection

Figure 4.6.2 displays the relationship between the growth rates in the number of subscribers and the growth rates in wireless revenues from 2001 to 2005. Growth in wireless revenues and in the number of subscribers has generally been between 10% to 22% throughout this period. In 2001, the growth rate in the number of subscribers was approximately 1.4 times that of revenues. However, since 2002, revenue growth rates exceeded the subscriber growth rates which resulted in the gradual increase in the monthly average revenues per subscriber displayed in Figure 4.6.1.

Figure 4.6.2
Wireless revenue and subscriber growth rates
(excluding paging)



Source: CRTC data collection

The ARPU was $48 per month in 2001 and gradually increased to $53 per month in 2005. The increase in ARPU may be attributed to greater use of cellular phones for non-voice applications or services which generally stimulates revenue growth.

Major revenue components

As displayed in Table 4.6.2, wireless revenues consisted of five major components: basic voice, long distance, paging, data and other,[97] and terminal. The increase in wireless revenues can be attributed to the growth in the number of wireless subscribers and, to a lesser extent, increased use of existing and new wireless applications as reflected in these components.

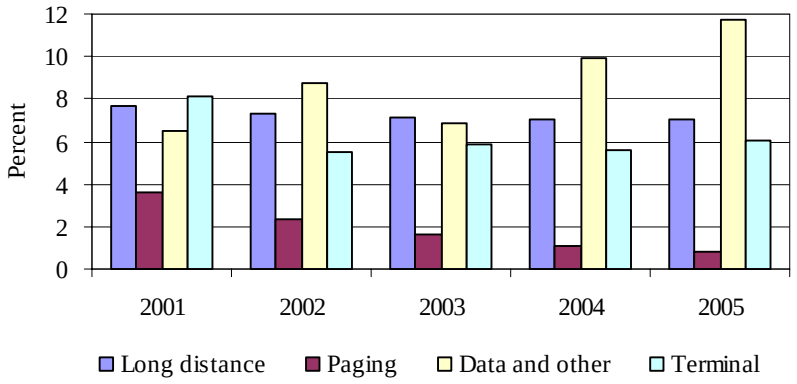
Table 4.6.2
Wireless and paging revenues components
($ millions)

	2001	2002	2003	2004	2005	*Growth 2004-2005*	*CAGR 2001-2005*
Basic voice	4,758.4	5,399.9	6,315.5	7,214.4	8,172.14	*13.3%*	*14.5%*
Long distance	494.3	517.7	572.6	664.9	771.1	*16.0%*	*11.8%*
Paging	232.0	166.4	131.4	103.3	92.0	*-11.0%*	*-20.7%*
Data and other	416.9	617.4	549.3	941.4	1,286.7	*36.7%*	*32.5%*
Terminal	521.3	389.6	467.9	528.1	665.6	*26.0%*	*6.3%*
Total	6,422.9	7,091.0	8,036.7	9,452.1	10,987.4	*16.2%*	*14.4%*

Source: CRTC data collection

Since 2001, basic voice packages have accounted for 74% to 79% of total wireless revenues. In 2005, basic voice packages were 74% of total revenues. The remaining components, as a percent of wireless revenues, are displayed in Figure 4.6.3 for the period 2001 to 2005.

Figure 4.6.3
Wireless and paging revenues by major component
(excluding basic voice)



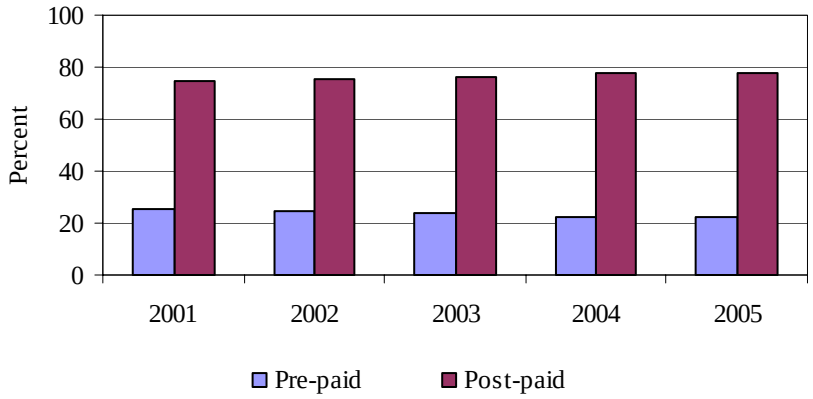
Source: CRTC data collection

[97] Data and other consists of roaming charges, interconnection charges, and mobile data revenues.

As shown in Figure 4.6.3, paging revenues, as a percent of total wireless revenues decreased over the five-year period. This was primarily due to the replacement of pagers by mobile telephones and other messaging devices. The data and other component increased to over 11% of wireless revenues as subscribers made greater use of text messaging using short message services, Internet services and multimedia messaging services. The increase in data and other can be also attributed to smaller increases in the remaining revenues within that component, namely, those related to mobile roaming and interconnection.

Figure 4.6.4 presents the percentage of the number of subscribers on prepaid and post-paid plans for the years 2001 to 2005. As displayed in this figure, the proportion of the number of post-paid subscribers increased from 75% in 2002 to 78% in 2004 but declined slightly to 77% in 2005. This decline in 2005 may be attributed to the offering of prepaid services by MVNOs. A variety of different post-paid plans and options give customers more choices and more services. Most wireless service providers have targeted the post-paid segment of the market in order to retain customers who are generally required to commit to the supplier for a fixed length of time, thus minimizing the churn rate.

Figure 4.6.4
Percent of pre-paid and post-paid subscribers



Source: CRTC data collection

Wholesale

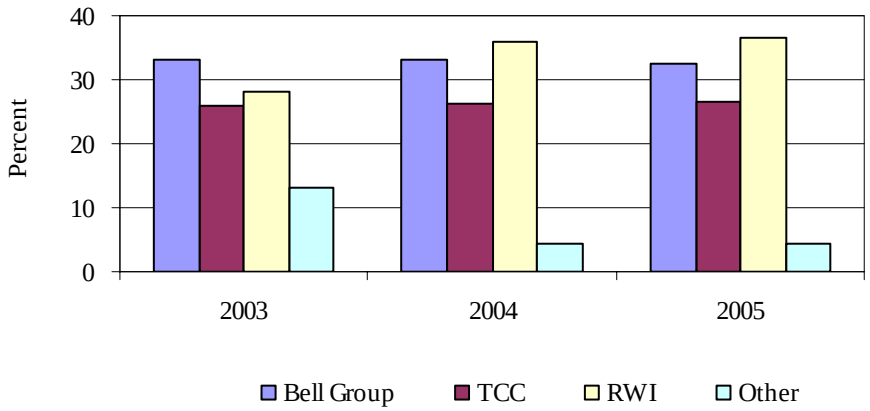
Wireless wholesale revenues generally consist of (a) roaming revenues a company receives for processing calls from wireless subscribers of other companies roaming within its territory, and (b) revenues derived from the sale of wireless minutes to MVNOs.

The wholesale market has been relatively small and has essentially consisted of wholesale roaming services as the major service providers have generally relied on their own facilities. More recently, they entered into agreements with each other which enabled them to share each other's facilities, thereby maximizing their coverage while minimizing capital expenditures. As MVNOs enter the market, the wholesale market is expected to grow.

Market share

Figure 4.6.5 and Figure 4.6.6 portray the market shares of each of the major wireless service providers in the industry with respect to the number of subscribers and revenues for the years 2003 to 2005. In 2005, at the national level, the three largest service providers (the Bell Group, RWI and TCC) continued to dominate the wireless market both in terms of subscribers and revenues.

