CRTC Telecommunications Monitoring Report

Status of Competition in Canadian Telecommunications Markets

Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services

July 2007

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
K1A 0N2

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

This publication is available electronically on our website at http://www.crtc.gc.ca

This publication can be made available in alternative format upon request.

Ce document est également disponible en français.

Catalogue No. BC92-57/2007E-PDF
ISBN # 978-0-662-46139-5

Acknowledgements

The Canadian Radio-television and Telecommunications Commission (the Commission) wishes to thank all service providers that completed the CRTC data collection forms, without which this report would not have been possible. The Commission would also like to acknowledge the assistance provided by Industry Canada in the analysis of broadband deployment as it related to the rural communities in Canada and to Statistics Canada for the various supplementary data used in this report.

Executive summary

Telecommunications is an important component in the social and economic fabric of Canada. It is universally available with over 98% of Canadian households subscribing to landline and/or mobile phone service. In 2006 the Canadian telecommunications service industry continued to grow with mobile phone and Internet services driving the growth. The number of mobile phone subscribers increased 10% in 2006. Canadians continued to embrace technologies including broadband access to the Internet as the number of residential subscribers to high-speed Internet services increased by 16%.

The competitors of the incumbent telephone companies which include incumbent telephone companies when operating outside of their traditional territories, continued to gain market share primarily due to the dramatic growth in local competition. Competitors had strong growth in their number of local lines; both in the residential market, essentially from cable companies,[1] where competitor lines increased 89% and, to a lesser extent, in the business market, where competitor lines increased 13%.

In December 2006, the Governor in Council issued a Policy Direction to the Commission that, among other things, directed the Commission to rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives. At that time the Commission estimated that 30% of telecommunications revenues were subject to economic regulation. With the issuance of the Forbearance Order[2] that established a framework for forbearing from regulating local exchange service and the Commission's High-Speed Digital Service Decision[3] there are now frameworks in-place for forbearing from regulating the remaining major regulated retail services. With these frameworks in-place, the percent of telecommunications revenues subject to economic regulation is expected to decline significantly in the coming year.

GROWTH

Total telecommunications service revenues were $36.1 billion in 2006, an increase of $1.6 billion or 4.5% over the previous year. The vast majority of this increase is directly attributable to the 15% and 18% revenue growth of mobile phone and high-speed Internet services, respectively.

To a lesser extent, overall industry revenues continued to benefit from the revenue growth of the newer data services that meet business customer requirements for increased speed, functionality and cost efficiency. These services now represent over 60% of the data protocol revenues, with data services such as Ethernet and Internet Protocol (IP) based virtual private networks (VPNs) having revenue growth of 29% and 73%, respectively.

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1 Cable broadcasting distribution undertakings (BDUs).

2 *Order varying Telecom Decision CRTC 2006-15*, Order in Council P.C. 2007-0532, issued 4 April 2007 (the Forbearance Order).

3 *Framework for forbearance from regulation of high-speed intra-exchange digital network access services*, Telecom Decision CRTC 2007-35, 25 May 2007 (the HSDS Decision).

The telecommunications industry's earnings before interest, taxes, depreciation and amortization (EBITDA) increased from $12.4 billion to $13.1 billion, a $0.7 billion or 5% increase. The increase was due to the mobile phone service providers, whose EBITDA increased from $4.4 billion in 2005 to $5.6 billion in 2006, a $1.2 billion or 27% increase. Capital expenditures increased from $5.6 billion in 2005 to $6.9 billion in 2006, a $1.3 billion or 24% increase.

BROADBAND

Among the G8 group of countries in 2006, Canada had the highest broadband subscription rate with 60% of households subscribing to high-speed Internet service, as over 93% of Canadian households were able to subscribe to broadband service. It's important to note that 87% of Canadian households have a choice of technology and service provider for the provision of broadband service. Another 10% of Canadian households subscribed to dial-up Internet service. This positions Canada well to take advantage of the services, opportunities and benefits that the Internet has to offer.

COMPETITION

The competitors' share of total telecommunications revenues, including landline and mobile phone service revenues, continued to increase and reached 38% or $13.7 billion in 2006. The competitors' market share included the incumbent telephone companies' activities when operating outside of their traditional territories (11%), other facilities-based competitors such as cable companies and hydro utility companies with telecommunications activities (22%) and resellers (5%).

Traditionally there have been two separate and independent landline networks in Canada that accessed Canadian homes; the local telephone network and the cable distribution network. The major cable companies have evolved their networks to deliver not only advanced cable services but telecommunications services as well, such as Internet access service and more recently local telephone service. These companies are major providers of high-speed Internet service, as they had approximately 54% of high-speed residential Internet subscribers in 2006. In 2005, they started to provide local telephone service generally over a managed network and by the end of 2006, they captured almost 12% of local residential lines to become major competitors of the incumbent telephone companies in residential markets.

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1.0 Introduction

1.1 Purpose of the report

The Canadian Radio-television and Telecommunications Commission (the Commission) has found that monitoring reports are useful in helping it fulfill its mandate under the *Telecommunications Act* (the Act). Monitoring reports[4] 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.

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's monitoring activity is not limited to the data captured by its data collection activities but includes other data contained in, but not limited to, company financial statements, industry reports and statistical reports compiled by other government departments and agencies and international organizations.

The data from international organizations allows the Commission to assess how the Canadian telecommunications service industry is performing relative to other countries. In many instances, the issues addressed by foreign telecommunications regulators are similar to those in Canada.

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." In December 2006, the Governor in Council issued a Policy Direction[5] to the Commission requiring it to rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives.

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.

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4 *Monitoring the Canadian telecommunications industry*, Telecom Public Notice CRTC 2005-15, 18 October 2005 (Public Notice 2005-15).

5 *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives* (the Policy Direction).

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. International comparisons or analysis is based on data obtained from recognized international organizations such as the Organisation for Economic Co-operation and Development (OECD) as well as from the telecommunications regulatory agencies in other countries such as the Federal Communications Commission (FCC) in the United States and Ofcom in the United Kingdom.

In order to minimize response burden on the industry, make more efficient use of resources and promote coherence of the Canadian statistical system, the Commission and Statistics Canada have been working to eliminate overlap in telecommunication's industry data collections and to employ common concepts and definitions where possible. Statistics Canada streamlined its annual survey of telecommunications by removing all questions concerning network infrastructure, client base and traffic. Statistics Canada will rely instead on similar information collected by the Commission. More recently it redesigned its quarterly survey of telecommunications in order to align it more closely on the concepts of the Commission's annual data collection. The medium term objective is to terminate Statistics Canada's Annual Survey of Telecommunications and Annual Survey of Internet Services Providers by integrating some of the remaining questions into the CRTC data collection, in particular those questions that collect data essential to the production of national and provincial economic accounts.

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 and analysis 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. The status of local forbearance applications in residential and business exchanges is provided in Appendix 4 for major centres as of 1 June 2007. A review of the status of promising means for accelerated 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.[6] 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.[7]

The Policy Direction to the Commission came into effect on 14 December 2006. The Policy Direction requires, among other things, that the Commission rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives and when relying on regulation, use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives.

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, where necessary, that impose the minimum regulatory burden possible.

In Decision 94-19,[8] 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. More recently, frameworks have been established for the forbearance from regulating local services. The Forbearance Order[9] established a framework for forbearing from regulating local exchange service and the High-Speed Digital Service (HSDS) in

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

7 Section 34 of the Act.

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

9 *Order varying Telecom Decision CRTC 2006-15*, Order in Council P.C. 2007-0532, issued 4 April 2007 (the Forbearance Order).

Decision 2007-35[10] established a framework for forbearing from regulating high-speed intra-exchange digitial network access (high-speed DNA) services and metropolitan wavelength services (MWS). In this decision, the Commission also forbore from regulating Bell Canada's high-speed DNA services in a number of wire centres and from regulating the company's MWS in the Toronto, Montreal and Ottawa census metropolitan areas.

While the Commission has forborne, and continues to forbear, from regulating a growing number of services, the Commission regulates an increasingly smaller percentage of telecommunications service revenues where competition has not been found to be sufficient to protect the interests of users. In the case of large incumbent telecommunications service providers (TSPs) [including Bell Aliant Regional Communications, Limited Partnership (Bell Aliant), Bell Canada, MTS Allstream Inc. (MTS Allstream), Saskatchewan Telecommunications (SaskTel) and TELUS Communications Company (TCC)], these services currently 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. The regulation of these services for these companies has shifted away from an earnings-based to a price level-based form of regulation.[11] The percentage of revenues that are subject to regulation is expected to decline significantly in the coming 18 months as the large incumbent TSPs have filed applications for the Commission to forbear from regulating local exchange service in 430 exchanges representing 423 residential and 327 business markets and pursuant to the HSDS forbearance framework, the Commission will consider such applications for forbearance from other incumbent TSPs.

Non-forborne telecommunications services provided by Société en commandite Télébec (Télébec) as well as those provided by TELUS Communications (Québec) Inc. (TCQ) (now part of TCC) were made subject to price cap regulation as of August 2002.[12]

The price cap regimes were recently reviewed and modified[13] and do not contain a fixed review date for the regime. Now a single price cap regime encompasses all of these companies except Télébec.[14]

Non-forborne services provided by small incumbent telephone companies were made subject to a simplified form of price regulation effective in January 2002.[15] Non-forborne services provided by Northwestel Inc. (Northwestel) were made subject to price cap regulation in February 2007.[16]

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10 *Framework for forbearance from regulation of high-speed intra-exchange digital network access services*, Telecom Decision CRTC 2007-35, 25 May 2007 (the HSDS Decision).

11 The price cap regime was established for all these companies, except SaskTel, in *Price cap regulation and related issues*, Telecom Decision CRTC 97-9, 1 May 1997 for a four year period ending in 2002. In 2002, price cap regulation was reviewed and modified in *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002 as amended by Telecom Decision CRTC 2002-34-1, 15 July 2002 (Decision 2002-34). This regime which included SaskTel, came into effect in June 2002.

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

13 *Price cap framework for large incumbent local exchange carriers*, Telecom Decision CRTC 2007-27, 30 April 2007 (Decision 2007-27).

14 In Decision 2007-27, the Commission directed Télébec to show cause, by 30 May 2007, why the determinations made in this decision should not apply to it.

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

16 *Price cap regulation for Northwestel Inc.*, Telecom Decision CRTC 2007-5, 2 February 2007.

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[17] 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. It is noted that an increasing number of applications scheduled for an expedited procedure are being withdrawn as the parties resolve their issues, sometimes with the assistance of Commission staff, prior to the expedited hearing. As parties are opting to use less formal staff-assisted dispute resolution, fewer expedited procedures have taken place in 2006 in comparison with previous years;

4) expedited processes for retail tariff filings. The Commission recognizes the need for timely disposition of tariff applications by incumbent TSPs for new or amended services. Initiatives were taken to streamline and expedite the processing of retail tariff filings[18] and the processing of applications concerning the withdrawal of services for which new technologies are employed and for which there are replacement services.[19]

5) approval of price ranges within which incumbent TSPs can offer certain services such as local exchange and related services[20] as well as voice over Internet Protocol (VoIP) related services. This permits the incumbent TSPs 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,[21] among other things, the Commission set out the details of the framework for forbearance from the regulation of local exchange services including the local forbearance criteria such as a 25% market share loss threshold. The Commission determined that residential local exchange services and business local exchange services are in different relevant markets for the purpose of the local forbearance framework. The Commission also outlined the scope of forbearance to be granted under the local forbearance framework. The Commission determined it to be

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

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

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

20 *Rate ranges for services other than voice over Internet Protocol services*, Telecom Decision CRTC 2006-75, 23 November 2006 and *Follow-up to Decision 2006-75 – Range-within-a-range proposal*, Telecom Decision CRTC 2007-36, 25 May 2007 (Decision 2007-36).

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

appropriate to retain only those powers and duties that are strictly necessary to protect the interests of customers, particularly uncontested and vulnerable customers, and to further competition. The Commission also determined that those powers and duties that relate strictly to economic regulation should be removed in a forborne environment. The Commission adopted certain transitional measures to aid in the development of sustainable local competition.

In *Order varying Telecom Decision CRTC 2006-15*, Order in Council P.C. 2007-0532, issued 4 April 2007 (the Forbearance Order), the Governor in Council, among other things, replaced the Commission's market share loss criterion with one that emphasizes the presence of competitive TSPs and it replaced the geographic regions by incumbent TSP exchange boundaries. The Forbearance Order also modified the competitor quality of service indicators for forbearance purposes and eliminated the winback rule which determined when an incumbent telephone company could contact customers that were switching to their competitors and removed the competitive safeguards for promotions which addressed issues such as the availability, timing, duration and limitations of the promotion as well as the price of the service promoted.

In an effort to deal with local forbearance applications as expeditiously and fairly as possible, the Commission issued *Timelines for submissions regarding local forbearance applications*, Telecom Circular CRTC 2007-13, 19 April 2007, to set out the timelines for submissions regarding local forbearance applications. In addition, the Commission also issued letters to the incumbent and alternative TSPs to notify them of the type of data and level of detail to be provided in local forbearance applications or proceedings.

With greater reliance on market forces, the monitoring function will continue to be a valuable tool to assess the extent to which the telecommunications policy objectives as set out in section 7 of the Act are being met.

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 2001 to 2006 period.[22]

The penetration rate of wireline and/or wireless services remained relatively constant over the 2001 to 2006 period, at approximately 98.6% of households. Wireline penetration gradually declined over this period from 97.4% to 93.6% of households. In contrast, over this period, wireless penetration increased from 47.6% to 66.8% of households in 2006. The penetration rates in Table 2.3.1 indicate that 5.0% of Canadian households had only wireless service in 2006, up more than four-fold from 1.2% in 2001.

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[22] June 2007 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)
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	94.0	n/a	98.8	4.8
2006	93.6	66.8	98.6	5.0

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)[23] as established by the Commission, and to continue to expand local telephone service in Canada, in 1999 the incumbent local exchange carriers (ILECs) or incumbent TSPs were directed to file service improvement plans (SIPs)[24] 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.[25] 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.[26] Under the contribution regime, all TSPs 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 incumbent TSPs' deferral accounts.[27]

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23 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.

24 Decision 99-16.

25 *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002 as amended by Telecom Decision CRTC 2002-34-1, 15 July 2002 (Decision 2002-34).

26 Decision 2002-34 and *Implementation of price regulation for Télébec and TELUS Québec*, Telecom Decision CRTC 2002-43 (Decision 2002-43).

27 Decision 2002-34.

Table 2.3.2 provides the cumulative results of the SIP program since 2002. During this time, the Commission reviewed and approved SIPs from both the large and small incumbent TSPs involving both unserved and underserved[28] premises. SIPs have improved the level of local service. The impact of the SIPs is demonstrated by the fact that 19,951 households identified as unserved, as well as 37,626 households identified as underserved, could subscribe to local service by the end of 2006 that met the BSO.

Table 2.3.2
Service improvement plans – Status

	2002	2006
Previously:		
Unserved premises (now served)	742	19,951
Underserved premises (now with basic service)	14,219	37,626
Number of communities with service provided or improved to basic service under SIPs	221	2,118

Source: ILECs' approved SIP filings for 2006 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 2006. 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.[29]

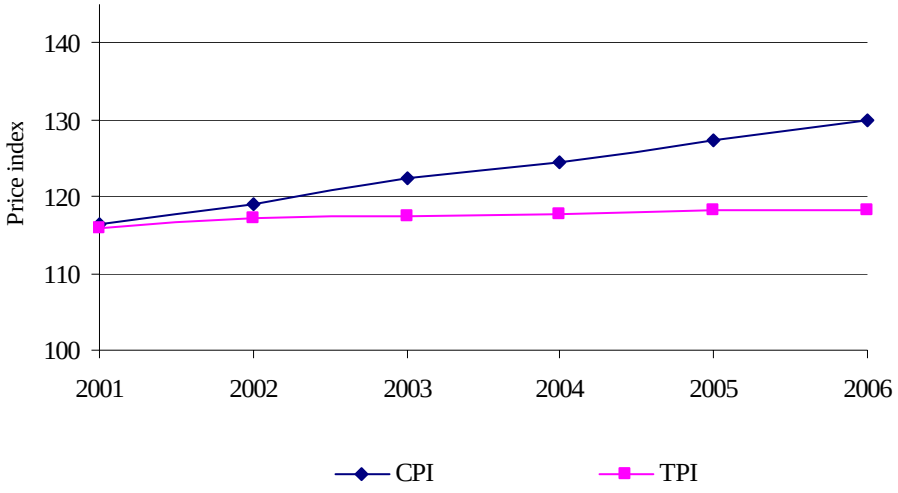
Throughout the 2001 to 2006 period, the TPI remained below the CPI. In 2001, the rates for basic residential local service increased in most urban and rural areas, consistent with the first price cap regime established by the Commission's 1998 price cap decision[30] which applied to the large incumbent TSPs (except for SaskTel, Télébec and TCQ) and generally limited price increases to the rate of inflation less a productivity factor of 4.5%.