Figure 4.6.5
Wireless service providers' subscriber market share[98]

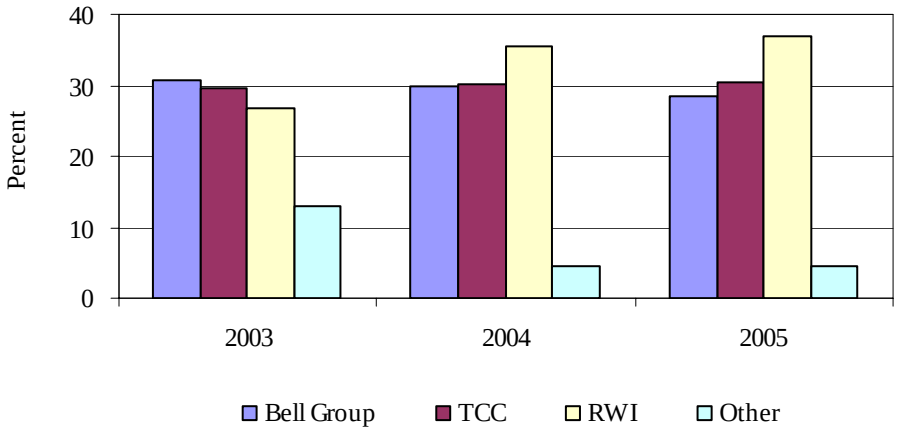


Source: CRTC data collection

The market share increase for RWI and the decline for the other providers in 2004 was due to industry consolidation.

[98] Other includes MTS Allstream, SaskTel and smaller wireless service providers.

Figure 4.6.6
Wireless service providers' revenue market share[99]



Source: CRTC data collection

Table 4.6.3 presents the wireless providers' subscriber share in each province and the North[100] in 2005.

Table 4.6.3
Wireless subscriber market share by province
(2005)

Province	Bell Group	TCC	RWI	Other
British Columbia	10%	46%	44%	0%
Alberta	12%	61%	26%	0%
Saskatchewan	0%	3%	17%	79%
Manitoba	0%	12%	28%	60%
Ontario	38%	18%	44%	1%
Quebec	48%	20%	33%	0%
New Brunswick	73%	6%	21%	0%
Nova Scotia	63%	11%	26%	0%
Prince Edward Island	81%	10%	10%	0%
Newfoundland and Labrador	86%	10%	4%	0%
The North	100%	0%	0%	0%

Source: CRTC data collection

[99] Other includes MTS Allstream, SaskTel and smaller wireless service providers.

[100] The North includes: Yukon, Northwest Territories and Nunavut.

Churn rate

Table 4.6.4 shows the average monthly churn rate for each of the major wireless service providers for the years 2001 to 2005. The churn rate is calculated by dividing the number of disconnected subscriber units by the average number of units. Without number portability and platform compatibility between service providers, and with the continued preponderance of longer term post-paid contracts, these rates are generally low.

Table 4.6.4
Average monthly churn rates

	2001	2002	2003	2004	2005
Bell Mobility	1.5%	1.6%	1.4%	1.3%	1.6%
Microcell	2.6%	3.4%	3.1%	see note	see note
RWI	2.2%	2.0%	2.1%	1.8%	2.1%
TCC	2.0%	1.8%	1.5%	1.4%	1.4%

Note: Microcell was acquired by RWI in 2004
Source: Companies' annual reports

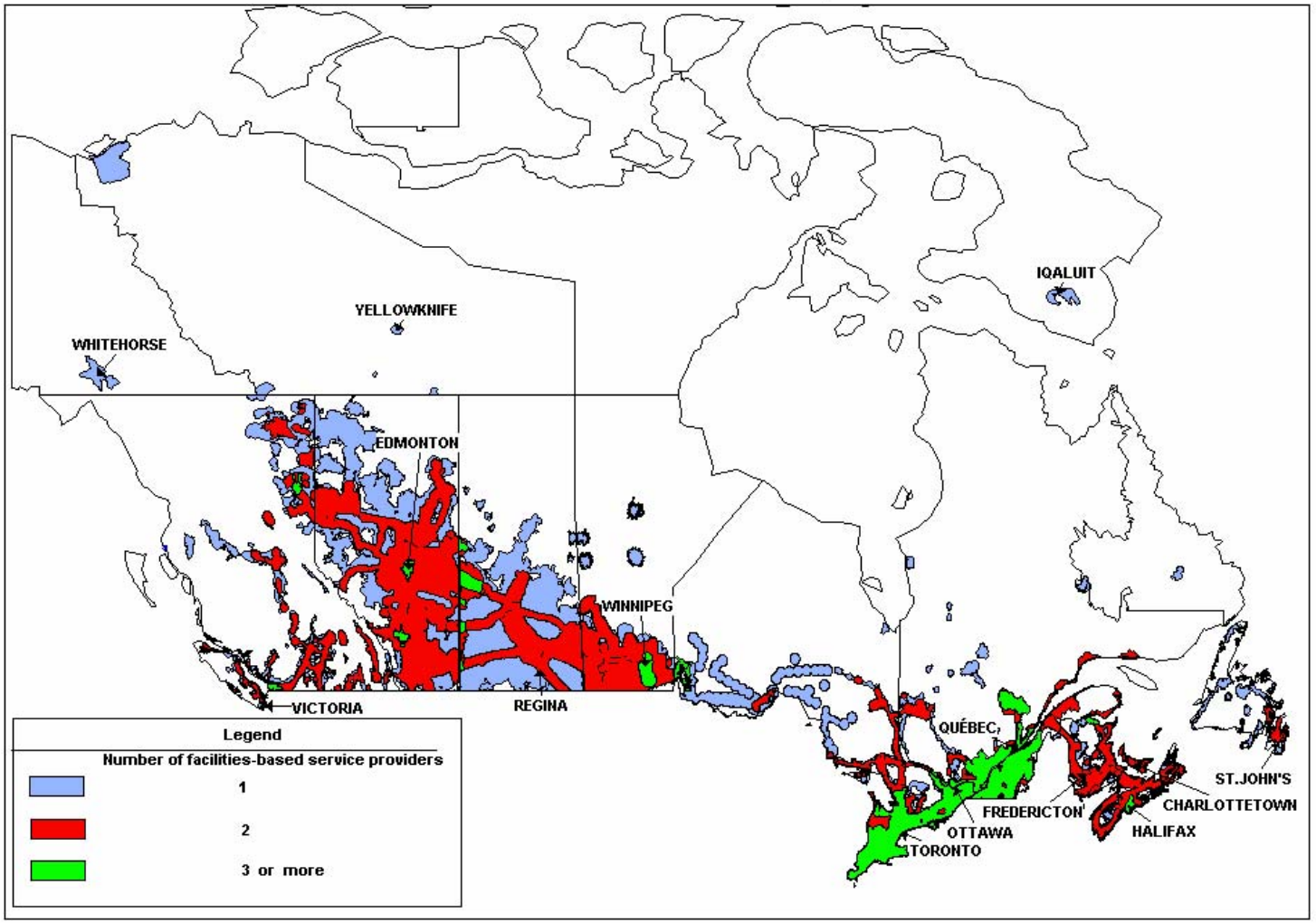
Mobile coverage

The wireless footprint covers approximately 20% of Canada's geographic area. However, it encompasses approximately 97% of Canadians.

Mobile coverage did not expand significantly in 2005. This is reflective of the extent to which the wireless footprint has evolved and the various roaming and sharing agreements among the providers. As the wireless market evolves, it is expected that new technologies such as third-generation wireless (3G) will be the focus of capital expenditures to enable the industry to offer additional, as well as, enhanced services.

The map on the following page displays facilities-based wireless service providers' coverage across Canada by number of service providers.

Presence of wireless facilities-based service providers



Data collection methodology and analysis

The data collection process is used to maintain and update the data on (i) the telecommunications service providers registration lists, (ii) the contribution regime, (iii) the telecommunications fees, (iv) the international licences, and (v) the telecommunications service industry as part of the Commission's monitoring activities.[101]

All service providers are stratified and assigned into one of two groups. Group 1 service providers generally (i) have significant telecommunications revenues, (ii) file tariffs, or (iii) have international licences, while Group 2 service providers generally have fewer revenues.

The service providers are required to complete and submit annually to the Commission a registration form which is used to update some basic information about the service provider and to determine what additional forms, if any, are to be issued to the service provider. Group 1 service providers access and submit the registration form electronically using the secure web-based data collection system (DCS). These service providers are notified by e-mail at the start of the data collection process and are provided with (i) the due dates for submission of the registration form and the subsequent data forms, and (ii) the information to access DCS. Group 2 service providers, however, are mailed a registration form for completion. Once submitted, this marks the end of the data collection process for the Group 2 service providers.

The Group 1 service providers are required to submit a range of company-specific information, including financial data (e.g., income statement, balance sheet and capital expenditures), along with detailed telecommunications information focusing on product and geographic market information. Geographic markets are defined on a national, provincial/territorial, regional, local forbearance region or city, and for mapping purposes, postal code basis. The data submitted is as of December 31 of each year.

Once the data is submitted, it is analysed to determine the validity of the submissions by performing a time series analysis or by comparing the data or its derivatives such as average revenues per line or minute against other established benchmarks.

Certain figures published in prior years' monitoring reports may be restated to be consistent with data displayed in this report. Other figures may change as a result of some companies resubmitting prior years' data. In addition, certain data may be reclassified to better reflect the market segments or industry developments. These restatements are identified by means of a number sign (#).

Most of the tables and figures included in the report are derived from the CRTC Data Collection System while others are derived using Statistics Canada and Industry Canada information. The data derived from these sources are not always consistent with each other, given that the universe surveyed, the definitions used and the level of detail requested may be different. The data source is identified for each table and figure contained in the report.

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[101] *Telecommunications industry data collection: updating of CRTC registration lists, telecommunications fees, Canadian contribution mechanism fund administration, international licences and monitoring of the Canadian telecommunications industry*, Telecom Circular CRTC 2003-1, 11 December 2003.

Classification of Canadian telecommunications service providers

Telecommunications service providers operating in Canada are classified into two broad categories, incumbents and competitors, as outlined below. The category into which a given telecommunications service provider falls may change from one year to the next as a result of consolidation in the industry.

1) ***Incumbents*** are the telephone companies that provided telecommunications services on a monopoly basis prior to the introduction of competition. However, for the purposes of this report, the operating results of these companies from their activities outside their traditional operating territory are included with the competitors (ILEC out-of-territory) group discussed below.

    a) *Large incumbents* are those incumbent telephone companies serving relatively large geographical areas, usually including both rural and urban populations, and providing local, long distance, wireless, Internet, data, private line and other services. The large incumbents include Aliant Telecom Inc., Bell Canada, MTS Allstream Inc., Saskatchewan Telecommunications and TELUS Communications Company (TCC), as well as Northwestel Inc., Société en commandite Télébec, and TELUS Communications (Québec) Inc. (now part of TCC).

    b) *Small incumbents* are those incumbent telephone companies serving relatively small geographical areas (mostly municipal areas generally located in less densely populated areas) in Ontario, Quebec and, in one instance, British Columbia. Due to the limited size of their serving areas, they typically do not provide facilities-based long distance services. However, they do provide a range of local voice, data, Internet and wireless services. The small incumbents include companies such as NorthernTel, Limited Partnership and TBayTel.

2) ***Competitors*** are telecommunications service providers that are not incumbent telephone companies as described in (1) above. However, this group includes incumbent affiliates, such as Navigata Communications Ltd., operating outside the traditional operating territory of the incumbent. Competitors are subdivided as follows:

    a) *Competitors (ILEC out-of-territory)* are the incumbent companies operating outside their traditional operating territory. This includes both subsidiaries and divisions of the incumbents providing telecommunications services outside their traditional operating territory such as TCC's operations in Ontario.

    b) *Competitors (other)* are providers of telecommunications services that are not incumbent telephone companies. These competitors are subclassified as:

        i) *Facilities-based competitive service providers* are those companies that own facilities. Examples include cable broadcasting distribution undertakings (BDUs), utility companies, and other facility-based service providers:

Classification of Canadian telecommunications service providers

- *Cable BDUs* include the former cable monopolies that also provide telecommunications services (e.g., Internet, wireless and voice). These cable BDUs include such companies as Rogers Communications Inc., Shaw Communications Inc., Le Groupe Vidéotron ltée, Cogeco Inc. and Bragg Communications Incorporated.

- *Utility companies* are service providers whose market entry into telecommunications services, or whose corporate group's market entry into telecommunications services, was preceded by a group-member company's activity in the electricity, gas or other utility business. These service providers include such companies as Hydro One Telecom Inc., Toronto Hydro Telecom Inc. and FibreWired Network.

- *Other facilities-based providers* are those competitive service providers that own physical transmission facilities (e.g., inter-city, intra-city, or local). These service providers include such companies as FCI Broadband (a division of Futureway Communications Inc.).

ii) *Resellers* are non facilities-based competitive service providers. These service providers include Primus Telecommunications Canada Inc., Distributel Communications Limited, YAK Communications (Canada) Inc., and many others, including independent Internet service providers.

iii) *Competitive pay telephone service providers (CPTSPs)* are competitive service providers that provide public telecommunications services by way of pay telephones.

In the classification structure above, wireless companies are classified based on the affiliate relationship of the service providers.

Summary of Canadian telecommunications markets subject to Commission forbearance rulings

Market	Year	Details
Terminal equipment	1994	Sales and rental of terminal equipment.
Satellite services	1994	Telesat's digital video compression services initially; further services offered by Telesat, such as sale/lease of earth stations and RF channels, in subsequent years.
Services provided by non-dominant carriers	1995	Services, such as long distance, data, Internet and private line, provided by non-dominant competitive carriers.
Data and private line	1997	High-speed/DDS interexchange private line services provided by the incumbent telephone companies on a route-specific basis.
Internet services	1997	Incumbent telephone companies' retail Internet services in 1997 and those of cable service providers in 1998.
Long distance	1998	Toll and toll-free services.
International services	1998	Initially excluded Teleglobe; however, certain international services provided by Teleglobe were later forborne as well.
Data and private line	2004	With some conditions, additional high capacity digital data interexchange private line services forborne from regulation on routes for which competitors of several incumbent local exchange carriers now offer, or provide, services at DS-3 or greater bandwidth.
Local exchange service	2005	The Commission determined that local voice over Internet protocol (VoIP) services are part of the same relevant market as circuit-switched local exchange services.
Local exchange service	2006	A framework for forbearance from the regulation of local exchange services was established. The framework set out criteria that incumbents must meet for forbearance from regulation of residential or business local exchange service within a defined geographic area.