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

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

[30] *Implementation of price cap regulation and related issues*, Telecom Decision CRTC 98-2, 5 March 1998 as amended by Telecom Decision CRTC 98-2-1, 20 March 1998.

Figure 2.3.1
TPI v. CPI



Source: Statistics Canada

In 2002, the price cap regime was modified with various changes made to the service baskets and to the pricing constraints applicable to residential local exchange and optional services.[31] 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 2006, the incumbent TSPs did not increase basic residential local rates. Under the new price cap regime[32] basic residential service rates in urban areas are capped at their existing levels and in rural areas not permitted to increase by any more than the lesser of the annual rate of inflation or 5% on an annual basis.

[31] Decision 2002-34.
[32] Decision 2007-27.

3.0 Overview of the telecommunications service industry

3.1 Market providers

The Canadian 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[33] 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 12.4 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 local and access, Internet or other telecommunications services.

The Commission maintains registration lists[34] of service providers that either operate or propose to operate in the Canadian telecommunications industry. Excluding the competitive pay telephone service providers, in 2006, these lists contained the names of over 1,300 service providers which provided a multitude of services including local and access, long distance, Internet and broadband, data and private line, and wireless services.

As competition evolved, incumbent telecommunications service providers (incumbent TSPs) were not only competing within their traditional operating territory with the new entrants but expanded their operations outside of their territory to compete with the incumbent TSP as well as the other new entrants in that territory.

Classification structure

The following classification and sub-classification of TSPs is used in this report:

1) Incumbent TSPs

The incumbent TSP[35] category refers to the traditional telephone companies, who provided telecommunication services before the introduction of competition in the telecommunications service industry. They were the sole providers of the service within their geographic territory. The category also includes their affiliates. The category is further subdivided into:

a) Large incumbent TSPs
b) Small incumbent TSPs

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33 Source: Statistics Canada.

34 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.

35 In previous telecommunications monitoring reports, this category was referred to as incumbents.

The incumbent TSP category encompasses the incumbents' operations within their traditional operating territories and excludes their out-of-territory operations. When reference is made to their traditional operating territories, the notation incumbent TSPs (excluding out-of-territory) may be used. Incumbent TSP (out-of-territory) will be used to denote their out-of-territory operations.

2) Alternative telecommunications service providers (alternative TSPs)

The alternative TSP[36] category refers to the other TSPs who started to offer telecommunications services as a result of the introduction of competition in the industry. This category includes both the new entrants and the incumbent TSPs operating outside their traditional geographic area. Alternative TSPs are segregated as follows:

a) Facilities-based alternative TSPs

Facilities-based alternative TSPs subcategory includes all alternative TSPs that own and operate a telecommunications network. This category is further subdivided into:

i) Incumbent TSPs (out-of-territory); and
ii) Facilities-based non-incumbent TSPs
- Cable BDUs
- Utility telcos and other carriers

b) Non facilities-based TSPs or resellers

The non facilities-based TSPs or resellers category refers to TSPs that do not generally own or operate any transmission equipment. They generally purchase telecommunications services from other carriers at wholesale rates for the purpose of either creating their own network to offer service and/or directly reselling the service.

Appendix 2 provides additional details on the classification of the TSPs.

Each of the reporting service providers was assigned to one of the above-noted categories. Certain categories of alternative TSPs were combined, as disaggregated reporting could result 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 TSPs and those affiliated with the BDUs are categorized as facilities-based non-incumbent TSPs cable BDUs.

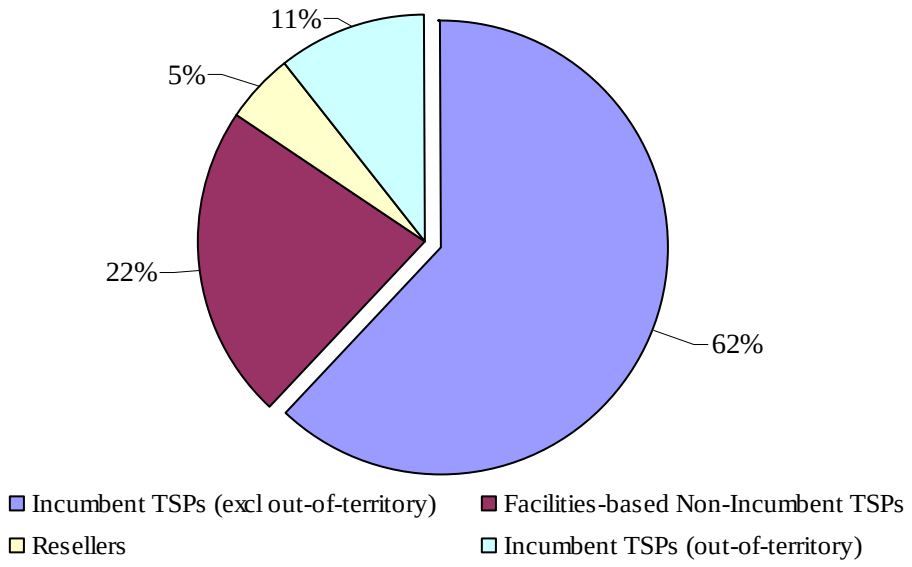
[36] In previous telecommunications monitoring reports, this category was referred to as competitors.

3.2 Telecommunications service providers and the markets

Total retail telecommunications revenues in 2006 were approximately $32.7 billion, up 3.8% from 2005. Of these revenues, $12.2 billion or 37% related to wireless services and $20.5 billion or 63% related to wireline services. Of these wireline revenues, approximately $10.9 billion or 53% related to residential services and $9.6 billion or 47% to business.[37]

As displayed in Figure 3.2.1, the incumbent TSPs (excluding out-of-territory) had approximately 62% of the total wireline and wireless revenues in 2006. When operating outside of their traditional operating territory, they captured an additional 11% of the telecommunications revenues, whereas the facilities-based non-incumbent TSPs had approximately 22% and the resellers had 5%.

Figure 3.2.1
Total telecommunications revenue market share by type of service provider
2006



Source: CRTC data collection

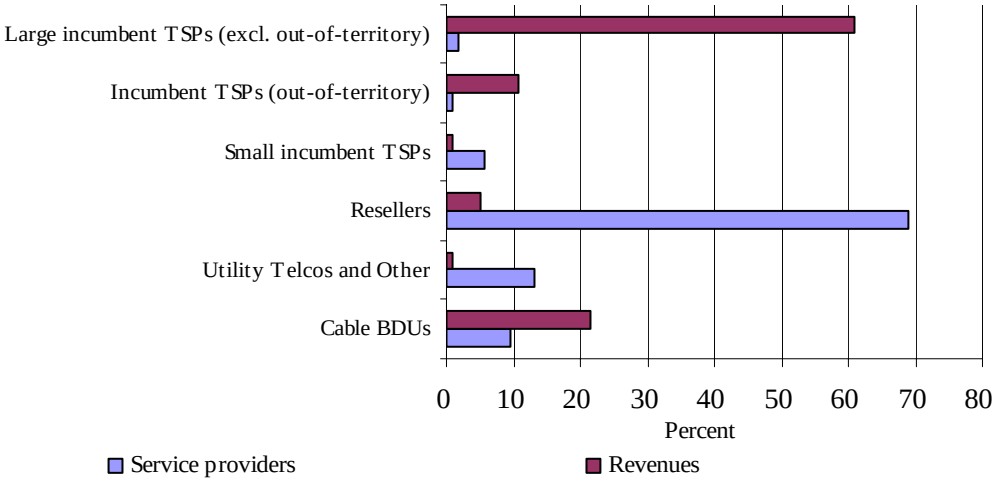
As displayed in Figure 3.2.2, approximately 69% of the TSPs were resellers in 2006, representing the single largest group of TSPs who operate or propose to operate in the Canadian telecommunications industry. Although the resellers represented 69% of the service providers, as a group they captured approximately 4% of the revenues in 2006.

The large incumbent TSPs, excluding their out-of-territory operations, representing less than 2% of the total number of service providers, captured approximately 61% of the revenues making them the largest group with respect to revenues.

[37] Source: CRTC data collection.

The cable BDUs were the second largest group, both in terms of number of service providers and revenues, accounting for approximately 10% of the number of service providers and 21% of the revenues. Over 80% of cable BDUs' telecommunications revenues were related to Internet and wireless services.

Figure 3.2.2
Distribution of telecommunications revenues and number of service providers by type of service provider (2006)



Source : CRTC telecommunications lists and data collection

A summary of total telecommunications service revenues in aggregate and by type of service provider for the four-year period 2003 to 2006 is provided in Table 3.2.1 below.[38] As this table demonstrates, excluding their out-of-territory operations, the incumbent TSPs' share of the industry's total telecommunications revenues steadily decreased from 69% in 2003 to 62% in 2006. Excluding their out-of-territory operations, incumbent TSP revenues in 2006 increased by approximately 1% to $22.3 billion; whereas the facilities-based TSP revenues increased 14% to $11.9 billion, mainly due to the cable BDUs' 17% revenue growth and the resellers had a 1% increase in their revenues.

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

Table 3.2.1
Total telecommunications revenues
by type of service provider
($ millions)

	2003		2004		2005		2006
Incumbent TSPs							
Large incumbent TSPs	23,483.9		25,410.2		25,617.3		25,822.8
Small incumbent TSPs	311.9		369.0		367.7		372.5
Subtotal	23,795.8		25,779.2		25,985.0		26,195.4
Less: Incumbent TSPs (out-of-territory)	1,679.9		3,168.1		3,721.6		3,849.0
Incumbent TSPs (excl out-of-territory)	22,115.9		22,611.1		22,263.4		22,346.4
Percent of total	69%	#	68%		65%		62%
Alternative TSPs							
Facilities-based alternative TSPs							
Incumbent TSPs (out-of-territory)	1,679.9		3,168.1		3,721.6		3,849.0
Cable BDUs	3,458.9	#	4,902.8	#	6,583.5	#	7,731.9
Utility telcos and other carriers	3,273.8		1,097.3		152.5		343.6
Subtotal alternative TSPs	8,412.6	#	9,168.2	#	10,457.6	#	11,924.5
Resellers	1,436.2	#	1,681.6	#	1,788.5		1,798.4
Total facilities-based alternative TSPs and resellers	9,848.8	#	10,849.8	#	12,246.1	#	13,722.9
Percent of total	31%	#	32%		35%	#	38%
Total	31,964.7	#	33,460.9	#	34,509.5	#	36,069.3

Source: CRTC data collection

With respect to wireline services, as displayed in Table 3.2.2, incumbent TSPs, excluding their out-of-territory operations, had between 65% and 71% of the revenues in the residential, business and wholesale markets. When operating outside their traditional operating territory, the incumbents TSPs focused on the business and wholesale markets where they captured 13% and 19% of the revenues, respectively.

Table 3.2.2
Wireline telecommunications revenue market share
by type of service provider (2006)
(percent)

	Retail			Wholesale	Total
	Residential	Business	Total		
Incumbent TSPs (excl out-of-territory)	71.0	71.3	71.1	64.9	70.0
Alternative TSPs					
Incumbent TSPs (out-of-territory)	0.2	12.7	6.1	18.6	8.0
Facilities-based non-incumbent TSPs	21.1	8.5	15.2	11.0	15.0
Resellers	7.7	7.6	7.7	5.5	7.0
Alternative TSPs subtotal	29.0	28.8	29.0	35.1	30.0

Source: CRTC data collection

3.3 Canada and the world

As displayed in Table 3.3.1, when compared to the United States, the United Kingdom, France, Germany, Italy and Japan, in 2005, Canada generally ranked toward the top of the group except for mobile connections. Canada ranked number two with respect to the number of local lines on a per 100 population basis and telecommunications revenues on a per capita basis. Only Japan and Germany had higher telecommunications lines and revenues on a per population and capita basis respectively. These two indicators were a reflection of the importance of telecommunications to Canadians. As previously noted, over 98% of Canadian households subscribed to wireline and/or wireless services.

Table 3.3.1
International Indicators
2005

	Canada	United States	United Kingdom	France	Germany	Italy	Japan
Telecom revenue per capita	1,070	939	904	785	853	961	1,303
Local lines per 100 population	59.8	59.6	56.2	54.6	65.8	45.8	50.8
Mobile connections per 100 population	52.7	70.0	108.0	77.0	96.0	123.0	71.0
Broadband connections per 100 households	51.4	38.0	39.3	37.5	28.3	30.9	43.9
DSL as a % of broadband connections	46.1	42.2	73.3	94.0	97.2	94.8	64.8

In 2005, among this group of countries, Canada had the highest broadband penetration rate at 51%. Furthermore, 46% of the broadband connections were DSL. This reflects the fact that there was choice of facilities based players and technology for the provision of broadband in Canada. With respect to mobile connections all of these countries had higher mobile connections rates than Canada as measured on a percent of population basis.

Table 3.3.2 displays the number of the major incumbent and alternative TSPs, revenues and the number of local line for the countries listed in Table 3.3.1. The number of incumbent TSP lines or connections as a percent of total for Canada was comparable to that of the other countries.

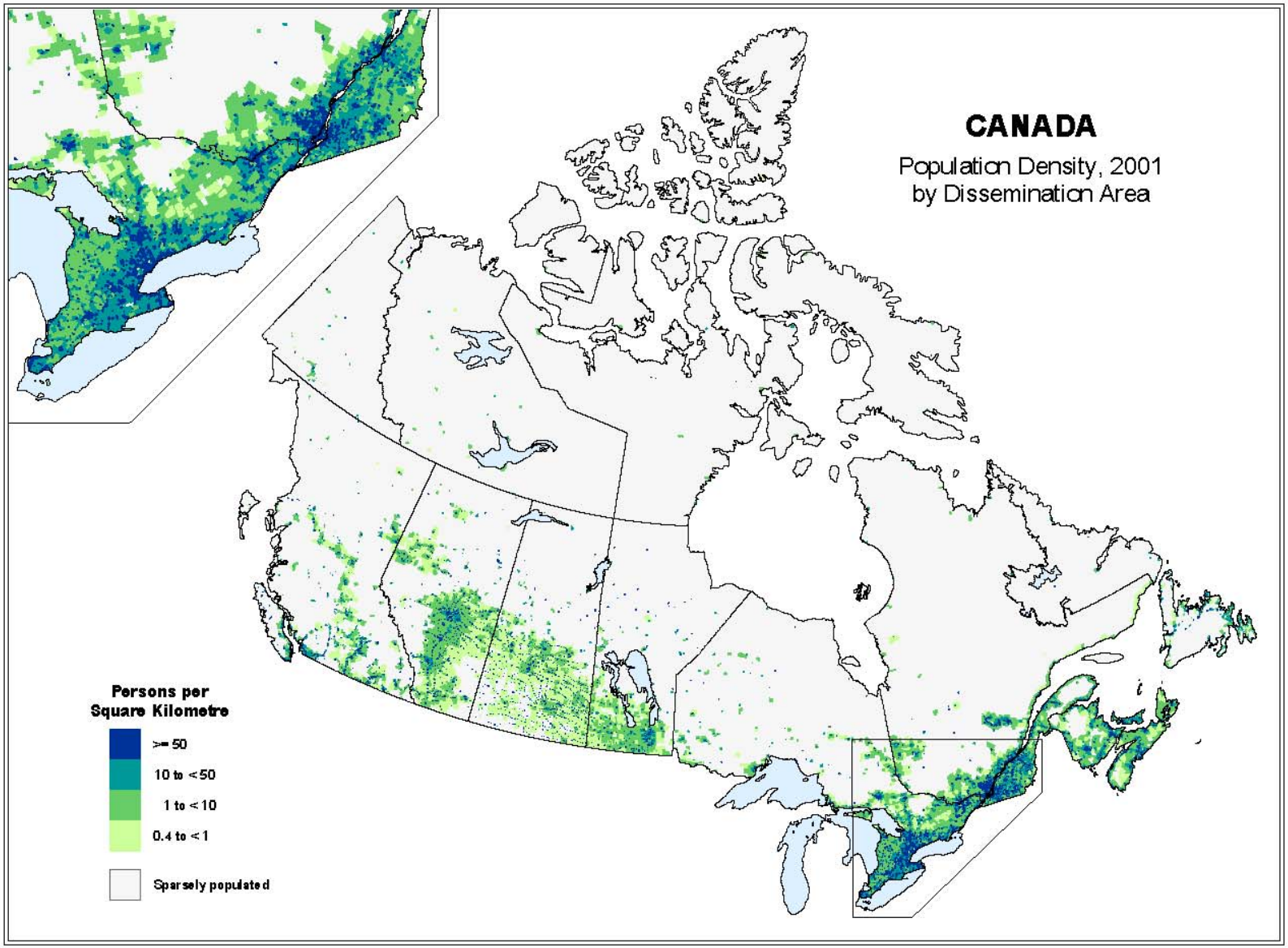
Table 3.3.2
International Telecommunications - Industry Comparison
2005

	Canada	United States	United Kingdom	France	Germany	Italy	Japan
Number of:							
Major incumbent TSPs	5	4	1	1	1	1	1
Major alternative TSPs	5	3	2	2	2	2	2
Telecommunications revenues ($ billions)	35	279	55	48	70	56	166
Lines/connections (millions)							
Major incumbent TSPs	17.3	168.0	25.9	33.7	35.2	31.2	46.9
Alternative TSPs	2.7	34.0	4.4	4.7	6.3	4.8	11.8
Total	20.0	202.0	30.3	38.4	41.5	36.0	58.7
Major incumbent TSP lines as a percent of total	87%	83%	85%	88%	85%	87%	80%
Population density (Persons per sq. km)	3	32	244	111	232	193	339
Number of regulatory bodies	1	51	1	1	1	1	3

Source: ITU, OECD, DBRS (US Telco Study, March 2006) and CRTC data collection

Notes:
a) US data reflects 2004
b) Major Canadian incumbent TSPs include: Bell Canada (including wireless affiliates), TCC, MTS Allstream, SaskTel and Bell Aliant
c) Major Canadian alternative TSPs include: Rogers (including wireless affiliates), Shaw, Primus, Videotron, and Cogeco

The operating territory of TSPs in Canada is significantly different from that in other countries. As displayed in the following population density map of Canada, Canada is a sparsely populated country with a population density of approximately 3 persons per square km. This is the lowest population density rate among the countries listed in Table 3.3.2 which range from 32 persons per square km in the United States to 339 in Japan.

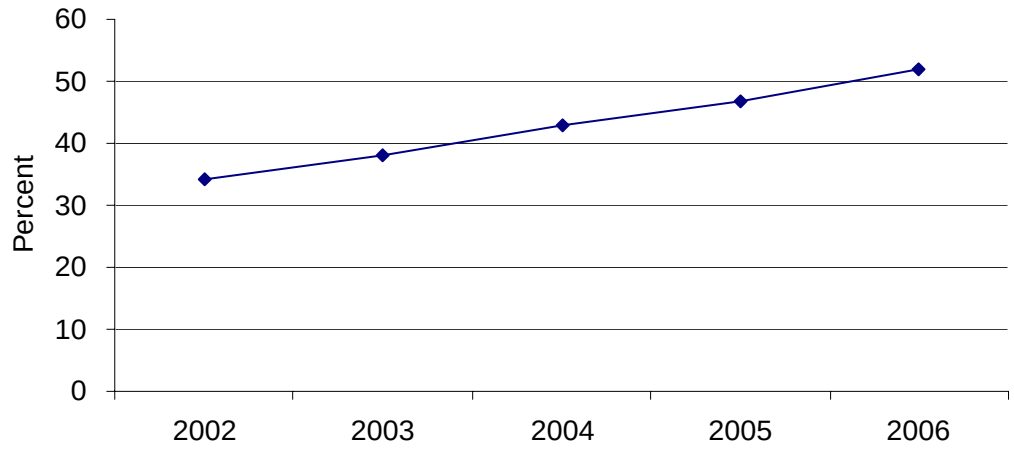

CANADA
Population Density, 2001
by Dissemination Area
Persons per
Square Kilometre
>= 50
10 to < 50
1 to < 10
0.4 to < 1
Sparsely populated
Statistics Canada
Statistique Canada
Source: 2001 Census of Canada. Produced by the Geography Division, Statistics Canada, 2002.
Canada

3.4 Industry evolution

The impact of technology on telecommunications services is evident in the rapid evolution of data services. Over a 30 year period, data services have evolved from the introduction of X.25 in 1976 to today's Internet Protocol (IP)-based services that have impacted the delivery or platform for both data and voice telecommunications services.

Non-legacy services such as Ethernet, Virtual Private Network (VPN) IP-VPN, Internet and wireless service grew at an annual rate of approximately 15% since 2002 whereas legacy service revenues declined by 5%[39] annually to the point where, as displayed in Figure 3.4.1, by year end 2006 over half of the industry's revenues were generated from the newer, non-legacy services.

Figure 3.4.1
Emerging Service Revenues
As a percent of total telecommunications revenues



Source: CRTC data collection

Since 1985, consumers steadily augmented their consumption of wireline local and long distance voice services with Internet and wireless services. During this period, consumer demand for data and Internet service has increased as the number of computers with Internet connections increased. In 1998, approximately 55% of households with a personal computer had an Internet connection.[40] By 2002, 64% of households had a personal computer[41] of which 80% had an Internet connection. As displayed in Table 3.4.1, although the percent of households with personal computers increased from 64% to 74% since 2002, the percent of personal computers with an Internet connection increased substantially from 80% to 95%.

[39] CRTC data collection.
[40] Statistics Canada.
[41] Statistics Canada.

Table 3.4.1
Personal Computer Ownership and Connections

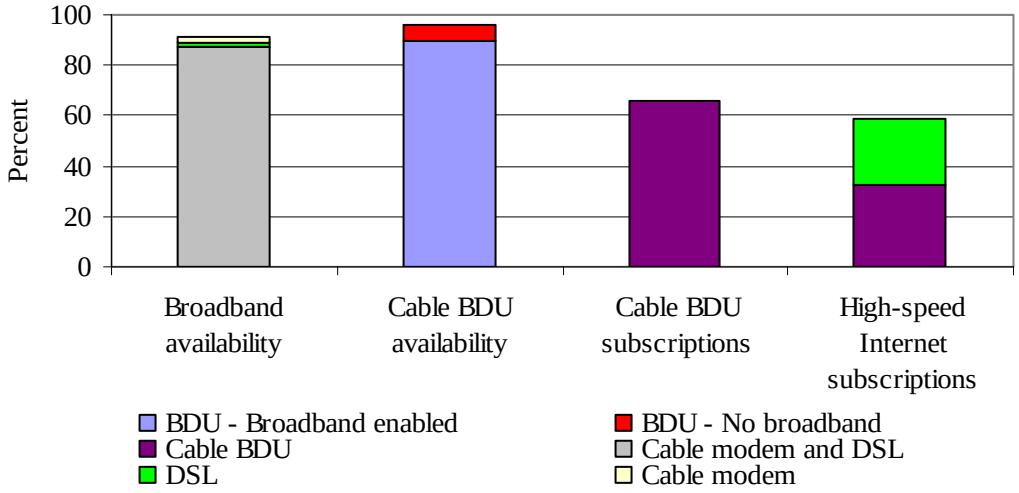
	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Percent of households with a Personal Computer (PC)	64	67	69	72	74	*2.8%*	*3.7%*
Percent of Personal Computers connected to the Internet	80	84	86	89	95	*6.7%*	*4.4%*

Source: Statistics Canada and CRTC data collection
Note: 2006 data based on staff estimates
Note: CAGR refers to Cumulative Annual Growth Rate

Access facilities providers

As technology evolved, telecommunications and cable BDU service providers were increasingly in a position to offer broadband service. More recently, this has provided the opportunity for these companies to compete in each other's traditional markets. The extent of this convergence from an access facilities perspective is displayed in Figure 3.4.2.

Figure 3.4.2
BDU and high-speed Internet subscriptions and availability as a percent of the number of Canadian households



Source: CRTC data collection, Statistics Canada and Industry Canada

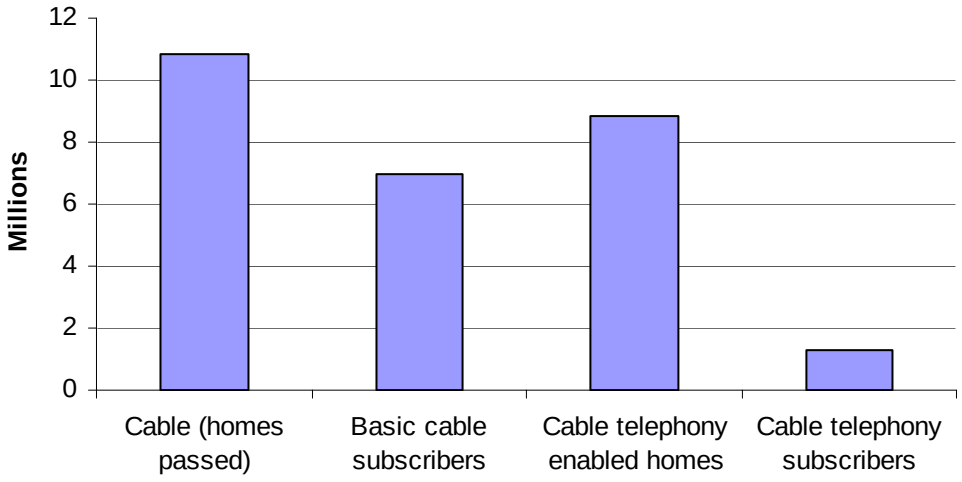
The cable BDU availability bar in Figure 3.4.2 indicates that 96% of households were located within cable BDU serving areas. In addition, 89% of households were located within areas where cable BDUs can provide broadband service. This represents the potential telecommunications market for the cable BDUs 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 approximately 65% of the households and, as displayed by the high-speed Internet subscription bar, provided Internet service to 33% of households.

As displayed by the broadband availability bar in Figure 3.4.2, cable BDUs' broadband availability was essentially the same as that of the incumbent TSPs, as approximately 87% of households were able to obtain broadband service either by cable modem or by DSL, whereas approximately 4% of households were able to obtain broadband service but had no choice of technology (i.e., cable modem or DSL). Accordingly, the incumbent TSPs and the cable BDUs are in a position to compete against each other in the broadband/Internet market.

Internet Protocol (IP) based telecommunications services have only been recently introduced by the cable BDUs. The extent to which cable BDUs enabled their networks to provide traditional telecommunications services is displayed in Figure 3.4.3 for the four largest cable BDUs. Based on Figure 3.4.3, by 2006 the four largest cable BDUs have enhanced their networks to the point where approximately 82% of the homes passed by their networks can subscribe to them for telephone service of which 12% actually do.

Figure 3.4.3
Number of Homes Passed and Subscriptions
Four Largest BDU Companies
(2006)



Source: Company quartely results (as of March 2007) and CRTC estimates

Table 3.4.2 displays the extent to which TSPs provided telecommunications and BDU services in 2006. Approximately 5% of the incumbent TSPs' revenues were derived from BDU activities versus 31% for the facilities-based alternative TSPs. The vast majority of the incumbent TSPs' revenues from BDU activities were derived from their satellite BDU operations.

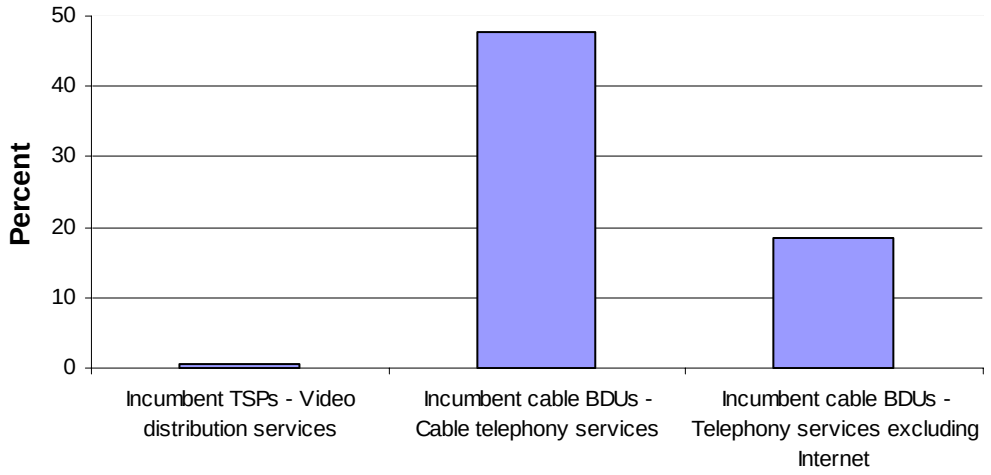
Table 3.4.2
Telecommunications Service Providers
2006 Revenue Sources by Market and Type of TSP
($ billions)

	Wireline & Satellite					Wireless	Total
	Voice	Data & PL	Internet	Broadcasting Distribution	Subtotal		
Incumbent TSPs	12.3	3.4	2.6	1.2	19.5	7.9	27.4
Alternative TSPs							
Facilities-based alternative TSPs	1.0	0.3	2.0	3.7 *	7.1	4.7	11.7
Resellers	1.0	0.3	0.4	0.0	1.7	0.1	1.8
Subtotal	2.0	0.6	2.5	3.7	8.8	4.8	13.5
Total	14.4	4.0	5.0	4.9	28.3	12.7	41.0

Source: CRTC data collection, annual reports
Note: * denotes 2005 data

As displayed in Figure 3.4.4, excluding satellite operations, incumbent TSP revenues from BDU activities is relatively small. In contrast, cable BDU revenues from wireline telecommunications services, including Internet, represented approximately 48% of their total BDU revenues. Excluding Internet revenues, this percentage drops to approximately 19%.

Figure 3.4.4
Incumbent TSP and cable BDU non traditional service revenues
As a percent of total wireline revenues



Source: CRTC data collection

Service bundling

TSPs continued to package or bundle various services to maintain or increase their revenues. In 2006, the number of residential customers subscribing to various bundles of services that exclude long distance service increased by 25%.[42] TSPs providing local service are bundling long distance service with their local service offering. Others, such as the wireless providers, offer family plans.

In 2006, over 15% of residential accounts included service bundles that consisted of two or more of the following services: local, Internet, video, and wireless.[43] The extent to which residential customer accounts contained service bundles varied by TSP, ranging from a low of 10% of residential accounts to a high in excess of 50%.

Industry developments

On 7 July 2006, Bell Canada's regional wireline telecommunications operations in Ontario and Quebec were combined with, among other things, the wireline telecommunications operations of Aliant Telecom Inc., Société en commandite Télébec, and NothernTel, Limited Partnership to form Bell Aliant Regional Communications, Limited Partnership (Bell Aliant); while the wireless operations of Aliant Telecom Inc. were acquired by Bell Canada. As well, in 2006, both TELUS Communications Inc. (TCI) and TELE-MOBILE Company (TMC) ceased to operate as Canadian carriers as these operations are now performed by TELUS Communications Corporation (TCC) which began operating as the incumbent TSP in the operating territory of the former TCI and as the wireless service provider in the territories in which TMC had operated.

Small independent telephone companies were not immune to consolidation activities as People's Communications Inc. was acquired by Amtelecom Income Fund and Le Téléphone St-Liboire de Bagot Inc. was acquired by Sogetel Inc. More recently, Amtelecom Income Fund itself was the subject of industry consolidation as Bragg Communications Inc. acquired it.

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[42] Source: CRTC data collection.
[43] Source: CRTC data collection.

4.0 Status of Competition

4.1 Financial review of market segments

Highlights

- **Revenues**:
  - industry revenues increased from $34.5 billion in 2005 to $36.1 billion in 2006, an increase of $1.6 billion or 4.5%.
  - wireline revenues decreased from $23.5 billion in 2005 to $23.4 billion in 2006, a decrease of $0.1 billion or 0.5%.
  - wireless revenues increased from $11.0 billion in 2005 to $12.7 billion in 2006, an increase of $1.7 billion or 15.2%.
- **Earnings before interest, taxes, depreciation and amortization (EBITDA)**
  - industry EBITDA increased from $12.4 billion in 2005 to $13.1 billion in 2006, an increase of $0.7 billion or 5.3%.
  - wireline EBITDA margin[44] decreased to 36.6% from 36.8% in 2005.
  - wireless EBITDA margin increased from 39.8% in 2005 to 44.1% in 2006.
- **Capital expenditures (CAPEX)**
  - CAPEX increased from $5.6 billion in 2005 to $6.9 billion in 2006, an increase of $1.3 billion or 24.1%.
  - capital intensity (CAPEX/revenues) increased from 17.5% in 2005 to 20.0% in 2006.

Part A – Telecommunications revenues

Telecommunications revenues include revenues from wireline and wireless services. 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 revenues from mobile and paging services and revenues related to terminal equipment.

a) Telecommunications revenues overview

As shown in Table 4.1.1 and Figure 4.1.1, telecommunications revenues increased from $34.5 billion in 2005 to $36.1 billion in 2006, an increase of $1.6 billion or 4.5%. Over the 2002 to 2006 period, telecommunications revenues increased at an annual rate of 3.4%.

Wireless revenues as a percent of total telecommunications revenues continued to increase from 32% in 2005 to 35% in 2006 as wireless revenues growth continued to outpace the growth of wireline revenues. Wireless revenues at $12.7 billion increased $1.7 billion or 15.2% in 2006 while wireline revenues at $23.4 billion decreased $0.1 billion or 0.5%. The trend exhibited in these results is the consumer adoption of the newer non-legacy services such as Internet and wireless services, as well as the business customers' preference for the newer data protocol services such as IP-VPN and Ethernet.