Local market share by local forbearance regions
Residential and business markets
(as of December 2005)

Pursuant to *Forbearance from the regulation of retail local exchange services*, Telecom Decision CRTC 2006-15, 6 April 2006 (Decision 2006-15), this appendix provides the market share of the incumbents, competitors (ILEC out-of-territory) and competitors (other) separately for residential and business local exchange services for each local forbearance region (LFR) as of December 2005. In Decision 2006-15, the Commission defined LFRs as geographic components that consist of census metropolitan areas (CMAs) and/or economic regions (ERs) as defined by Statistics Canada.

Part A – Local market share by LFR (residential)

LFR description	LFR no.	Residential		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
Aliant Telecom				
Newfoundland and Labrador				
Avalon Peninsula ER	1001	100.0%	0.0%	0.0%
South Coast – Burin Peninsula ER and Notre Dame – Central Bonavista Bay ER	1002	100.0%	0.0%	0.0%
West Coast – Northern Peninsula – Labrador ER	1003	100.0%	0.0%	0.0%
Prince Edward Island				
Prince Edward Island ER	1101	86.8%	0.0%	13.2%
Nova Scotia				
Halifax CMA	1201	65.1%	0.0%	34.9%
Cape Breton ER	1202	98.4%	0.0%	1.6%
North Shore ER	1203	79.0%	0.0%	21.0%
Annapolis Valley ER	1204	96.9%	0.0%	3.1%
Southern ER	1205	88.1%	0.0%	11.9%
New Brunswick				
Saint John – St. Stephen ER	1301	100.0%	0.0%	0.0%
Moncton – Richibucto ER	1302	99.6%	0.0%	0.4%
Campbellton – Miramichi ER	1303	100.0%	0.0%	0.0%
Fredericton – Oromocto ER	1304	100.0%	0.0%	0.0%
Edmundston – Woodstock ER	1305	100.0%	0.0%	0.0%
Bell Canada				
Quebec				
Montréal CMA	2401	86.6%	0.0%	13.4%
Lanaudière ER (excl. LFR 2401)	2402	100.0%	0.0%	0.0%
Outaouais ER and Laurentides ER (excl. LFRs 2401 and 3517)	2403	100.0%	0.0%	0.0%
Montérégie ER (excl. LFR 2401)	2404	91.4%	4.9%	3.7%
Sherbrooke CMA	2405	99.7%	0.0%	0.3%

Part A – Local market share by LFR (residential)

LFR description	LFR no.	Residential		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
Bell Canada (cont'd)				
Quebec (cont'd)				
Estrie ER (excl. LFR 2405)	2406	100.0%	0.0%	0.0%
Trois-Rivières CMA	2407	97.1%	0.0%	2.9%
Centre-du-Québec ER (excl. LFR 2407)	2408	97.8%	0.0%	2.2%
Québec CMA	2409	89.9%	0.0%	10.1%
Saguenay CMA	2410	100.0%	0.0%	0.0%
Saguenay – Lac-Saint-Jean ER (excl. LFR 2410)	2411	100.0%	0.0%	0.0%
Mauricie ER, Capitale-Nationale ER and Chaudière – Appalaches ER (excl. LFRs 2407 and 2409)	2412	100.0%	0.0%	0.0%
Abitibi – Témiscamingue ER, Nord-du-Québec ER, Côte-Nord ER and Bas-Saint-Laurent ER	2413	100.0%	0.0%	0.0%
Ontario				
Windsor CMA	3501	99.0%	0.0%	1.0%
Windsor – Sarnia ER (excl. LFR 3501)	3502	100.0%	0.0%	0.0%
London CMA	3503	87.7%	0.0%	12.3%
London ER (excl. LFR 3503)	3504	100.0%	0.0%	0.0%
Brantford CMA	3505	94.7%	0.0%	5.3%
Hamilton CMA	3506	90.4%	0.0%	9.6%
St. Catharines – Niagara CMA	3507	97.8%	0.0%	2.2%
Hamilton – Niagara Peninsula ER (excl. LFRs 3505, 3506 and 3507)	3508	99.8%	0.0%	0.2%
Kitchener – Waterloo CMA	3509	90.7%	0.0%	9.3%
Guelph CMA	3510	87.0%	0.0%	13.0%
Barrie CMA	3511	93.7%	0.0%	6.3%
Kitchener – Waterloo – Barrie ER (excl. LFRs 3509, 3510, 3511 and 3513)	3512	100.0%	0.0%	0.0%
Toronto CMA	3513	85.2%	0.1%	14.7%
Toronto ER (excl. LFR 3513)	3514	88.9%	0.0%	11.1%
Kingston CMA	3515	99.2%	0.0%	0.8%
Kingston – Pembroke ER (excl. LFR 3515)	3516	100.0%	0.0%	0.0%
Ottawa – Gatineau CMA	3517	92.3%	0.0%	7.7%
Ottawa ER (excl. LFR 3517)	3518	100.0%	0.0%	0.0%
Northwest ER	3519	100.0%	0.0%	0.0%
Greater Sudbury CMA	3520	100.0%	0.0%	0.0%
Northeast ER (excl. LFR 3520)	3521	100.0%	0.0%	0.0%
Peterborough CMA	3522	100.0%	0.0%	0.0%
Muskoka – Kawarthas ER (excl. LFR 3522)	3523	100.0%	0.0%	0.0%
Stratford – Bruce Peninsula ER	3524	100.0%	0.0%	0.0%

Part A – Local market share by LFR (residential)

LFR description	LFR no.	Residential		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
MTS Allstream				
Manitoba				
Winnipeg ER	4601	92.1%	0.0%	7.9%
Southwest ER and Parklands ER	4602	100.0%	0.0%	0.0%
North Central ER and South Central ER	4603	99.0%	0.0%	1.0%
Southeast ER	4604	100.0%	0.0%	0.0%
Interlake ER	4605	100.0%	0.0%	0.0%
North ER	4606	100.0%	0.0%	0.0%
SaskTel				
Saskatchewan				
Regina – Moose Mountain ER	4701	99.9%	0.0%	0.1%
Saskatoon – Biggar ER	4702	100.0%	0.0%	0.0%
Swift Current – Moose Jaw ER	4703	100.0%	0.0%	0.0%
Yorkton – Melville ER	4704	100.0%	0.0%	0.0%
Northern ER and Prince Albert ER	4705	100.0%	0.0%	0.0%
TCC				
Quebec				
Mauricie ER (excl. LFR 2407), Capitale-Nationale ER and Chaudière – Appalaches ER	2414	100.0%	0.0%	0.0%
Bas-Saint-Laurent ER	2415	100.0%	0.0%	0.0%
Côte-Nord ER and Gaspésie – Îles-de-la-Madeleine ER	2416	100.0%	0.0%	0.0%
Alberta				
Edmonton ER	4801	91.0%	0.0%	9.0%
Calgary ER	4802	83.0%	0.0%	17.0%
Red Deer ER and Banff – Jasper – Rocky Mountain House ER	4803	99.6%	0.0%	0.4%
Wood Buffalo – Cold Lake ER	4804	99.7%	0.0%	0.3%
Athabasca – Grande Prairie – Peace River ER	4805	99.9%	0.0%	0.1%
Lethbridge – Medicine Hat ER	4806	99.5%	0.0%	0.5%
Camrose – Drumheller ER	4807	100.0%	0.0%	0.0%
British Columbia				
Victoria CMA	5901	93.1%	0.0%	6.9%
Vancouver Island and Coast ER (excl. LFR 5901)	5902	99.8%	0.0%	0.2%
Vancouver CMA	5903	91.8%	0.0%	8.2%
Abbotsford CMA	5904	99.7%	0.0%	0.3%
Lower Mainland – Southwest ER (excl. LFRs 5903 and 5904)	5905	100.0%	0.0%	0.0%
Thompson – Okanagan ER (excl. LFR 5910)	5906	99.8%	0.0%	0.2%
Kootenay ER	5907	100.0%	0.0%	0.0%
Cariboo ER	5908	99.8%	0.0%	0.2%
North Coast ER, Nechako ER and Northeast ER	5909	100.0%	0.0%	0.0%
Kelowna CMA	5910	99.7%	0.0%	0.3%

Part A – Local market share by LFR (residential)

LFR description	LFR no.	Residential		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
Télébec				
Quebec				
Outaouais ER and Laurentides ER (excl. LFRs 3517 and 2401)	2417	100.0%	0.0%	0.0%
Southeast Region (Montérégie ER, Estrie ER, Mauricie ER, Centre-du-Québec ER, Chaudière – Appalaches ER and Capitale-Nationale ER)	2418	96.9%	3.1%	0.0%
Gaspésie – Îles-de-la-Madeleine ER	2419	100.0%	0.0%	0.0%
Northwest Region (Abitibi – Témiscamingue ER, Nord-du-Québec ER and Côte-Nord ER)	2420	100.0%	0.0%	0.0%

Part B – Local market share by LFR (business)

LFR description	LFR no.	Business		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
Aliant Telecom				
Newfoundland and Labrador				
Avalon Peninsula ER	1001	81.6%	0.4%	18.0%
South Coast – Burin Peninsula ER and Notre Dame – Central Bonavista Bay ER	1002	99.8%	0.2%	0.0%
West Coast – Northern Peninsula – Labrador ER	1003	99.8%	0.2%	0.0%
Prince Edward Island				
Prince Edward Island ER	1101	88.2%	0.3%	11.5%
Nova Scotia				
Halifax CMA	1201	83.5%	3.5%	13.0%
Cape Breton ER	1202	96.6%	1.9%	1.5%
North Shore ER	1203	85.8%	1.4%	12.8%
Annapolis Valley ER	1204	92.9%	2.9%	4.2%
Southern ER	1205	86.5%	0.8%	12.7%
New Brunswick				
Saint John – St. Stephen ER	1301	99.8%	0.2%	0.0%
Moncton – Richibucto ER	1302	97.0%	0.7%	2.3%
Campbellton – Miramichi ER	1303	99.4%	0.6%	0.0%
Fredericton – Oromocto ER	1304	95.7%	0.2%	4.1%
Edmundston – Woodstock ER	1305	96.3%	3.6%	0.1%
Bell Canada				
Quebec				
Montréal CMA	2401	84.0%	10.9%	5.1%
Lanaudière ER (excl. LFR 2401)	2402	96.5%	2.8%	0.7%
Outaouais ER and Laurentides ER (excl. LFRs 2401 and 3517)	2403	98.8%	1.1%	0.1%
Montérégie ER (excl. LFR 2401)	2404	92.6%	6.3%	1.1%
Sherbrooke CMA	2405	90.6%	8.0%	1.4%
Estrie ER (excl. LFR 2405)	2406	98.2%	1.3%	0.5%
Trois-Rivières CMA	2407	92.6%	7.1%	0.3%
Centre-du-Québec ER (excl. LFR 2407)	2408	89.4%	9.6%	1.0%
Québec CMA	2409	82.6%	16.1%	1.3%
Saguenay CMA	2410	93.9%	5.8%	0.3%

Part B – Local market share by LFR (business)

LFR description	LFR no.	Business		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
Bell Canada (cont'd)				
Quebec				
Saguenay – Lac-Saint-Jean ER (excl. LFR 2410)	2411	97.4%	2.5%	0.1%
Mauricie ER, Capitale-Nationale ER and Chaudière – Appalaches ER (excl. LFRs 2407 and 2409)	2412	98.2%	1.8%	0.0%
Abitibi – Témiscamingue ER, Nord-du-Québec ER, Côte-Nord ER and Bas-Saint-Laurent ER	2413	98.4%	1.5%	0.1%
Ontario				
Windsor CMA	3501	81.4%	14.2%	4.4%
Windsor – Sarnia ER (excl. LFR 3501)	3502	85.1%	10.0%	4.9%
London CMA	3503	81.1%	11.3%	7.6%
London ER (excl. LFR 3503)	3504	93.6%	3.3%	3.1%
Brantford CMA	3505	87.2%	7.6%	5.2%
Hamilton CMA	3506	83.2%	9.3%	7.5%
St. Catharines – Niagara CMA	3507	85.4%	11.7%	2.9%
Hamilton – Niagara Peninsula ER (excl. LFRs 3505, 3506 and 3507)	3508	88.9%	6.4%	4.7%
Kitchener – Waterloo CMA	3509	80.8%	11.3%	7.9%
Guelph CMA	3510	84.9%	7.2%	7.9%
Barrie CMA	3511	78.7%	2.5%	18.8%
Kitchener – Waterloo – Barrie ER (excl. LFRs 3509, 3510, 3511 and 3513)	3512	82.0%	1.8%	16.2%
Toronto CMA	3513	78.8%	11.1%	10.1%
Toronto ER (excl. LFR 3513)	3514	87.5%	8.2%	4.3%
Kingston CMA	3515	89.2%	7.7%	3.1%
Kingston – Pembroke ER (excl. LFR 3515)	3516	87.5%	2.9%	9.6%
Ottawa – Gatineau CMA	3517	90.4%	7.0%	2.6%
Ottawa ER (excl. LFR 3517)	3518	92.6%	5.0%	2.4%
Northwest ER	3519	99.9%	0.1%	0.0%
Greater Sudbury CMA	3520	93.0%	4.3%	2.7%
Northeast ER (excl. LFR 3520)	3521	96.1%	3.3%	0.6%
Peterborough CMA	3522	92.2%	5.1%	2.7%
Muskoka – Kawarthas ER (excl. LFR 3522)	3523	88.3%	4.5%	7.2%
Stratford – Bruce Peninsula ER	3524	91.8%	4.2%	4.0%
MTS Allstream				
Manitoba				
Winnipeg ER	4601	99.1%	0.8%	0.1%
Southwest ER and Parklands ER	4602	99.6%	0.4%	0.0%
North Central ER and South Central ER	4603	99.8%	0.0%	0.2%
Southeast ER	4604	100.0%	0.0%	0.0%
Interlake ER	4605	100.0%	0.0%	0.0%
North ER	4606	99.9%	0.0%	0.1%

Part B – Local market share by LFR (business)