[44] EBITDA margin is calculated by dividing the EBITDA by revenues. Revenues include revenues from the provision of Canadian telecommunications services.

Retail revenues increased from $31.6 billion in 2005 to $32.7 billion in 2006 an increase of $1.2 billion or 3.8%, while wholesale revenues increased from $3.0 billion in 2005 to $3.3 billion in 2006 an increase of $0.4 billion or 12.7%. Retail revenues as a percent of total revenues remained unchanged at 91%. The major contributors to wholesale revenues in 2006 were long distance (26%), local and access (25%), and data and private line (26%).

Table 4.1.1
Retail and wholesale telecommunications revenues[45]
($ billions)

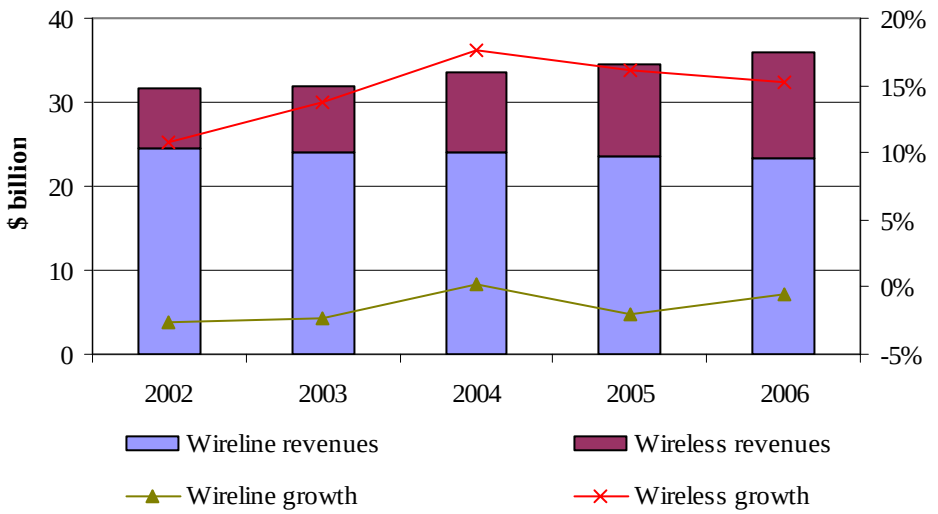
	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Wireline							
Retail	20.6	20.6	21.1 #	20.6 #	20.5	*-0.7%*	*-0.2%*
Wholesale	3.9 #	3.3 #	2.9	2.9 #	2.9	*0.7%*	*-7.2%*
Wireline total	24.5 #	23.9 #	24.0 #	23.5	23.4	*-0.5%*	*-1.2%*
Wireless							
Retail	7.1	8.1 #	9.4	10.9	12.2	*12.1%*	*14.5%*
Wholesale	n/a	n/a	0.1	0.1	0.5	*nm*	*n/a*
Wireless Total	7.1	8.1 #	9.5	11.0	12.7	*15.2%*	*15.7%*
Retail total	27.7	28.7 #	30.5	31.6 #	32.7	*3.8%*	*4.2%*
Wholesale total	3.9	3.3	3.0	3.0	3.3	*12.7%*	*-3.8%*
Total	31.6 #	32.0 #	33.5 #	34.5	36.1	*4.5%*	*3.4%*

Source: CRTC data collection
Note: nm: not meaningful
n/a: not available

As displayed in Figure 4.1.1, over the 2002 to 2004 period, wireless revenue growth continually increased from 11% in 2002 to 18% in 2004. After peaking in 2004, wireless revenue growth declined to 15% in 2006; resulting in an annual growth over the 2002 to 2006 period of 16%. Wireline growth has essentially been negative over this period ranging from a high of zero percent in 2004 to a low of a 3% decline in 2002; resulting in an annual revenue decline over the 2002 to 2006 period of 1%.

[45] Estimates are used to capture the revenues of the smaller service providers that were not required to complete data forms. These estimates are based on the information provided by the service providers in their registration forms.

Figure 4.1.1
Telecommunications revenues and percent annual growth



Source: CRTC data collection

b) Revenues by market segment

Table 4.1.2 displays market segment revenues over the 2002 to 2006 period. Wireline voice revenues, consisting of revenues from local and access and long distance services, representing approximately 61% of wireline revenues, declined 3% or $0.5 billion in 2006; while non-voice wireline services such as Internet and data and private line representing 39% of wireline revenues, increased 4.5% or $0.4 billion.

Table 4.1.2
Telecommunications revenues by market segment
($ billions)

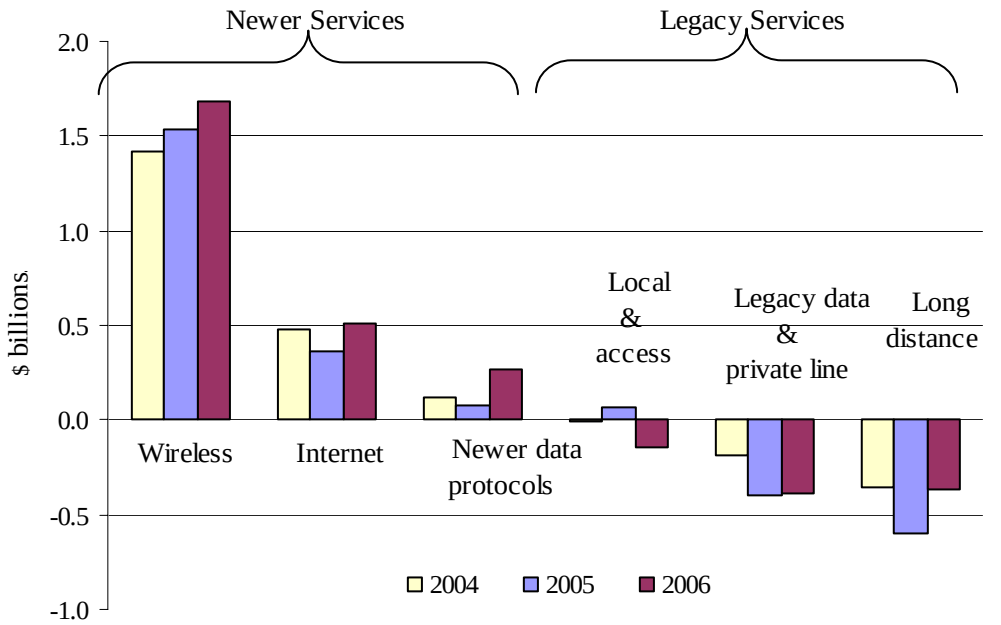
	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Wireline							
Local and access	10.0	9.7	9.7	9.8	9.6	*-1.5%*	*-1.0%*
Long distance	6.7 #	6.1 #	5.7 #	5.1	4.7	*-7.2%*	*-8.2%*
Voice subtotal	16.7	15.8	15.4	14.9 #	14.4	*-3.4%*	*-3.7%*
Internet	3.3	3.7	4.2	4.5	5.0	*11.2%*	*11.3%*
Data and private line							
Newer data protocols	0.3	0.5	0.6	0.7	0.9	*40.1%*	*29.0%*
Legacy data and private line	4.2	4.0	3.8	3.4	3.0	*-11.3%*	*-7.8%*
Data and private line total	4.5	4.5	4.4	4.1	4.0	*-2.9%*	*-3.3%*
Non-voice subtotal	7.8 #	8.2 #	8.6 #	8.6 #	9.0	*4.5%*	*3.6%*
Wireline total	24.5 #	23.9 #	24.0 #	23.5	23.4	*-0.5%*	*-1.2%*
Wireless	7.1	8.1 #	9.5	11.0	12.7	*15.2%*	*15.7%*
Total	31.6 #	32.0 #	33.5 #	34.5	36.1	*4.5%*	*3.4%*

Source: CRTC data collection.

Figure 4.1.2 displays the sources of revenue growth for the 2004 to 2006 period. Over this period, growth was from the non-legacy or newer services: wireless, Internet and the newer data protocols such as IP-VPN and Ethernet. This growth, however was partially offset by the legacy or declining services: local and access, legacy data and private line, and long distance.

Non-legacy service revenues represented 52% of the telecommunications revenues in 2006 compared to 34% in 2002 which illustrates the dynamic currents that were at play in the telecommunications industry.

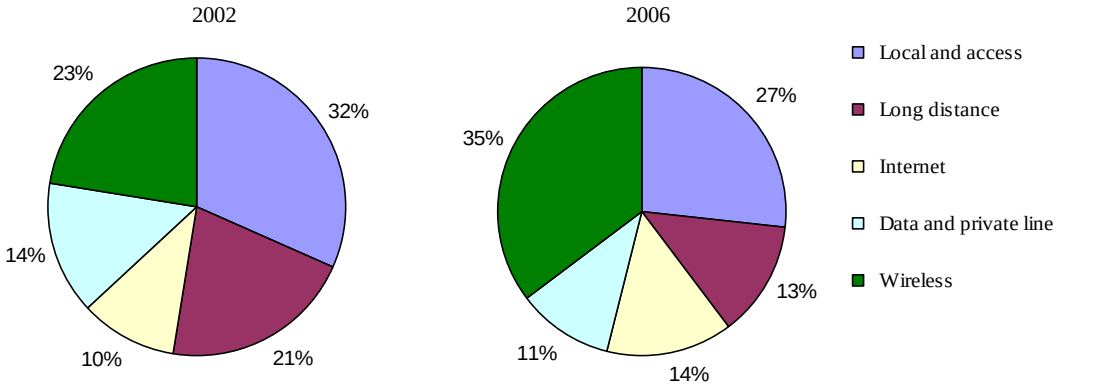
Figure 4.1.2
Annual revenue growth by market segment



Source: CRTC data collection

Figure 4.1.3 compares the distribution of telecommunications revenues by market segment in 2002 and 2006. Internet and wireless revenues as a percent of total revenues increased significantly over this period. When combined, the revenues from these two market segments accounted for 49% of total telecommunications revenues in 2006 compared to 33% in 2002.

Figure 4.1.3
Distribution of telecommunications revenues by market segment



Source: CRTC data collection

Part B – Key financial indicators[46]

This section provides a number of financial indicators by type of TSP. The incumbent TSP category includes out-of-territory since required data is not available separately for the incumbent TSPs' out-of-territory operations.

The financial indicators discussed are: EBITDA and EBITDA margin, capital expenditures, capital intensity, and inter-carrier payments.

a) EBITDA and EBITDA margin

As shown in Table 4.1.3, industry EBITDA in 2006 increased to $13.1 billion from $12.4 billion in 2005, an increase of $0.7 billion or 5%. The increase was due to the strong EBITDA from the wireless industry which increased from $4.4 billion in 2005 to $5.6 billion in 2006, a $1.2 billion or 27% increase; which was partially offset by the $0.5 billion decline in the wireline EBITDA which declined 7% from $8.0 billion in 2005 to $7.5 billion in 2006.

The incumbent TSPs' wireline EBITDA declined from $7.3 billion in 2005 to $7.1 billion in 2006, a decline of $0.2 billion or 2%. Over the 2002 to 2006 period, the wireline incumbent TSPs' EBITDA ranged from a high of $8.7 billion in 2002 to a low of $7.1 billion in 2006, a decline of $1.6 billion resulting in a 5% annual decline over the five year period.

[46] This section includes the financial data of the companies whose primary source of revenue is from the provision of telecommunications services.

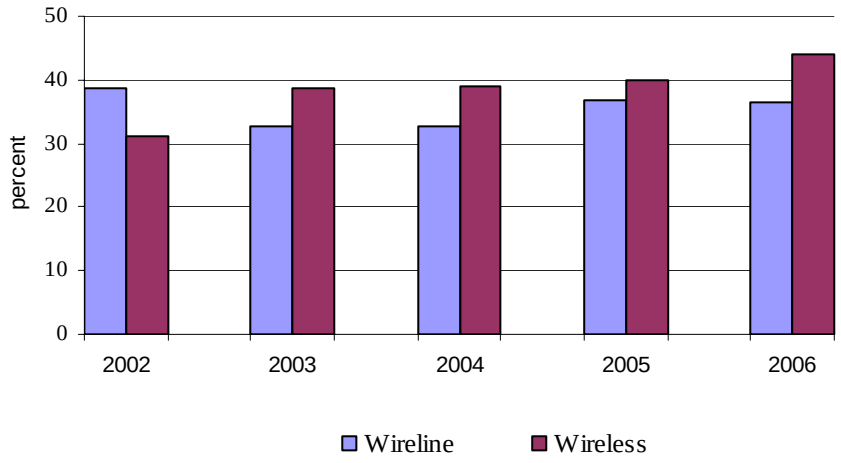
Table 4.1.3
EBITDA by type of TSP
($ billions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Wireline							
Incumbent TSPs (including out-of-territory)	8.7	7.2	7.7	7.3	7.1	*-2.3%*	*-4.9%*
Alternative TSPs							
Non incumbent facilities-based alternative TSPs	n/a	n/a	n/a	0.5	0.1	*-75.1%*	*n/a*
Resellers	n/a	n/a	n/a	0.2	0.2	*26.3%*	*n/a*
Alternative TSPs total	0.7	0.6	0.1	0.7	0.4	*-49.5%*	*-14.8%*
Wireline total	9.4	7.8	7.8	8.0	7.5	*-6.6%*	*-5.5%*
Wireless	2.2	3.1	3.7	4.4	5.6	*27.2%*	*26.3%*
Total	11.6	10.9	11.5	12.4	13.1	*5.3%*	*3.1%*

Source: CRTC data collection
n/a: not available

Figure 4.1.4 compares the wireline and wireless EBITDA margin over the 2002 to 2006 period. Over this period, the wireline EBITDA margin has varied from a low of 33% in 2003 and 2004, to a high of 39% in 2002. In contrast, the wireless EBITDA margin steadily increased from 31% in 2002 to 44% in 2006. Although wireless revenues accounted for 35% of the telecommunications revenues in 2006, the wireless EBITDA accounted for 43% of industry EBITDA.

Figure 4.1.4
EBITDA margin by type of TSP



Source: CRTC data collection

b) Capital expenditures and capital intensity

Capital expenditures are one of the main costs of providing telecommunications services. These costs are primarily investments in fixed assets such as property, plant and equipment and are an important element in the growth strategy of the industry. When examining capital expenditures, especially in a dynamically changing industry such as telecommunications, one must often look at the trend in expenditures over a period of time as these expenditures are often a reflection of a multi-year construction program. This section presents the industry capital expenditures and capital intensity ratios (capital expenditures as a percentage of revenues) over the 2002 to 2006 period.

i) Capital expenditures

In 2006 incumbent TSP and cable BDU expenditures included, but were not limited to, enhancements to EVDO and HSDPA capable wireless networks, expansion of fibre-to-the-node (FTTN) facilities as well as expansion of wireless and DSL capacity and coverage. After rolling out their EVDO and HSDPA wireless networks in late 2004 and early 2005, Bell Canada, TCC and Rogers Communication Corporation (Rogers) expanded their high-speed mobile network coverage to additional urban centres and various cottage country locations in 2006. The incumbent TSPs also made expenditures on IPTV.

Capital expenditures by type of provider are displayed in Table 4.1.4. Total telecommunications expenditures were $6.9 billion in 2006, a 24.1% increase from the $5.6 billion in 2005. Wireless capital expenditures increased by 22.5% to $1.7 billion in 2006. Wireline capital expenditures, representing approximately 76% of telecommunications capital expenditures, increased from $4.2 billion in 2005 to $5.3 billion in 2006, an increase of 25%. In 2006 the incumbent TSPs' capital expenditures were approximately 75% of total wireline capital expenditure, compared to 85% in 2005.

The non-incumbent facilities-based alternative TSPs doubled their capital expenditures from $0.6 billion in 2005 to $1.2 billion in 2006. This increase was primarily attributable to increased expenditures by the cable BDUs in wireline telephony activities.