LFR description	LFR no.	Business		
		Incumbents	Competitors	
			ILECs out-of-territory	Other
SaskTel				
Saskatchewan				
Regina – Moose Mountain ER	4701	99.9%	0.1%	0.0%
Saskatoon – Biggar ER	4702	99.8%	0.2%	0.0%
Swift Current – Moose Jaw ER	4703	99.8%	0.2%	0.0%
Yorkton – Melville ER	4704	99.7%	0.2%	0.1%
Northern ER and Prince Albert ER	4705	99.8%	0.1%	0.1%
TCC				
Quebec				
Mauricie ER (excl. LFR 2407), Capitale-Nationale ER and Chaudière – Appalaches ER	2414	99.6%	0.4%	0.0%
Bas-Saint-Laurent ER	2415	99.9%	0.1%	0.0%
Côte-Nord ER and Gaspésie – Îles-de-la-Madeleine ER	2416	99.8%	0.2%	0.0%
Alberta				
Edmonton ER	4801	75.5%	24.3%	0.2%
Calgary ER	4802	76.6%	17.7%	5.7%
Red Deer ER and Banff – Jasper – Rocky Mountain House ER	4803	90.3%	9.6%	0.1%
Wood Buffalo – Cold Lake ER	4804	97.3%	2.6%	0.1%
Athabasca – Grande Prairie – Peace River ER	4805	94.9%	5.0%	0.1%
Lethbridge – Medicine Hat ER	4806	89.3%	10.6%	0.1%
Camrose – Drumheller ER	4807	99.1%	0.8%	0.1%
British Columbia				
Victoria CMA	5901	88.9%	10.7%	0.4%
Vancouver Island and Coast ER (excl. LFR 5901)	5902	97.5%	2.4%	0.1%
Vancouver CMA	5903	77.5%	17.0%	5.5%
Abbotsford CMA	5904	94.1%	5.7%	0.2%
Lower Mainland – Southwest ER (excl. LFRs 5903 and 5904)	5905	98.1%	1.8%	0.1%
Thompson – Okanagan ER (excl. LFR 5910)	5906	89.6%	10.2%	0.2%
Kootenay ER	5907	97.5%	2.4%	0.1%
Cariboo ER	5908	96.0%	3.9%	0.1%
North Coast ER, Nechako ER and Northeast ER	5909	99.2%	0.7%	0.1%
Kelowna CMA	5910	88.8%	11.1%	0.1%
Télébec				
Quebec				
Outaouais ER and Laurentides ER (excl. LFRs 3517 and 2401)	2417	99.9%	0.0%	0.1%
Southeast Region (Montérégie ER, Estrie ER, Mauricie ER, Centre-du-Québec ER, Chaudière – Appalaches ER and Capitale-Nationale ER)	2418	96.8%	3.2%	0.0%
Gaspésie – Îles-de-la-Madeleine ER	2419	99.1%	0.3%	0.6%
Northwest Region (Abitibi – Témiscamingue ER, Nord-du-Québec ER and Côte-Nord ER)	2420	99.2%	0.7%	0.1%

Promising means for accelerated broadband deployment

It is well recognized that, among other benefits, access to broadband networks and services in rural and northern communities supports quality education and health care, job creation and, more generally, helps sustain the vitality of those communities. Consequently, closing the "digital divide" between urban and rural and remote areas of Canada by ensuring that broadband access is available in every Canadian community is an important issue for the federal government as well as other levels of government.

This appendix updates the promising means for accelerated broadband deployment.

a) Federal government broadband programs

One of the first major steps taken by the federal government to address the digital divide was the establishment of the National Broadband Task Force (the Task Force) in early 2001. The Task Force estimated, at that time, that the cost of providing broadband access in unserved Canadian communities ranged from close to $3 billion to slightly more than $4.5 billion, depending on the mix of technologies used. This cost was to be shared by public and private stakeholders.

The Task Force recommended two alternative government-supported approaches for the deployment of broadband services to communities where market-driven solutions are not feasible. The first recommended approach involves the provision of public support to a local demand aggregator or community champion responsible for delivering broadband services within currently unserved communities. The second recommended approach involves the provision of public support for the construction of broadband infrastructure, including transport facilities to a point of presence in an eligible community as well as distribution and access infrastructure within the community.

Two federal government programs were subsequently established to directly support broadband deployment in rural, remote, northern and First Nation communities, each of which followed one of these two recommended approaches.

The first of the programs is Industry Canada's Broadband for Rural and Northern Development Pilot Program (the Broadband Pilot Program).[102] Launched in September 2002, the Broadband Pilot Program was modeled on the above-noted local aggregator/community champion funding model. The federal government committed a total of $105 million to the Broadband Pilot Program which was scheduled to run for three years.

The Broadband Pilot Program funding is made available through a two-step process. In the first phase, eligible applicants submit proposals for "seed funding" to support the development of a business plan. In the second phase, funds are made available to successful applicants to implement their broadband service proposals.

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[102] Details of the Broadband Pilot Program are available at: http://broadband.gc.ca/.

Two funding application rounds were scheduled under the program. The first was initiated in the fall of 2002 and the second followed in the spring of 2003. In October 2003, successful first round applicants were announced. They received $44 million in funding under the program to support the implementation of broadband networks in 433 communities.[103] Subsequently, in May 2004, successful second round applicants were announced, who received $35 million in funding under the program to support the implementation of broadband networks in a further 451 communities. In November 2005, through program savings, the Broadband Pilot Program was able to fund an additional four projects.[104] In total, close to 900 rural, remote, northern and Aboriginal communities, of which over 140 are First Nations Reserves, have benefited from Broadband Pilot Program funding.

Of the total amount of funding available under the Broadband Pilot Program, roughly $80 million has been invested in support of broadband network and service deployment projects in rural, remote and northern communities. Moreover, partner contributions have more than matched the total amount invested by the federal government in the initiative at a ratio of 1.24 dollars for every dollar invested.

At this time, all existing funds under the Broadband Pilot Program are fully committed and no further application rounds are scheduled. However, the program continues until March 2007 in order to facilitate the completion of network builds.

The second of the two programs is the National Satellite Initiative (NSI).[105] Infrastructure Canada, Industry Canada and the Canadian Space Agency (CSA) jointly launched this program in October 2003. Administered by Industry Canada's Broadband Office, the NSI is based on the infrastructure support model recommended by the Task Force.

The NSI program was created to specifically address the high cost of broadband access for communities in the mid to far north and in isolated and remote areas of Canada where satellite is the only reasonable means of providing broadband access. NSI funding is provided to eligible communities through partnerships with provincial and territorial governments. Satellite capacity or a funding contribution, as the case may be, are made available for the deployment of broadband services via satellite to public institutions, such as schools and hospitals, as well as residences and businesses, in qualifying rural and remote communities.

The total funding committed under the NSI program is $155 million, with $85 million of this total coming from the Canadian Strategic Infrastructure Fund (CSIF). The balance is being provided by the CSA, which is contributing a $50 million satellite capacity service credit to the program, and Telesat Canada, which is contributing a further $20 million in satellite capacity.

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[103] Broadband communities are based on aggregations of dissemination areas as defined by Statistics Canada, with a naming convention based on postal codes.

[104] Industry Canada New Releases, details at: http://www.broadband.gc.ca/pub/media/news/index.html, three press releases from November 2005, one from March 26, 2006.

[105] Details of the NSI Program are available at: http://broadband.gc.ca/.

Ultimately, the goal of the NSI program is to lower the cost of broadband access for communities in the mid to far north.

Funding under the NSI program is being made available in three application rounds. The first, which was completed in April 2004, provided four successful applicants with satellite public benefit capacity valued at approximately $20 million over 15 years. The proposals to be implemented under this first round of funding will provide broadband services via satellite to benefit-public institutions in over 50 remote communities in British Columbia, Manitoba, Ontario and Quebec, 41 of which are First Nations and Inuit communities.

The deadline for second round NSI program applications was May 2005. Funding in this round will be drawn from the $85 million CSIF component of the program. In this case, a 50/50 cost-sharing formula applies where approximately 50% funding of successful broadband proposals would come from the CSIF and the balance would come from other funding sources such as provincial, territorial or First Nation governments, and/or third-party participants. Of the 29 applications under review, two projects have received funding and the remainder are still under review. The two funded projects are in northern Canada and they also received funding from the Broadband Pilot Program. The Northwest Territory project was provided with $7 million[106] in funding and Nunavut was provided $7.83 million.[107]

A third round under the NSI program is under way which pertains to the $50 million CSA component of the program, representing satellite capacity to be made available for eligible public and community-based institutions in the north and far north over the next 11 years. This component of the NSI program will not, however, cover the cost of the ground segment, gateway service, local access terminals or Internet service.

As outlined in previous Monitoring Reports, in addition to the Broadband Pilot Program and NSI programs, the federal government has introduced a variety of other initiatives, which directly and indirectly support the deployment of broadband networks and services across the country. These include Infrastructure Canada initiatives such as the CSIF, which, as already noted, supports the NSI program in part, as well as three other projects described in Provincial and Territorial Broadband Deployment Programs section and the Municipal Rural Infrastructure Program, as well as various regional development programs. There is also a range of Connecting Canadians initiatives such as the Community Access Program and SchoolNet, including First Nations SchoolNet, that may indirectly contribute to the deployment of broadband facilities. These programs currently sunset in September 2006. As well, the federal government is also a partner in CANARIE, Canada's advanced Internet development organization, whose mission is to accelerate the development of Canada's advanced Internet infrastructure and next-generation communications products, applications and services.

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106 Infrastructure Canada News Release, "Infrastructure Agreement Providing Greater Broadband Access in the Northwest Territories," 24 November 2005.

107 Infrastructure Canada News Release, "Nunavut Launches the 'Largest, Coolest Hot Spot on Earth'," 26 May 2005.

It should also be noted that in March 2006, the Telecommunications Policy Review Panel (the Panel)[108] established by Industry Canada submitted its report to the Minister of Industry (the Report).[109] The Panel had been asked to study and report on several key areas of importance to the industry. Specifically, the Panel had been asked to provide recommendations that would help ensure that all Canadians continue to have an appropriate level of access to modern telecommunications services, including access to high-speed networks. The Report recommends that, as a key part of its national information and communications technologies (ICT) strategy, the federal government should:

a) ensure that Canada remains a global leader in the deployment of broadband networks; and

b) immediately commence a program to ensure that affordable and reliable broadband services are available in all regions of Canada, including urban, rural and remote areas, by 2010 at the latest.

The Report is currently under review.

b) Provincial and territorial broadband deployment programs

Most provincial and territorial governments have also implemented programs aimed at supporting the deployment of broadband facilities in their respective territories. The Commission's 2003 Monitoring Report provided a detailed overview of provincial and territorial broadband programs in existence at that time, and subsequent Monitoring Reports provided an update on the status of these programs.

At this time, most provincial government broadband programs are at or near completion, with some exceptions, and all territorial broadband programs have long been completed. Broadband deployment in the north is now largely dependent on the federal government's Broadband Pilot and NSI programs.

One of the exceptions is British Columbia, where the Premier's Technology Council established NetWork BC last year to work with communities in the province and the private sector to bridge the digital divide in B.C. by 2006. The approach NetWork BC is following involves upgrading and extending the existing Shared Provincial Access Network (SPAN/BC) to accomplish this task. Under the plan, 366 communities[110] in the province were identified as a priority for broadband access, 151 of which currently do not have access to broadband services.

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[108] Telecommunications Policy Review Panel – Final Report 2006, March 2006.

[109] Industry Canada News Release, "Minister Emerson Appoints Members of Telecommunications Policy Review Panel," 11 April 2005.

[110] In this case, communities are defined as any location in the province with a place name and either a public school, library or healthcare facility.

In April 2005, the Province of B.C. and TELUS Communications Company announced that they had reached an agreement that would ensure that affordable, high-speed open access points of presence be brought to all of the targeted communities by the end of 2006.[111] It appears the costs of the expansion will be covered through the rates charged to the users (i.e. government and others) of the services provided over the network. In March 2006, a revised deployment schedule was released which would see the network completed by the second quarter of 2007. In addition to the deployment of broadband points of presence, Network BC funded $1 million, in 2 rounds, in community networking infrastructure grants to 56 communities to assist in the deployment of last mile infrastructure.[112]

In Alberta, the Alberta SuperNet is now fully operational throughout the province.[113] More than 420 Alberta communities are now ready to handle Internet service provider (ISP) traffic. In partnership with the government of Alberta, Bell Canada and Axia SuperNet Ltd. have constructed and connected 12,000 kilometres of fibre and wireless technology to make broadband service available in rural SuperNet communities. ISPs can now buy bandwidth at reasonable, uniform rates across the province.

In Saskatchewan, SaskTel is continuing the second phase of the province's CommunityNet program which provides broadband access to schools, libraries and provincial institutions in rural communities, farms and northern and remote areas of the province. The $34 million CommunityNet II initiative, announced in June 2004, will provide wireless high-speed Internet access to schools and libraries in a minimum of 71 communities in the province and their surrounding areas over the next several years.[114] In addition, the $9 million Northern Broadband Network initiative will see the expansion of high-speed Internet to 35 northern communities by the end of 2006. Almost half of the funding for this project comes from SaskTel and the balance from Industry Canada's Broadband Pilot Program and other federal western and northern regional development funds.[115]

No changes to existing broadband development programs have been announced in Ontario or Quebec. However, it should be noted that Ontario's Connecting Ontario: Broadband Regional Access (COBRA) program was suspended as of mid 2004 pending a review of the province's overall long term infrastructure support plans. In Quebec, the Villages branchés du Québec remains in operation, but the deadline for applications was November 2003.

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111 British Columbia News Release, "Broadband expansion spells opportunity for B.C.," 7 April 2005.

112 British Columbia News Release, "Grants bring broadband to 25 rural. B.C. communities," 24 February 2006 and "Grants help 30 B.C. communities bridge digital divide," 17 November 2005.

113 Alberta News Release, "Alberta SuperNet now operational throughout the province," 30 September 2005.

114 *CommunityNet I* provided broadband access to 366 Saskatchewan communities at a cost of $71M.

115 Saskatchewan News Release, "Northern Saskatchewan high-speed access funding completed," 7 January 2005.

Nevertheless, there are ongoing broadband projects being jointly funded by the provinces and the federal government. For instance, in the fall of 2004, Quebec and the federal government jointly announced a $13.8 million project to construct an underwater fibre optic link between Gaspésie and Îles-de-la-Madeleine to provide broadband access to schools and hospitals, among others, on the islands. The Government of Quebec provided half of the funding, while the balance will come from the CSIF.[116]

In addition, no changes to existing broadband initiatives were announced for any of the four Atlantic provinces. The Province of New Brunswick completed an agreement with the federal government and Aliant Telecom Inc. (Aliant Telecom) to finalize funding for a province-wide broadband network. The network build had initially been announced in late 2003. The total value of the build is $45 million, with the province contributing $12.5 million, the federal government (via the CSIF) contributing $16.5 million and Aliant Telecom the balance.[117] Once completed in 2006, broadband coverage was extended to 347 communities in New Brunswick, including all of the First Nations communities in the province.

In Newfoundland, the federal government, the provincial government and a private sector partner, Persona Communications Inc., announced a $30 million project to bring broadband access to 68 rural and remote schools and 103 communities. Both the federal and provincial governments are each providing $5 million and Persona Communications Inc. is providing the balance.[118]

The $1-billion Municipal Rural Infrastructure Fund has been structured to provide a balanced response to local infrastructure needs in urban and rural Canada, and ensure that all Canadians, whether they live in large, small or remote communities, will share in the benefits of infrastructure investments. Investment is eligible under various categories, of which broadband is one. Currently, one broadband project, Broadband Communications North, has received funding from the Broadband Pilot Program. It has also received additional funding of $2.8 million through the Canada-Manitoba Municipal Rural Infrastructure Fund.