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

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Wireline							
Incumbent TSPs (including out-of-territory)	4.0	3.2	4.2	3.6 #	4.0	*11.4%*	*-0.2%*
Alternative TSPs							
Non-incumbent facilities-based alternative TSPs	n/a	n/a	n/a	0.6	1.2	*109.0%*	*n/a*
Resellers	n/a	n/a	n/a	0.1	0.1	*-16.8%*	*n/a*
Alternative TSPs Total	0.7	0.7	0.4	0.7	1.3	*96.1%*	*16.6%*
Wireline total	4.7	3.9	4.6	4.2 #	5.3	*24.6%*	*2.9%*
Wireless	1.6	1.3	1.1	1.4 #	1.7	*22.5%*	*1.3%*
Wireline and wireless total	6.3	5.2	5.7	5.6	6.9	*24.1%*	*2.5%*

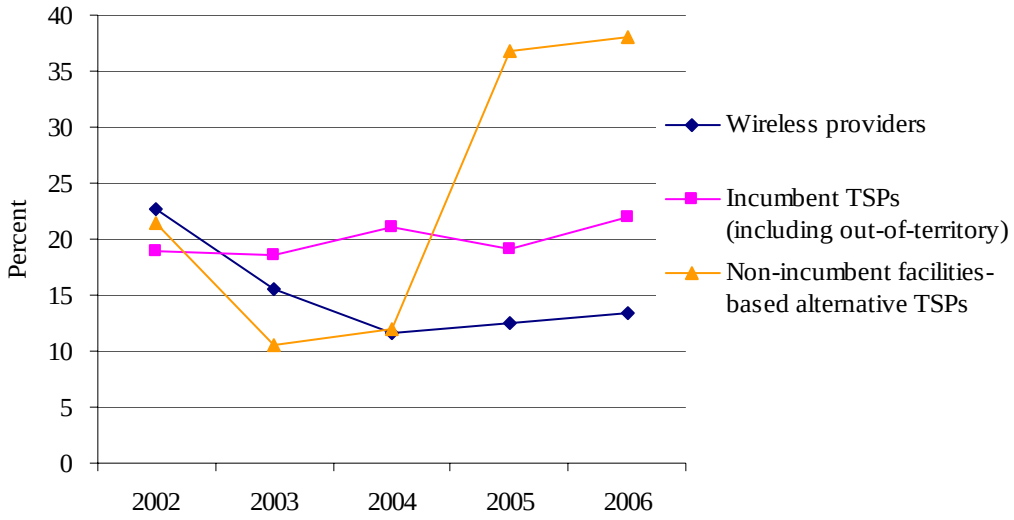
Source: CRTC data collection
n/a: not available

ii) Capital intensity

As shown in Figure 4.1.5, capital expenditures as a percentage of revenue by type of TSP varied significantly over the 2002 to 2006 period. In 2002 the TSPs' capital expenditures as a percent of revenues clustered in the 19% to 23% range. By 2006 this range expanded significantly and by 2006 capital expenditures as a percent of revenues varied from 13% to 38%. Wireline incumbent TSPs remained relatively constant in the 19% to 22% range. Whereas the wireline facilities-based non-incumbent TSPs initially reduced their capital expenditures as a percentage of revenues in 2003 by 2006, they increased it by more than 3-fold from 11% in 2003 to 38% in 2006.

Over the 2002 to 2006 period wireless service providers have shown a significant decrease in their capital expenditures as a percentage of revenues, dropping from 23% in 2002 to 13% in 2005 and 2006. The decline in their capital expenditures as a percentage of revenues in 2006 is a reflection of their revenue growth since their capital expenditures actually increased in 2006 by 23%.

Figure 4.1.5
Capital expenditures as a percentage of revenues by type of TSP



Source: CRTC data collection

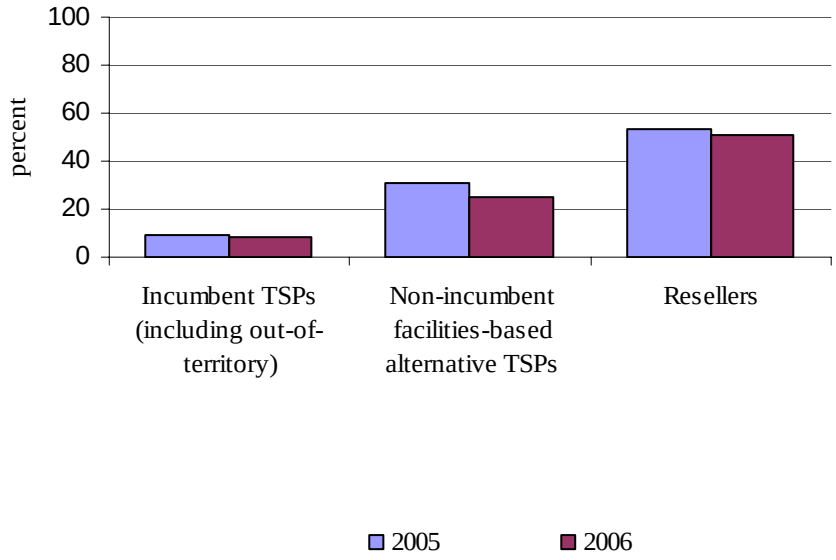
c) Inter-carrier payments

In providing telecommunications services, a TSP can either build its own network by incurring capital expenditures or the TSP can acquire access to the facilities of another TSP. The payments made to acquire access to facilities from another TSP are referred to as inter-carrier payments. These services can be acquired either from incumbent TSPs for services that may or may not have a tariff, or from non-incumbent TSPs. Incumbent TSP services may include unbundled loops, co-location, access tandem, direct connect, centrex, and private line. Non-incumbent TSP services may include items such as PSTN connections and inter-exchange private line. Contribution payments or settlement charges are not considered as inter-carrier payments.

In 2006 wireline inter-carrier expenses for all TSPs represented approximately 18% of total wireline operating expenses.[47] Figure 4.1.6 below displays inter-carrier payments as a percentage of revenues for the incumbent TSPs and the facilities-based non-incumbent TSPs for the wireline segment. In 2006 reseller inter-carrier expenses were approximately 51% of revenues, followed by the facilities-based non-incumbent TSPs at 25% and the incumbent TSPs at 9%.

[47] Source: CRTC data collection.

Figure 4.1.6
Wireline inter-carrier expenses as a percentage of revenues
By type of TSP



Source: CRTC data collection

4.2 Local and access

Highlights

- Total number of local and access lines increased 1% in 2006 from 20.8 million lines in 2005 to 21.0 million lines, while revenues declined 1.4%, from $9.5 billion in 2005 to $9.4 billion.
- Retail revenues declined slightly to $8.5 billion, of which the alternative TSPs held 11.6%, up from 8.4% in 2005.
- The total number of retail lines increased slightly to 19.2 million lines, of which the alternative TSPs held 14.8%, up from 9.7% in 2005.
- The number of residential lines provided by alternative TSPs increased by 89%, while business lines increased 13%. Most of the increase in the number of residential lines provided by alternative TSPs was due to the cable BDUs.

Sector description

a) Description of services

The local and access sector is comprised of wireline services relating to access and connectivity with the PSTN including services used both by retail and wholesale customers.

Local wireline telephone services allow a customer to place unlimited calls within a defined local-calling area for a basic monthly fee. These services are categorized as being either access-dependent or access-independent. Access-dependent telephone services include a managed wireline access from the TSP to the customer, a connection to the PSTN and a telephone number. Access-independent telephone services are similar to access-dependent services but they do not include the managed wireline access component. In addition, customers of access-independent telephone services must also have broadband Internet service, which serves as the access component. Telephony services such as computer-to-computer communication services, which do not include universal connectivity to the PSTN, are not included in local and access sector results.

Local service also includes automated call answering services, business Centrex, Integrated Services Digital Network (ISDN) services, and other ancillary 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.

b) Markets and observations for 2006

Table 4.2.1 provides results for total local and access revenues, and lines for the period 2002 to 2006.

Table 4.2.1
Total local and access revenues, and lines

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Total local and access revenues ($ millions)	10,003	9,699	9,695	9,762	9,618	*-1.5%*	*-1.0%*
Less: Contribution revenues ($ millions)	250	247	240	251	238	*-5.2%*	*-1.2%*
Local and access service revenues ($ millions)	9,724	9,452	9,455	9,511	9,380	*-1.4%*	*-0.9%*
Lines (thousands)	20,622	20,612	20,563	20,780	21,000	*1.1%*	*0.5%*

Source: CRTC data collection

Contribution revenues, which are received by local exchange carriers (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 included in the local and access revenues presented in Table 4.2.1. Contribution revenues, as well as revenues from the sale of wireline terminal equipment, such as telephone handsets and private branch exchange (PBX) switching equipment, are excluded from the remaining tables in this section of the report.

Total local and access revenues in Table 4.2.1 include 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.

i) Local competition

Local competition increased as telephone service provided by cable BDUs continued to make significant inroads. In 2006, the number of residential lines provided by cable BDUs reached approximately 1.6 million lines,[48] up from 0.8 million lines in 2005, of which over 75% were provisioned utilizing a form of managed voice-over-cable technology.

Additionally, several of the small incumbent TSPs have, or are in the process of becoming, competitive local exchange carriers (CLECs) and competing in a number of large incumbent TSP or ILEC exchanges (typically those of Bell Canada and Bell Aliant). Since the advent of local competition, most CLECs or alternative TSPs focused on the business market and competed within exchanges found in the large metropolitan areas. Now however, aggressive competition is occurring in the residential market both by cable BDUs and, to a lesser extent, the small incumbent TSPs.

[48] CRTC data collection.

ii) Wireless number portability

Wireless number portability (WNP) came into effect on 14 March 2007 in the provinces of British Columbia, Alberta, Ontario and Quebec.[49] This allows consumers in those provinces the ability to switch between TSPs, either wireline or wireless, and retain the telephone number of their previous provider.[50]

The introduction of WNP may impact the local market as this allows subscribers of either wireline or wireless service to seamlessly migrate to the other service.

iii) Growth of the bundle

Cable BDUs offering local telephone service experienced growth of basic and digital cable service, and high-speed Internet.

iv) Access-independent telephone service

The adoption of VoIP telephony services which utilize an unmanaged broadband Internet access has not exhibited the same dramatic adoption rates of managed VoIP-based local telephone services such as those offered by the cable BDUs.[51] The nomadic nature of the access-independent service (the subscriber of the service is not limited by geography) allows subscribers to select a telephone number from an exchange that is outside the exchange which serves their household, similar to a foreign exchange service. Approximately 50%[52] of residential local VoIP telephone customers selected a telephone number which was outside of their exchange of residence; this suggests that about half these customers were not using the service as a replacement for local telephone service, but as a means of establishing a presence in another location.

c) Sector participants

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

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

50 For all other areas where LEC to LEC local number portability (LNP) is available, porting-in which refers to the ability of a TSP to accept a customer's phone number from another TSP when the customer changes his or hers service provider, will be 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.

51 CRTC data collection.

52 CRTC data collection.

Alternative TSPs of local service had typically been facilities-based service providers and resellers. Some large incumbent TSPs have expanded outside of their traditional serving territories, either organically or through acquisition, thereby providing competition either directly or through affiliate companies. Small incumbent TSPs are also increasingly operating outside of their traditional territories or acquiring others. As of 30 March 2007 there were 14 small incumbent TSPs with either current or pending CLEC status. Within this report, competitive services provided by incumbent TSPs outside of their traditional operating territories are referred to as incumbent TSP (out-of-territory).

d) Regulatory framework

Local telephone service provided by the incumbent TSPs is subject to price regulation. The Commission also regulates interconnection services provided by LECs.

Local telephone service in the territories of all incumbent TSPs with the exception of Northwestel, is open to facilities-based competition. In the case of Northwestel, only resale of local service[53] is permitted. 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. The price cap regimes were recently reviewed and modified and no fixed review dates were established. Now a single price regime encompasses all of the large incumbent TSPs, except Télébec.[54]

In Decision 2007-5 the Commission, among other things, established a price cap regime for Northwestel for a period of four years beginning in 2007. The Commission developed a simplified framework that will provide the company with certainty over the price cap period and significantly reduce the regulatory burden for the company.

Non-forborne services provided by small incumbent telephone companies were made subject to a simplified form of price regulation effective in January 2002.[55] In *Revised regulatory framework for the small incumbent local exchange carriers*, Telecom Decision CRTC 2006-14, 29 March 2006, the Commission extended, with minor modifications, the simplified price regulation regime of the small incumbent telephone companies and among other things, permitted local competition within their territories.

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

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53 *Price cap regulation for Northwestel Inc.*, Telecom Decision CRTC 2007-5, 2 February 2007 (Decision 2007-5).

54 In Decision 2007-27, the Commission directed Télébec to show cause, by 30 May 2007, why the determinations made in this decision should not apply to it.

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

e) Regulatory developments

i) Alteration of the framework for local VoIP services

In Decision 2005-28,[56] the Commission set out details of the regulatory regime applicable to the provision of local VoIP services including, among other things, that local VoIP services are part of the same relevant market as circuit-switched local exchange services. In Order P.C. 2006-305 dated 4 May 2006, the Governor in Council referred Decision 2005-28 back to the Commission for reconsideration. In Decision 2006-53,[57] following a public process,[58] the Commission reaffirmed the regulatory regime established in Decision 2005-28.

Subsequently, the Governor in Council issued an Order[59] requiring the Commission to refrain from regulating retail local access-independent VoIP services provided by incumbent TSPs. The Order stated that Decision 2005-28, as amended by Decision 2005-28-1 and as confirmed in Decision 2006-53, shall otherwise continue to apply, to the extent that its provisions are not inconsistent with the Order.

ii) Alteration of the framework for local forbearance criteria

In Decision 2006-15,[60] among other things, the Commission set out the details of the framework for forbearance from the regulation of local exchange services including the local forbearance criteria, such as a 25% market share loss threshold, that applied within a defined geographic area or market. The Commission determined that residential local exchange services and business local exchange services are in different relevant markets for the purpose of the local forbearance framework.

In *Order varying Telecom Decision CRTC 2006-15*, Order in Council P.C. 2007-0532, issued 4 April 2007 (the Forbearance Order), the Governor in Council, among other things, replaced the Commission's market share loss criterion with one that emphasizes the presence of competitive TSPs and it replaced the geographic areas with incumbent TSP exchange boundaries. The Forbearance Order also modified the competitor quality of service indicators for forbearance purposes and eliminated the winback rule which determined when an incumbent telephone company could contact customers that were switching to their competitors and removed the existing competitive safeguards for promotions which addressed issues such as the availability, timing, duration and limitations of the promotion as well as the price of the service promoted.

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[56] *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision 2005-28, 12 May 2005 as amended by Telecom Decision CRTC 2005-28-1, 30 June 2005 (Decision 2005-28).

[57] Reconsideration of *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2006-53, 1 September 2006 (Decision 2006-53).

[58] Reconsideration of *Regulatory framework for voice communication services using Internet Protocol*, Telecom Decision CRTC 2005-28, Telecom Public Notice CRTC 2006-6, 10 May 2006 (Public Notice 2006-6).

[59] *Order varying telecom decision CRTC 2005-28 (Regulatory framework for voice communication services using Internet Protocol)*, Order in Council P.C. 2006-1314, issued 9 November 2006.

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

In an effort to deal with local forbearance applications as expeditiously and fairly as possible, the Commission issued *Timelines for submissions regarding local forbearance applications*, Telecom Circular CRTC 2007-13, 19 April 2007, to set out the timelines for submissions regarding local forbearance applications.

iii) Rate de-averaging and price ranges

In Decisions 2006-75 and 2007-36, the Commission determined that price ranges for local exchange and related services as well as VoIP related services is appropriate. The use of rate ranges permits an incumbent TSP to respond to market forces by providing pricing flexibility and eliminating the need for regulatory approval of price changes within the range, thus reducing regulatory burden for both the incumbent TSPs and the Commission. In particular, Decision 2007-36 allows incumbent TSPs to propose rate ranges for services for which rate de-averaging is allowed, as long as the maximum or minimum rate to be charged or both is publicly specified in the tariff. This allows an incumbent TSP to offer different rates to different customers for the same service for those services where rate de-averaging is allowed. The rate range regime, however, is subject to the Commission's pricing constraints and safeguards in place for the larger incumbent TSPs.

iv) Essential services proceeding

The Commission initiated a proceeding[61] to consider a revised definition of essential service, and the classifications and pricing principles for essential and non-essential services made available by incumbent TSPs, cable carriers and CLECs to other competitors at regulated rates (wholesale services).

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 2002 to 2006. Table 4.2.3 provides the number of local lines that correspond to these market segments.

[61] *Review of regulatory framework for wholesale services and definition of essential service*, Telecom Public Notice CRTC 2006-14, 9 November 2006 as amended by Telecom Public Notices 2006-14-1, 15 December 2006; 2006-14-2, 15 February 2007; 2006-14-3, 16 March 2007 and 2006-14-4, 20 March 2007.

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

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Retail							
Residential	5,140	5,132	5,099	5,086	4,947	*-2.7%*	*-1.0%*
Business	3,544	3,398	3,402	3,472	3,514	*1.2%*	*-0.2%*
Subtotal Retail	8,684	8,530	8,501	8,558	8,461	*-1.1%*	*-0.6%*
Wholesale	893	755	822	828	827	*-0.1%*	*-1.9%*
Total	9,577	9,285	9,323	9,386	9,288	*-1.0%*	*-0.8%*

Source: CRTC data collection

Table 4.2.3
Local lines by market segment
(Thousands)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Retail							
Residential	12,913	12,886	12,891	12,900	12,950	*0.4%*	*0.1%*
Business	6,339 #	6,275 #	6,178 #	6,224 #	6,268	*0.7%*	*-0.3%*
Subtotal Retail	19,252 #	19,161 #	19,069 #	19,124 #	19,218	*0.5%*	*0.0%*
Wholesale	521	611	631 #	802 #	969	*20.8%*	*16.8%*
Total	19,773 #	19,772 #	19,700 #	19,926 #	20,187	*1.3%*	*0.5%*

Source: CRTC data collection

In 2006, local and access revenues declined slightly, with growth in the business segment more than offset by losses in the residential segment. Over the same period, driven primarily by the growth of wholesale lines, the total number of local lines increased to over 20 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.