In addition to the provincial initiatives, FedNor also announced $10 million to help communities and rural businesses without access to broadband by deploying broadband points of presence to communities, and by assisting rural businesses to find creative solutions to their broadband needs. FedNor approved funds in 2005-2006 towards the construction of 16 points of presence, and engaged four community information technology (IT) champions to develop plans for the establishment of viable broadband points of presence for northern Ontario communities which do not have a broadband backbone. FedNor and the IT champions also promoted deployment of ICT applications in health, education, justice, etc. that capture the socio-economic benefits of the new broadband infrastructure.

A summary of existing initiatives and investments is provided in Tables A.5.1 and A.5.2. As the tables indicate, over $847 million has been invested in broadband deployment initiatives.

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116 Infrastructure Canada News Release, "Government of Canada invests in fibre optic cables for Îles-de la-Madeleine,"3 September 2004.

117 New Brunswick News Release, "Province signs broadband agreement with federal government and Aliant," 21 March, 2005.

118 Infrastructure Canada News Release, "Agreement Brings Broadband Access to Rural and Remote Schools and Communities in Newfoundland and Labrador," 15 September 2005.

c) Proposed private sector initiatives

In 2002, in order to avoid an adverse impact on local competition, the Commission required each incumbent local exchange carrier (ILEC)[119] to create a deferral account in conjunction with the price cap regime.[120] ILECs were requested to place into those accounts amounts equal to the revenue reductions that would otherwise have resulted from an application of the price cap formula. On 16 February 2006, the Commission announced how funds from the deferral accounts will be used. Up to $650 million from the accounts will support initiatives to expand broadband services to rural and remote communities and improve accessibility of telecommunications services for persons with disabilities.[121] ILECs will be required to consult with provincial governments on proposed broadband initiatives prior to submitting their proposals to the Commission. This will ensure that their plans consider existing government initiatives and priorities. They will also be required to consult and work with the appropriate advocacy organizations for persons with disabilities. Detailed proposals relating to these initiatives were to be submitted by the ILECs with the Commission by 30 June 2006.[122]

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119 Bell Canada; MTS Allstream Inc.; Saskatchewan Telecommunications; TELUS Communications Inc. (now TELUS Communications Company (TCC)); Aliant Telecom Inc.; Société en commandite Télébec; and the former TELUS Communications (Québec) Inc., now part of TCC.

120 *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002.

121 *Disposition of funds in the deferral accounts*, Telecom Decision CRTC 2006-9, 16 February 2006.

122 Decision 2006-9. On 20 March 2006, two applications for leave to appeal Decision 2006-9 were filed with the Federal Court of Appeal by Bell Canada and by the Consumers Association of Canada and the National Anti-poverty Organization. The Consumers Association of Canada and the National Anti-poverty Organization are also seeking a stay of the decision pending the outcome of their appeal. On 16 May 2006, a petition to the Governor in Council to reconsider Decision 2006-9 was filed by Barrett Xplore Inc. On 8 June 2006, Barrett Xplore Inc. also filed with the Commission an application seeking a review and variance of Decision 2006-9 as well as a stay of the decision.

Table A.5.1
Summary of provincial government broadband deployment initiatives and investments (2002 to 2005)

Province/Territory	Funding ($M)	Description
Alberta	193	*SuperNet* project linking 422 communities across Alberta.
British Columbia	1*	*NetWork BC* project to expand SPAN/BC broadband network to 366 communities across BC. **No explicit contribution made by the provincial government*. In addition, *NetWork BC* provided funds to bring last mile solutions to 56 communities.
Manitoba	47	Upgrade and expansion of the Province's provincial broadband network to reach an additional 85 communities.
New Brunswick	12.5	Joint project with federal government and Aliant Telecom Inc. to expand broadband to most communities in province.
Newfoundland and Labrador	5	Private/public initiative focused on educational institutions across the province.
Nova Scotia	1	*Information Economy Initiative* focused on educational institutions across the province (Aliant Telecom Inc. contributed $5M to the project).
Ontario	2.4	COBRA aimed at funding the construction in rural and northern communities in Ontario – suspended as of mid 2004.
Quebec	150	*Villages branchés du Québec* aimed at linking educational and municipal institutions to provincial government's broadband network.
Saskatchewan	117	*Community Net I & II* and *Northern Broadband Network* initiatives providing broadband services in well over 450 communities.
Yukon	17	*Connect Yukon* initiatives provided broadband availability in 11 communities.
Total	545.9	

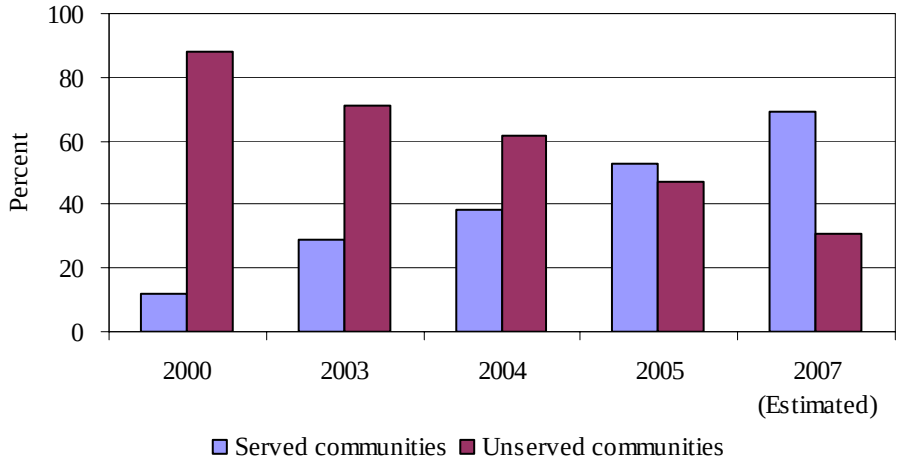
Table A.5.2
Summary of programs for broadband deployment initiatives and investments

Programs	Funding ($M)	Description
Broadband for Rural and Northern Development Pilot Program	105	The Program brings broadband or high capacity Internet to unserved rural, remote and Aboriginal communities.
National Satellite Initiative	155	NSI created to address the high cost of broadband access for communities in the mid to far north and in isolated and remote areas of Canada.
Canadian Strategic Infrastructure Fund	28.4	Investments are directed to large-scale projects of national and regional significance. Connectivity is eligible for funding.
Municipal Rural Infrastructure Fund	2.8	The fund has been structured to provide a balanced response to local infrastructure needs in urban and rural Canada. Connectivity is eligible for funding.
FedNor	10	Assist communities and rural businesses without access to broadband by deploying broadband points of presence to communities, and by assisting rural businesses to find creative solutions to their broadband needs.
Total	301.2	

d) Progress under existing initiatives

Investments made through the Broadband Pilot Program are expected to extend broadband access to approximately 900 rural, northern and Aboriginal communities by year-end 2006. Moreover, it is estimated that complementary investments made through the NSI and CSIF, as well as provincial and territorial broadband initiatives, including private sector participation, should extend broadband access to approximately 600 previously unserved communities by year-end 2007. In total, roughly 1,500 otherwise unserved communities will have broadband access by the end of 2007 as a result of these various initiatives.

Figure A.5.1
Communities with and without broadband access



Source: Industry Canada

Notwithstanding the results achieved by the various broadband deployment initiatives, it is estimated that approximately 2,000 communities, or over 30%, will remain unserved as of year-end 2007. Consequently, the existing government broadband programs have proved successful in significantly reducing the number of communities in Canada without broadband access to the Internet.