In 2006, the total number of retail lines was essentially unchanged from 2005. Despite the unchanged size of the addressable market, retail revenues held by alternative TSPs increased to 11.6% of all retail revenue, up from 8.4% in 2005. Retail lines provided by alternative TSPs increased to 14.8% of all retail lines, up from 9.7% in 2005. The growth of lines provided by the alternative TSPs has driven the increase of wholesale lines, as is discussed in the section entitled Local wholesale market.

Table 4.2.4 shows the aggregated share of local retail lines held by the incumbent TSPs, excluding Northwestel, in their incumbent operating territories for each province, and aggregated for all provinces.

Table 4.2.4
Incumbent TSP local retail market line-share by province

Province	2005	2006
British Columbia	91.9%	88.0%
Alberta	87.1%	82.3%
Saskatchewan	99.9%	99.5%
Manitoba	96.7%	92.1%
Ontario	88.6%	83.5%
Quebec	90.9%	84.6%
New Brunswick	99.1%	96.6%
Nova Scotia	82.1%	78.9%
Prince Edward Island	87.3%	85.1%
Newfoundland and Labrador	96.1%	96.1%
All provinces	90.3%	85.4%

As discussed, the geographic area to be used for forbearance applications is the incumbent TSP exchange boundaries. Additionally, the Forbearance Order directed the Commission to give priority to applications for forbearance that relate to local exchanges that are located wholly or partially within specific large census metropolitan areas (CMAs). These areas are identified by means of an asterisk (*) in Table 4.2.5 which displays the annual aggregated residential and business market line-share held by the incumbent TSPs in each of the major centres in Canada over the 2005 to 2006 period.

As of 1 June 2007, the Commission had received applications for forbearance representing a total of 423 residential markets and 327 business markets within 430 exchanges. The markets contained in these applications represent 69% of all residential lines and 57% of all business lines. Appendix 4 to this report provides the status of local forbearance by exchange for all exchanges where incumbent TSPs filed local forbearance applications with the Commission as of 1 June 2007.

Table 4.2.5
Incumbent TSP retail market line-share by Major Centres[62]

		Residential Lines		Business Lines	
Province	**Major Centre**	**2005**	**2006**	**2005**	**2006**
British Columbia	Vancouver *	91.8%	85.3%	77.5%	74.0%
	Victoria	93.1%	80.6%	88.8%	86.3%
Alberta	Calgary *	82.0%	74.3%	75.9%	73.8%
	Edmonton *	90.7%	82.0%	74.8%	72.7%
Saskatchewan	Saskatoon	100.0%	97.5%	99.8%	99.5%
	Regina	99.9%	99.8%	99.8%	99.6%
Manitoba	Winnipeg	92.4%	82.5%	99.1%	96.5%
Ontario	Toronto *	85.2%	76.5%	78.8%	77.4%
	Ottawa-Gatineau *	92.3%	84.2%	90.4%	90.6%
	Hamilton *	90.4%	80.1%	83.2%	84.1%
	London *	87.7%	79.2%	81.1%	79.5%
	Kitchener	90.7%	81.2%	80.7%	78.1%
	St. Catharines-Niagara	97.8%	91.8%	85.4%	82.9%
	Windsor	99.0%	91.0%	81.3%	78.1%
	Oshawa	87.6%	78.2%	87.3%	87.0%
Quebec	Montréal *	86.6%	75.2%	84.0%	82.5%
	Québec *	90.2%	80.0%	83.0%	82.2%
New Brunswick	Fredericton	100.0%	92.6%	95.0%	99.2%
Nova Scotia	Halifax *	65.1%	60.7%	83.4%	83.7%
Prince Edward Island	Charlottetown	73.0%	69.7%	84.2%	82.9%
Newfoundland and Labrador	St. John's	100.0%	100.0%	79.7%	79.2%

Source: CRTC data collection
Note: * denotes priority major centres as identified in the Forbearance Order

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. For several years, basic local service has represented approximately 72% of local residential service revenues. In 2006, this increased to 74%, as alternative TSPs included service features as part of the basic local service.

Table 4.2.6 and Table 4.2.7 present local residential revenues and lines, respectively, for the period 2002 to 2006

Table 4.2.6
Local residential revenues
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Incumbent TSPs	5,082	5,035	4,955	4,837	4,457	*-7.9%*	*-3.2%*
Incumbent TSPs (out-of-territory)	n/a	0	2	3	5	*66.7%*	*n/a*
Non-incumbent alternative TSPs	58	97	142	246	485	*97.0%*	*70.0%*
Total	5,140	5,132	5,099	5,086	4,947	*-2.7%*	*-1.0%*

Source: CRTC data collection
n/a: not available

[62] Major centre boundaries are defined using Statistics Canada census metropolitan area and census agglomeration definitions.

Table 4.2.7
Local residential lines
(Thousands)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Incumbent TSPs	12,729	12,627	12,463	11,924	11,104	*-6.9%*	*-3.4%*
Incumbent TSPs (out-of-territory)	n/a	1	10	13	21	*61.5%*	*n/a*
Non-incumbent alternative TSPs	184	258	418	963	1,825	*89.5%*	*77.5%*
Total	12,913	12,886	12,891	12,900	12,950	*0.4%*	*0.1%*

Source: CRTC data collection
n/a: not available

In 2006, the substantial increase in the number of lines provided by alternative TSPs was due primarily to the large cable BDUs. The small incumbents TSPs' out-of-territory results for 2006 also showed a significant increase.

As with the past several years, the number of residential telephone lines has demonstrated flat to slight growth. A number of competing demographic and technology factors may be contributing to this, including the growth of 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 2002 to 2006.

Table 4.2.8
Local business revenues
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Incumbent TSPs	3,258	3,036	2,996	2,998	3,023	*0.8%*	*-1.9%*
Incumbent TSPs (out-of-territory)	n/a	92	298	316	313	*-0.9%*	*n/a*
Non-incumbent alternative TSPs	286	270	108	158	178	*12.7%*	*-11.2%*
Total	3,544	3,398	3,402	3,472	3,514	*1.2%*	*-0.2%*

Source: CRTC data collection
n/a: not available

Table 4.2.9
Local business lines
(Thousands)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Incumbent TSPs	5,647 #	5,559 #	5,372 #	5,336 #	5,264	*-1.3%*	*-1.7%*
Incumbent TSPs (out-of-territory)	119	146	542	573	614	*7.2%*	*50.7%*
Non-incumbent alternative TSPs	574	570	264	315	390	*23.8%*	*-9.2%*
Total	6,339 #	6,275 #	6,178 #	6,224 #	6,268	*0.7%*	*-0.3%*

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 its 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 services, 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 period 2002 to 2006.

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

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Interconnection	354	287	333	322	293	*-9.0%*	*-4.6%*
Centrex	163	134	123	107	106	*-0.9%*	*-10.2%*
PSTN access	230	217	219	237	256	*8.0%*	*2.7%*
Unbundled loops	53	61	84	110	119	*8.2%*	*22.4%*
Other user charges	93	56	62	53	53	*0.0%*	*-13.1%*
Total	893	755	822	829	827	*-0.2%*	*-1.9%*

Source: CRTC data collection

In 2006, total local wholesale revenues were essentially unchanged. On a wholesale component basis: (i) interconnection revenues may have declined as alternative TSPs carried more long distance and local traffic on their own networks; (ii) Gross additions of unbundled loops were mostly offset by unbundled loop cancellations; and (iii) the increase in PSTN access revenue may have resulted from the growth of services provided to alternative TSPs, who do not use the facilities of an incumbent TSP to reach their end customer.

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 provider, and used to connect the retail customer to the competitor's network. As with owned facilities, connectivity to the PSTN is provided by the competitor's network; or

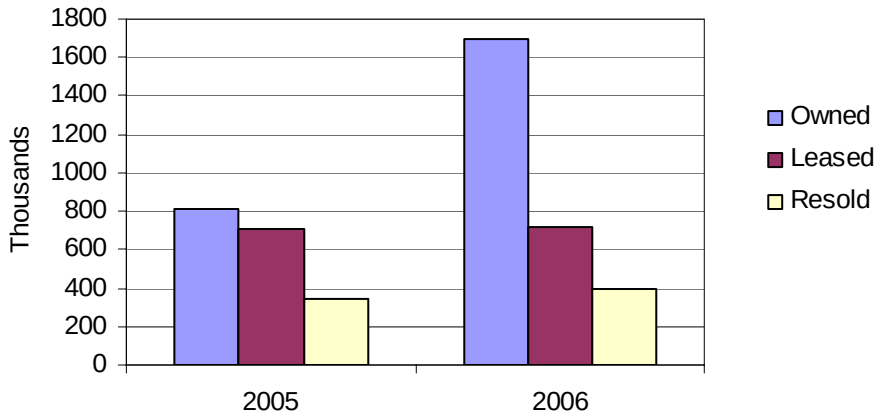
- resold services, such as Centrex or its equivalents, leased from a LEC and resold to the end-customer without touching the competitors' network.

Figure 4.2.1 illustrates the quantities of alternative TSP retail lines provisioned utilizing either owned (self-provisioned), leased or resold facilities.

This figure displays the means of delivery to the retail customer. Owned means that the TSP provisioned the service completely on its own facilities; leased means that a component of the service was leased from another TSP. Typically, the leased component is a local "last mile" facility such as an unbundled loop or digital network access (DNA). Lastly, resold lines are those where all components of the service are provided by another TSP.

In 2006, approximately 85% of the alternative TSP-provided retail lines were provisioned using owned or leased facilities. As displayed in Figure 4.2.1, the number of lines that alternative TSPs provisioned using their own facilities more than doubled in 2006 from approximately 0.8 million lines in 2005 to 1.7 million lines in 2006.

Figure 4.2.1
Alternative TSP local retail lines by type of facility

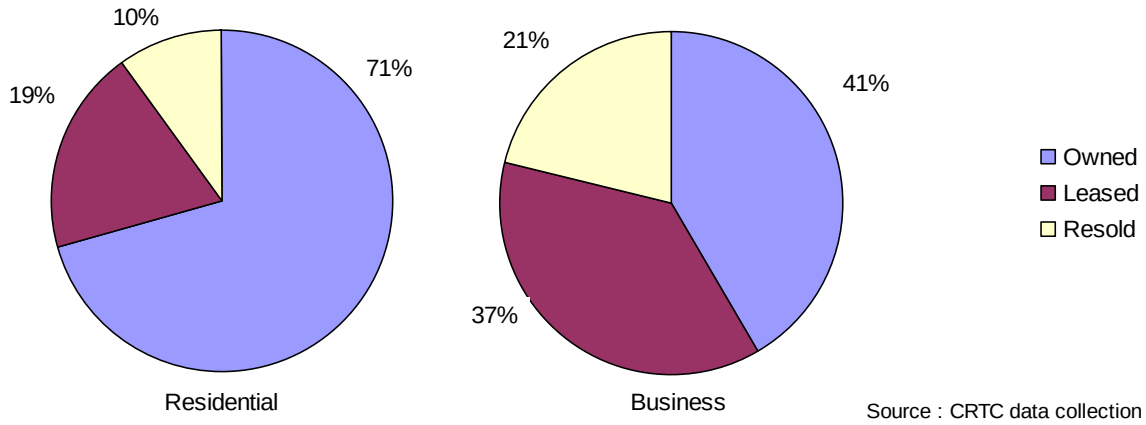


Source: CRTC data collection

As shown in Figure 4.2.2, within the residential segment, 71% of alternative TSP-provided local residential lines were provisioned via their own facilities compared to 41% in the business segment, followed by lines provisioned using unbundled loops leased from the incumbent TSPs, at 19% for the residential segment and 37% for business.

The majority of existing and new residential customers of the cable BDUs are provisioned over their own cable facilities.

Figure 4.2.2
Alternative TSP local residential and business lines
by type of facility
(2006)



Source : CRTC data collection

Table 4.2.11 and Table 4.2.12 present local wholesale revenues and lines, respectively, for the period 2002 to 2006.

Table 4.2.11
Local wholesale revenues
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Incumbent TSPs	836	617	712	698	667	*-4.4%*	*-5.5%*
Incumbent TSPs (out-of-territory)	n/a	70	93	104	134	*28.8%*	*n/a*
Non-incumbent alternative TSPs	57	68	17	26	26	*0.0%*	*-17.8%*
Total	893	755	822	828	827	*-0.1%*	*-1.9%*

n/a: not available

Table 4.2.12
Local wholesale lines
(Thousands)

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Incumbent TSPs	376	408	468 #	458 #	451	*-1.5%*	*4.7%*
Incumbent TSPs (out-of-territory)	43	11	129	303	470	*55.1%*	*81.8%*
Non-incumbent alternative TSPs	102	192	34	41	48	*17.1%*	*-17.2%*
Total	521	611	631 #	802 #	969	*20.8%*	*16.8%*

4.3 Long distance

Highlights

- Long distance revenues continued to decline, decreasing from $5.1 billion in 2005 to $4.7 billion in 2006, a 7.2% decline.
- Long distance minutes continued to grow, increasing from 66.7 billion minutes in 2005 to 71.0 billion in 2006, a 6.4% increase.
- Average residential revenues per minute increased, from $0.097 in 2005 to $0.099 in 2006 and business revenues per minute decreased, from $0.071 in 2005 to $0.063 in 2006.
- The incumbent TSPs', excluding their out-of-territory activities, share of long distance revenues decreased from 64% in 2005 to 61% in 2006.

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,[63] 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 2002 to 2006. During this period, long distance revenues declined at annual rates between a low of 6% in 2004 and a high of 9% in 2003, resulting in an average annual decline of 8.2%. Minutes, however, increased during this period between a low of 2.0% in 2003 and a high of 10.0% in 2005, resulting in an average annual growth rate of 6.0%.

[63] 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

	2002		2003		2004		2005		2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Revenues ($ millions)	6,674	#	6,065	#	5,711	#	5,109		4,742	*-7.2%*	*-8.2%*
Minutes (millions)	56,138	#	57,191	#	60,619	#	66,696	#	70,963	*6.4%*	*6.0%*

Source: CRTC data collection

Long distance revenues as a percent of total telecommunications revenues dropped from 15% in 2005 to 13% in 2006, as long distance revenues declined 7.2% whereas total telecommunications revenues increased by 4.5%.

In 2006, when operating within their traditional territories, the incumbent TSPs had 61% of the long distance revenues, down from 64% in 2005. The resellers and the facilities-based non-incumbent TSPs gained 1% and 2% respectively, increasing their combined share of long distance revenues to 28%, while that of the incumbent TSPs, when operating outside their traditional territory remained unchanged.

In the business market, when operating within their traditional territories, incumbent TSPs and the resellers retained their share of long distance revenues whereas the facilities-based non-incumbent TSPs gained 3%, increasing their revenue share from 12% in 2005 to 15% in 2006 at the expense of the incumbent TSPs (out-of-territory) whose revenue share of the business long distance market dropped from 19% in 2005 to 16% in 2006.

In the residential market, when operating within their traditional territories, the incumbent TSPs lost 4% of the long distance revenues to the resellers and the facilities-based non-incumbent TSPs, dropping from 73% in 2005 to 69% in 2006. The resellers gained 2% revenue market share increasing their revenue share from 22% in 2005 to 24% in 2006. The facilities-based non-incumbent TSPs, also increased their share of the residential long distance revenues from 5% in 2005 to 7% in 2006. This can be attributed to the cable BDUs who, having entered the local market, bundled long distance with local service in an effort to make gains in the local market.

With the introduction of access-independent VoIP service which allows consumers to have a local telephone number outside their exchange of residence, consumers can have an alternate means of arranging long distance calls. In 2006, approximately 50% of access-independent VoIP subscribers had a local telephone number which was outside of their exchange of residence.

Furthermore, some TSPs continued to offer either low rates or flat rates or both for traditional long distance service as part of a service bundle. In the local market, TSPs are bundling long distance service as part of a package of services that includes services such as local calling, voice mail boxes and call display.

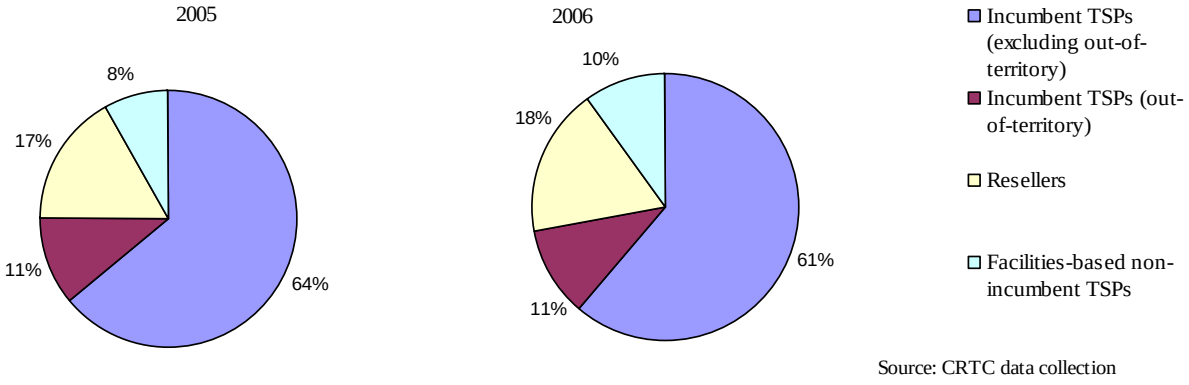
The effects of competition in the long distance market continued to be evident primarily in terms of maintaining or declining prices and the growing number and variety of long distance plans offered by multiple companies. Long distance customers, mainly business, benefited from lower long distance prices as the business average revenue per minute (ARPM) declined from $0.071 in 2005 to $0.063 in 2006. The residential ARPM, however, slightly increased from $0.097 in 2005 to $0.099 in 2006.

c) Sector participants

The sector participants primarily include the large incumbent TSPs, facilities-based alternative TSPs that provide both local and switched long distance services, and a variety of resellers. The majority of the large incumbent TSPs also provide business long distance services outside their traditional operating territories either directly or through affiliates. Incumbent TSPs, when providing services within their traditional operating territories, are referred to as incumbent TSPs (excluding out-of-territory) and when providing services outside of their usual territories, are referred to as incumbent TSPs (out-of-territory). The other TSPs generally consist of (a) facilities-based non-incumbent TSPs which include cable BDUs and (b) resellers who purchase long distance minutes and lease facilities from facilities-based carriers on a wholesale basis.

As displayed in Figure 4.3.1, the incumbent TSPs, excluding their out-of-territory operations, accounted for $2.9 billion or 61% of the long distance revenues in 2006, followed by resellers at $0.8 billion or 18%, the incumbent TSPs out-of-territory operations at $0.5 billion or 11% and the facilities-based non-incumbent TSPs at $0.5 billion or 10%. The market share of the incumbent TSPs when operating outside of their traditional territories remained unchanged; whereas when operating within their traditional territories, the incumbent TSPs lost 1% to the resellers and 2% to the facilities-based non-incumbent TSPs.

Figure 4.3.1
Total long distance revenue market share by type of TSP[64]



Source: CRTC data collection

[64] Market share data for 2005 was restated due to a reclassification of the alternative TSPs.

d) Regulatory framework

Competition in the long distance market exists in all of the operating territories of the incumbent TSPs. However, in the case of the operating territory of Northwestel the Commission continues to regulate toll-free services. Competition in the long distance market began in 1990 with the resale of certain switched long distance services (Decision 90-3).[65] In 1992, the market was further opened to include facilities-based carriers (Decision 92-12).[66] 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,[67] Decision 95-19,[68] Decision 97-10,[69] Decision 97-19,[70] Order 99-1202).[71] Pursuant to Decision 97-19, the Commission forbore from regulating the incumbents' long distance service rates, with the exception of Northwestel, and imposed certain regulatory constraints on the incumbents, most notably price ceilings applying to each basic long distance rate schedule. With respect to Northwestel, in Decision 2007-5,[72] the Commission, except for toll-free services, forbore from regulating toll services.

While the Commission has forborne from regulating long distance services, it continues to regulate access tandem and direct connect rates. Access tandem and direct connect rates were updated in 2006, resulting in modifications to the rates paid by long distance service providers to the incumbent TSPs for originating and terminating long distance traffic.[73]

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

66 *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 as amended by erratum 92-12-1, 28 August 1992.

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

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

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

70 *Forbearance – Regulation of toll services provided by incumbent telephone companies*, Telecom Decision CRTC 97-19, 18 December 1997 as amended by Telecom Decision CRTC 97-19-1, 9 March 1998.

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

72 *Price Cap Regulation for Northwestel Inc.*, Telecom Decision CRTC 2007-5, 2 February 2007.

73 *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 2002 to 2006. In 2006, long distance revenues declined by 7.2% to $4.7 billion. The largest reduction was within the residential market where revenues declined by 9.0%.

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

	2002	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2002 - 2006*
Retail							
Residential	3,108 #	3,076 #	2,922 #	2,648 #	2,411	*-9.0%*	*-6.2%*
Business	1,970	1,777	1,790	1,550 #	1,464	*-5.5%*	*-7.2%*
Total retail	5,078 #	4,853 #	4,712 #	4,198 #	3,875	*-7.7%*	*-6.5%*
Wholesale	1,596 #	1,212 #	999 #	911 #	867	*-4.8%*	*-14.1%*
Total	6,674 #	6,065 #	5,711 #	5,109	4,742	*-7.2%*	*-8.2%*

Source: CRTC data collection

Retail long distance

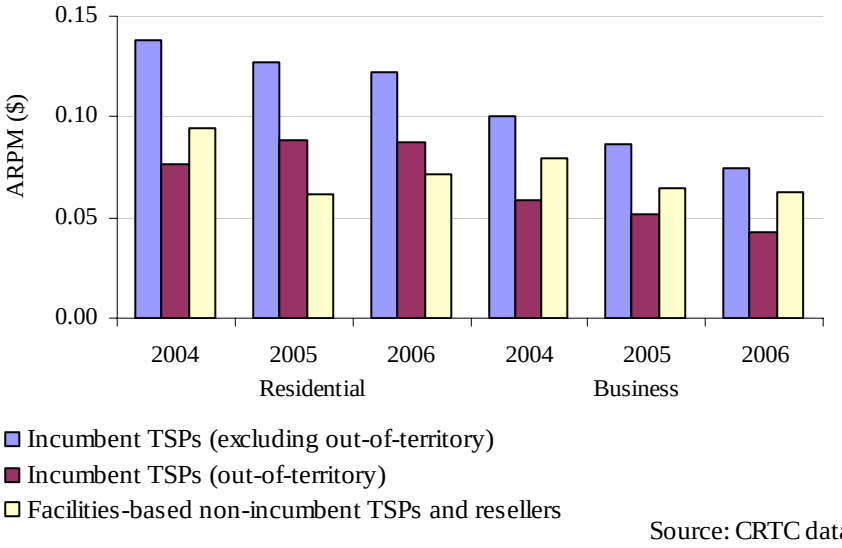
Retail long distance revenues accounted for 82% of total long distance revenues in 2006, essentially unchanged from the previous year. Retail revenues continued to decline, decreasing from $4.2 billion in 2005 to $3.9 billion in 2006, a 7.7% reduction, as:

- residential revenues decreased by 9.0% in 2006 to $2.4 billion; and
- business revenues decreased by 5.5% to $1.5 billion.

Figure 4.3.2 shows the retail average revenues per minute (ARPM) from 2004 to 2006:

- in the residential market, the incumbent TSPs', excluding their out-of-territory operations, ARPM declined by 4% over the previous year to $0.122, and when operating outside of their traditional territory it declined by 1% to $0.087 whereas the facilities-based non-incumbent TSPs and resellers increased their ARPM by 15% to $0.071.
- business ARPM, already significantly below the residential ARPM, declined 13% to $0.075 for the incumbent TSPs when operating within their traditional territories and it declined 17% to $0.043 when operating outside of their traditional territories. For the facilities-based non-incumbent TSPs and resellers it declined 4% to $0.062.

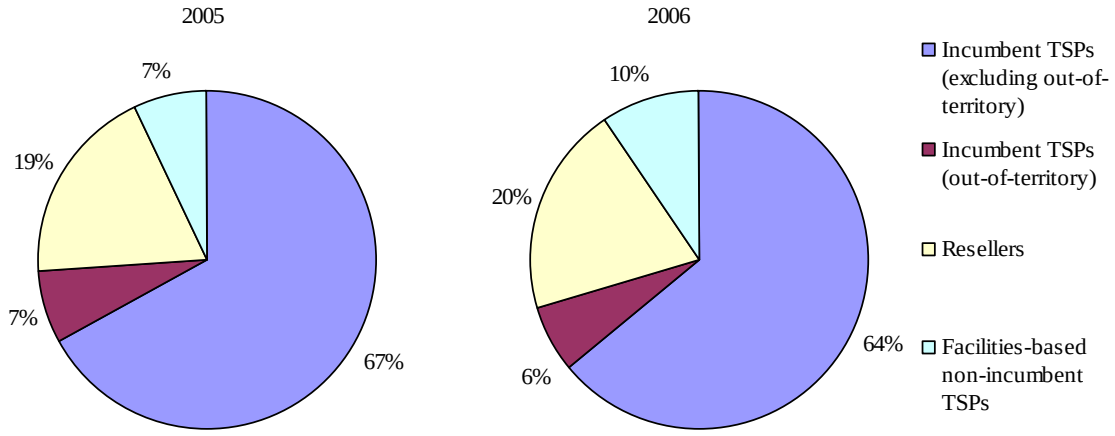
Figure 4.3.2
Residential and business ARPM



Source: CRTC data collection

Figure 4.3.3 depicts retail revenue market share in 2005 and 2006. In 2006 the incumbent TSPs, excluding their out-of-territory operations, accounted for $2.5 billion or 64% of the retail long distance revenues, decreasing from 67% in 2005. When combined with their out-of-territory operations which declined slightly from 7% in 2005 to 6% in 2006, their retail revenue market share in 2006 was 70% representing $2.7 billion. Facilities-based non-incumbent TSPs gained revenue market share which increased from 7% in 2005 to 10% in 2006 representing $0.4 billion in retail long distance revenues. Similarly, resellers gained revenue market share which increased from 19% in 2005 to 20% in 2006 representing $0.8 billion in retail long distance revenues.

Figure 4.3.3
Retail long distance revenue market share[74]
by type of TSP



Source: CRTC data collection

Table 4.3.3[75] provides the large incumbent TSPs' retail long distance revenue market shares for the 2003 to 2006 period.

Table 4.3.3
Large incumbent TSPs' retail long distance
Revenue market share by region

Region	Percent				
	2003	2004	2005		2006
British Columbia, Alberta	72%	69%	68%	#	66%
Saskatchewan	82%	84%	84%		79%
Manitoba	76%	84%	86%		84%
Ontario, Quebec	66%	65%	61%	#	57%
Atlantic	75%	78%	77%		79%

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 2006 period. Residential long distance revenues in 2006 were $2.4 billion, decreasing 8.9% or $237 million from the previous year. When operating outside their traditional territory, the incumbent TSP revenues decreased 11.7% or $1 million in 2006, while revenues from the facilities-based non-incumbent TSPs and resellers increased by 4.3% or $31 million.

[74] The cable BDUs' share of long distance revenues was negligible in 2005.
[75] The incumbent TSPs market share data in Table 4.3.3 exclude their out-of-territory revenue market share.

Table 4.3.4
Residential long distance revenues
($ millions)

	2003	2004	2005	2006	*Growth 2005 - 2006*	*CAGR 2003 - 2006*
Incumbent TSPs (excluding out-of-territory)	2,300	2,135	1,922	1,655	*-13.9%*	*-10.4%*
Incumbent TSPs (out-of-territory)	1	2	6	5	*-11.7%*	*74.3%*
Facilities-based non-incumbent TSPs & resellers	775 #	785 #	720 #	751	*4.3%*	*-1.0%*
Total	3,076 #	2,922 #	2,648 #	2,411	*-8.9%*	*-7.8%*

Source: CRTC data collection

In 2006, residential long distance minutes declined 10.7% to 24.2 billion minutes.

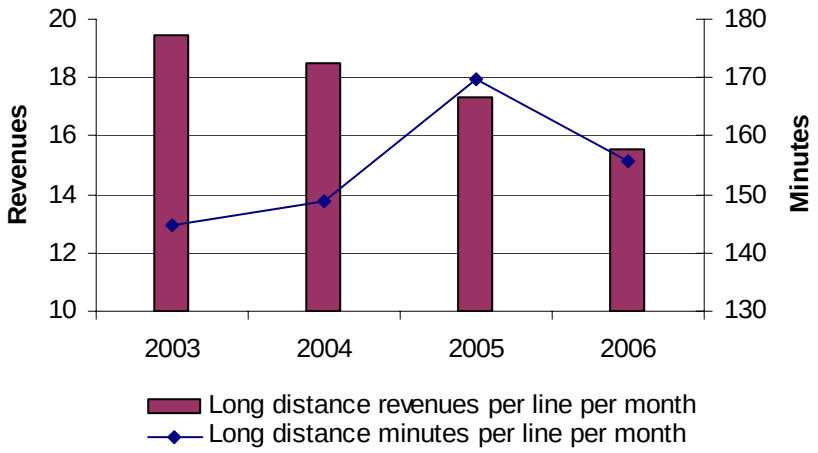
Table 4.3.5
Residential long distance minutes
(millions)

	2003	2004	2005	2006	*Growth 2004 - 2005*	*CAGR 2003 - 2005*
Incumbent TSPs (excluding out-of-territory)	16,295	15,383	15,100	13,569	*-10.1%*	*-5.9%*
Incumbent TSPs (out-of-territory)	5	26	68	60	*-11.8%*	*128.9%*
Facilities-based non-incumbent TSPs & resellers	6,747 #	8,314 #	11,887 #	10,526	*-11.5%*	*16.0%*
Total	23,047 #	23,723 #	27,055 #	24,155	*-10.7%*	*1.6%*

Source: CRTC data collection

Figure 4.3.4 provides average monthly residential long distance revenues per residential local line for the 2003 to 2006 period. Long distance revenues on a per residential line basis, declined by 6.2% in 2005, resulting in an annual decline of 5.7% over the 2003 to 2005 period. Conversely, the long distance minutes on a per line basis increased in 2005 by 14.2% from 2004, resulting in annual growth rate of 8.4% from 2003 to 2005 period. However, in 2006, both long distance revenues and minutes on a per line basis declined by 10% and 8% respectively.

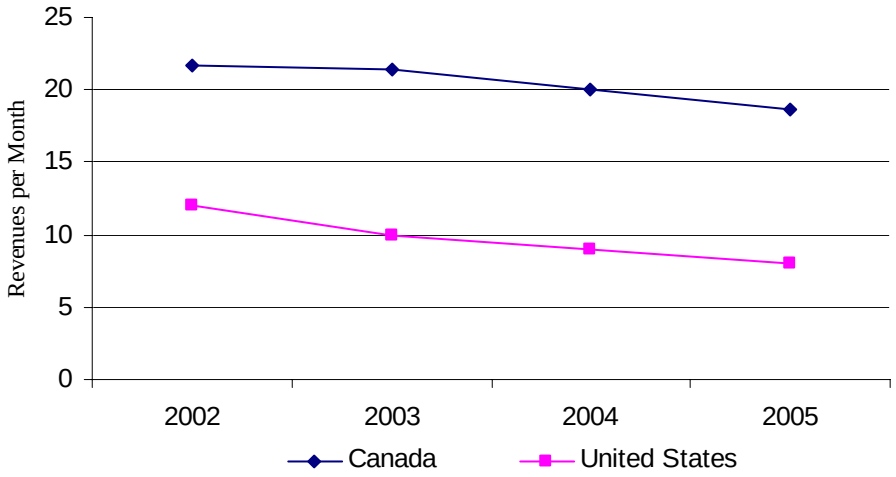
Figure 4.3.4
Average monthly residential long distance revenues and minutes per local line



Source: CRTC data collection

Figure 4.3.5 compares long distance revenues per household in Canada to that in the United States for the most recent period available. Long distance revenues per household per month declined more quickly in the United States than in Canada, 33% versus 14% respectively[76] over the 2002 to 2005 period.

Figure 4.3.5
Comparison of monthly long distance revenues per household Canada and United States (in local currency)

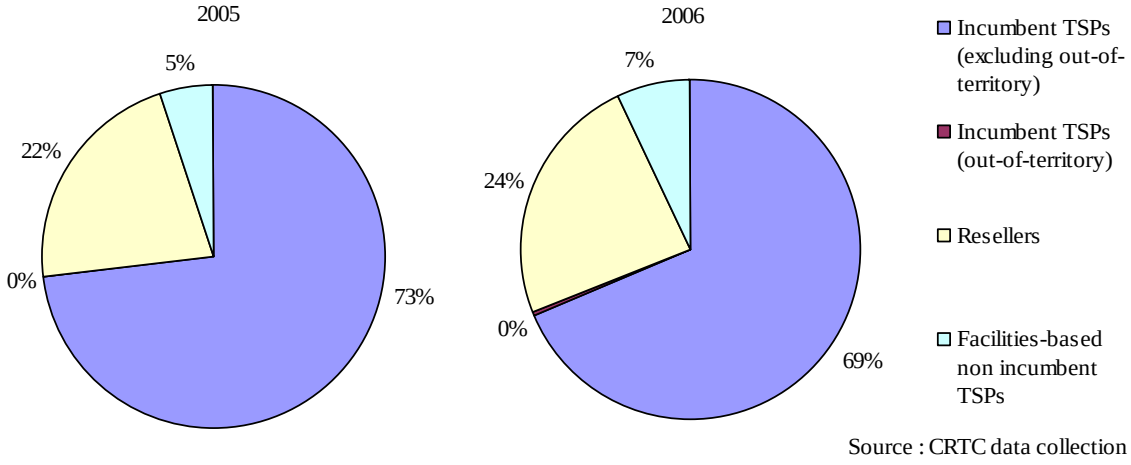


Source: FCC, Statistics Canada, CRTC data collection

[76] Source: Federal Communications Commission, Industry Analysis & Technology Division Wireline Competition Bureau (2006), Statistics Canada, and CRTC data collection.

The residential long distance revenue market shares are shown in Figure 4.3.6. When operating within their traditional territory, the incumbent TSP revenue market share declined from 73% in 2005 to 69% in 2006, while the facilities-based non-incumbent TSP revenue market share increased from 5% to 7% and the resellers revenue market share increased from 22% in 2005 to 24% in 2006.

Figure 4.3.6
Residential long distance revenue market share by type of TSP



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 2004 to 2006 period. In 2006, business long distance revenues declined by 5.6% to $1.5 billion, while minutes increased by 5.8% to 23.1 billion minutes, resulting in a reduction in the business ARPM from $0.071 per minute in 2005 to $0.063 per minute in 2006.

Table 4.3.6
Business long distance revenues
($ millions)

	2004	2005		2006	*Growth 2005-2006*	*CAGR 2004-2006*
Incumbent TSPs (excluding out-of-territory)	1,067	873		812	*-7.0%*	*-12.8%*
Incumbent TSPs (out-of-territory)	332	295		240	*-18.7%*	*-15.0%*
Facilities-based non-incumbent TSPs & resellers	390	382	#	412	*7.9%*	*2.8%*
Total	1,789	1,550	#	1,464	*-5.6%*	*-9.5%*

Source: CRTC data collection

Table 4.3.7
Business long distance minutes
(millions)

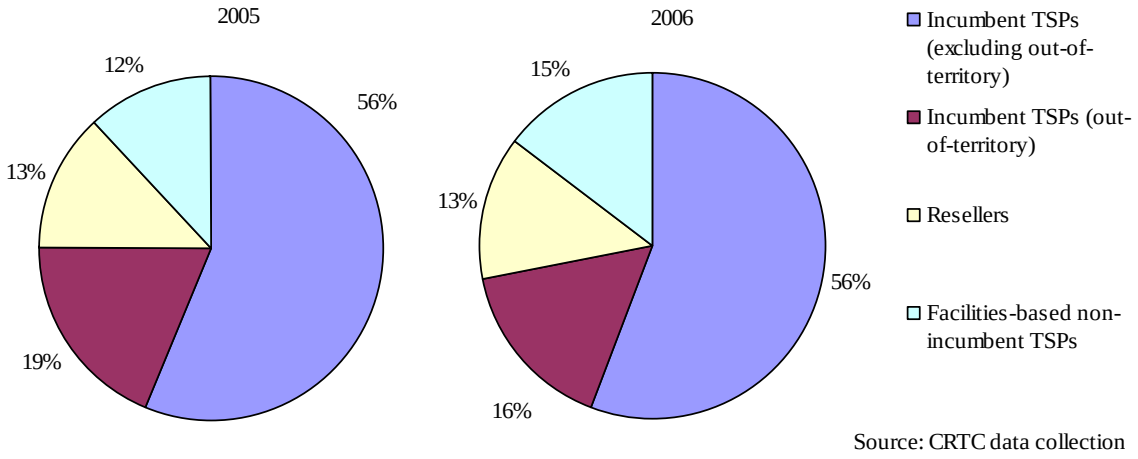
	2004	2005	2006	*Growth 2005-2006*	*CAGR 2004-2006*
Incumbent TSPs (excluding out-of-territory)	10,585	10,208	10,865	*6.4%*	*1.3%*
Incumbent TSPs (out-of-territory)	5,584	5,674	5,582	*-1.6%*	*0.0%*
Facilities-based non-incumbent TSPs & resellers	4,882	5,918	6,621	*11.9%*	*16.5%*
Total	21,051	21,800	23,068	*5.8%*	*4.7%*

Source: CRTC data collection

As displayed in Table 4.3.6, when operating outside of their traditional territory, the incumbent TSP business long distance revenues decreased $55 million or 18.7% in 2006, while the facilities-based non-incumbent TSP and reseller revenues increased by $30 million or 7.9%. As well, when operating within their traditional territory, the incumbent TSP minutes increased 657 million minutes or 6.4% while the facilities-based non-incumbent TSP and reseller minutes increased 703 million minutes or 11.9% over the previous year.

The incumbent TSPs generally focused their out-of-territory activities on the business market rather than the residential market. In the business market, their out-of-territory activities captured approximately 16% of the business revenues compared to a negligible share of the residential revenues. In comparison to the residential market, where the incumbent TSPs', excluding their out-of-territory operations, lost 4% revenue market share in 2006, they maintained their 56% market share of business revenues, as shown in Figure 4.3.7.

Figure 4.3.7
Business long distance revenue market share by type of TSP



Source: CRTC data collection

Resellers had a greater share of residential long distance revenues (24%) than of business long distance revenues (13%). This may be attributed to the lower margins inherent in a reseller's operations than those for a facilities-based TSP which limit its ability to compete on price in the business market with the facilities-based long distance TSP.

Wholesale long distance

Table 4.3.8 displays wholesale long distance revenues for the 2004 to 2006 period. In 2006, wholesale long distance revenues decreased by 4.8% from $911 million to $867 million. When operating within their traditional territory, the incumbent TSPs' revenues decreased by 14.6% or $69 million to $400 million whereas the facilities-based non-incumbent TSPs and resellers increased their wholesale revenues by $25 million or 14.3% to $197 million.

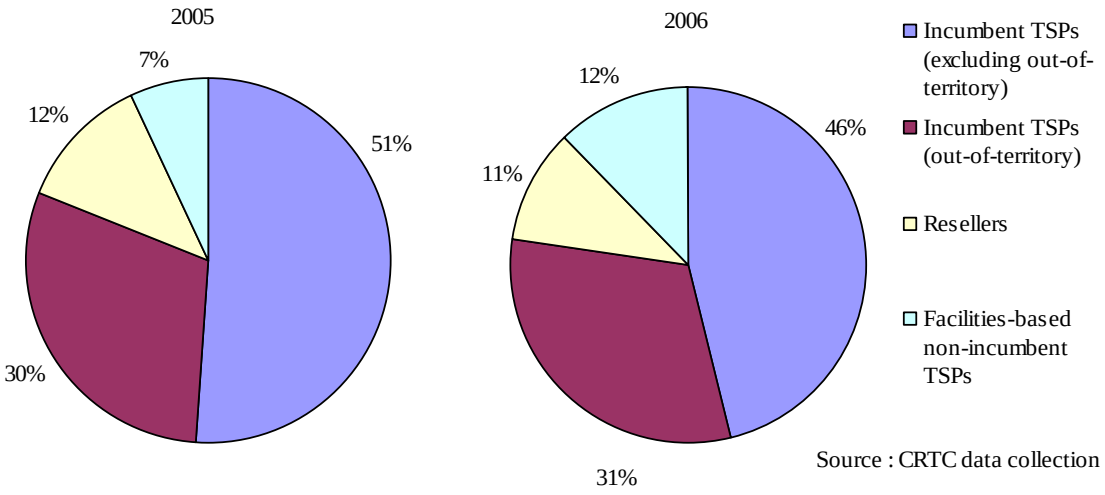
Table 4.3.8
Wholesale long distance revenues
($ millions)

	2004		2005		2006	*Growth 2005-2006*	*CAGR 2004-2006*
Incumbent TSPs (excluding out-of-territory)	530		469		400	*-14.6%*	*-13.1%*
Incumbent TSPs (out-of-territory)	270		270		270	*0.0%*	*0.0%*
Facilities-based non-incumbent TSPs and resellers	199	#	172	#	197	*14.3%*	*-0.6%*
Total	999	#	911	#	867	*-4.8%*	*-6.8%*

Source: CRTC data collection

Figure 4.3.8 displays the wholesale long distance revenue market share for 2005 and 2006 by type of TSP. The incumbent TSPs' share of long distance wholesale revenues when operating within their traditional territories, decreased from 51% in 2005 to 46% in 2006. With respect to their out-of-territory operations, their share of long distance wholesale revenues increased from 30% in 2005 to 31% in 2006. The resellers' revenue market share of wholesale revenues declined by 1% while that of the facilities-based non-incumbent TSPs increased by 5%.

Figure 4.3.8
Wholesale long distance revenue market share
by type of TSP



Source : CRTC data collection

4.4 Internet service and broadband availability

Highlights

- Internet revenues increased 11.2% from $4.5 billion in 2005 to $5.0 billion in 2006, making it one of the fastest growing segments of the Canadian telecommunications services industry.
- The number of households with Internet access subscriptions reached 8.7 million in 2006, representing 70% of all Canadian households. The number of households with high-speed Internet access reached 7.5 million households or 60% of all Canadian households, up from 51% in the previous year.
- Dial-up subscriptions continued to decrease, declining 21% in 2006. As a percent of total subscriptions, dial-up subscriptions declined from 20% in 2005 to 14% in 2006.
- Virtually all Canadian households in urban centres and 78% of households in rural areas were within the broadband footprint in 2006.
- Broadband is available to all Canadians via satellite. However, due to capacity limitations, this increases availability of broadband from 92% landline availability to a combined landline and satellite availability of 93% of all households.

Sector description

a) Description of services

Internet-related telecommunications services can be divided into two broad market segments: (i) Internet access and transport; and (ii) Internet applications and other Internet related services. All of these services are sold on a retail and wholesale basis.

Internet access and transport

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 Internet Service Provider (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;
    - 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 Internet access services.

Internet transport service is a type of Internet connectivity typically sold to ISPs and some larger business customers. Internet transport capacity is provided over Internet backbone facilities that carry aggregated traffic across domestic and international 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.

Internet applications and other Internet related services

Internet applications include a growing number of services which piggyback on the Internet connectivity services. They include e-mail and Web hosting, among others. Typically, many of the Internet application services are bundled together with Internet access services. However, TSPs also 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. In addition, TSPs have also been entering new media markets for services such as music downloads and online gaming.

This category also includes both retail and wholesale revenues from equipment sales related to Internet access service, and network security. Due to industry practice, modem rental fees are included with Internet access service as they are an integral part of the offered package. In 2006, approximately 15% of these revenues were related to wholesale activities.

b) Markets and observations for 2006

Internet-related telecommunications revenues in Canada were $5.0 billion in 2006, representing an increase of 11.2% over the previous year. Based on Table 4.4.1, retail Internet access and transport services accounted for approximately 80% of the total Internet revenues in 2006. The annual growth, however, in retail access and transport revenues has been declining from 18.6% in 2003 to 10% in 2006.

Table 4.4.1
Internet revenues
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Internet access and transport							
Retail	2,601.4	3,084.1	3,385.5	3,741.1 #	4,115.0	*10.0%*	*12.1%*
Wholesale	292.1	173.3	210.4	205.9	201.7	*-2.0%*	*-8.8%*
Subtotal	2,893.4	3,257.4	3,595.8	3,947.0 #	4,316.7	*9.4%*	*10.5%*
Applications, equipment and other Internet related services							
Retail and wholesale	391.1	431.8	568.6	583.3 #	720.3	*23.5%*	*16.5%*
Total Internet revenues	3,284.5	3,689.2	4,164.5	4,530.3	5,037.0	*11.2%*	*11.3%*

Source: CRTC data collection

Municipal and hydro utility service providers have increasingly become involved in providing wireless Internet access to the general public. Among these is Toronto Hydro Telecom, which in 2006 created a wireless network that spans parts of downtown Toronto. Also, in 2007 the Government of Saskatchewan is expected to begin offering free WiFi based Internet access in downtown business districts and post-secondary educational institutions in Regina, Saskatoon, Prince Albert and Moose Jaw. In addition, municipal governments have been involved in partnering with and/or partially funding private industry to serve unserviced areas.

Another growing trend is the offering of "hotspot"[77] wireless Internet access for a fee or as a pack-in or amenity in hotels, coffee shops, restaurants, and other public establishments. In addition, a major ISP, Cogeco Cable, recently began to offer WiFi service in various locations around Burlington, Oakville, and Hamilton, Ontario for free to its cable Internet access customers.

Early in 2006, Rogers and Bell Canada introduced a portable[78] Internet offering in several Canadian cities that utilises the wireless spectrum of Inukshuk Wireless Partnership and non-line-of-sight technology.

c) Sector participants

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

- Incumbent TSPs 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.

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[77] Hotspot Internet access is the provision of short range wireless Internet access to the public in a specific venue, such as a coffee shop, hotel, airport waiting area or conference centre. Such offerings lack the broad portability of outdoor wide area deployments. They are operationally more similar to pay telephone access than to home telephone or wireless phone service.

[78] Portable in this context refers to the ability of readily moving the equipment from any location to another location within the service area and resume use of the service at the new location.

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

- Utility telcos and other carriers who own facilities and who mainly provide service via dial-up, DSL, fibre, satellite and/or fixed wireless, as well as municipal and utility company affiliated service providers.

- Resellers who do not own their own telecommunications facilities. They mainly provide service via dial-up, DSL and fibre.

ISPs are categorized based on the description of service providers in section 3.1. Large and small incumbent TSPs when operating within their traditional incumbent territories are categorized as "incumbent TSPs (excluding out-of-territory)". When operating outside of their traditional territories, they are referred to as "incumbent TSPs (out-of-territory)".

As cable BDUs are significant service providers in the Internet market, they are identified separately in this section and referred to as "cable BDUs". The remaining service providers are combined together and referred to as "resellers, utility telcos and other carriers".

d) Regulatory framework

While retail Internet access services are forborne from regulation under the Act, the Commission continues to regulate the provision of wholesale Internet access services. In the case of the incumbent TSPs, wholesale Internet access services 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 wholesale Internet access services.

In 1999, in its consideration of an appropriate framework for new media,[79] 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.

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

Regulatory developments in the past year

In culmination of an industry consultation, the Commission ordered several incumbent TSPs to file tariffs for their wholesale DSL services. The Commission approved,[80] with changes, on a final basis the tariffs for DSL access services provided by Bell Aliant,[81] Bell Canada,[82] MTS Allstream,[83] SaskTel,[84] and TCC.[85]

As part of the finalization of these tariffs, the Commission gave approval to lower loop rates in situations where an incumbent TSP's DSL services are provided to ISPs using loops that are not providing primary exchange service (PES). These new rates were filed in response to Commission orders[86] typically reducing the unbundled loop rate by 50% for lines utilised in this configuration, permitting an ISP to provide high-speed Internet service utilising DSL facilities without the need for the end-user to subscribe to local telephone service from a TSP over the same access line.

After an extensive proceeding, the Commission rendered Decision 2006-77,[87] where it approved on a final basis, with modifications, proposed rates for third party Internet access (TPIA) service for Cogeco Cable, Rogers, Videotron Ltd., and Shaw Cablesystems G.P. Changes were made in several tariffs with regard to rates and speed choices, in order to facilitate competitive use of these facilities and to provide comparable TPIA services across cable carriers' operating regions.

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80 Implementation of these orders, except for Telecom Order CRTC 2007-23 pertaining to MTS Allstream, are currently subject to stay of execution and review and vary applications by Bell Aliant and Bell Canada – Application for a stay of execution of Orders 2007-20, 2007-21 and 2007-22 (Commission file 8680-B2-200702805, 16 February 2007) and Application to review, rescission and vary of Orders 2007-20, 2007-21 and 2007-22 (Commission file 8662-B2-200702771, 16 February 2007); SaskTel – Application for a stay of execution of Orders 2007-20 and 2007-24 (Commission file 8680-S22-200703026, 21 February 2007) and Application to review and vary Order 2007-24 (Commission file 8662-S22-200704199, 14 March 2007); and TCC – Application to review and vary Order 2007-25 (Commission file 8662-T66-200704462, 19 March 2007) and Application for a stay of execution of Order 2007-25 (Commission file 8680-T66-200707325, 10 May 2007).

81 *ADSL Access Service and ADSL WAN Service*, Telecom Order CRTC 2007-21, 25 January 2007.

82 *Gateway Access Service and High Speed Access Service*, Telecom Order CRTC 2007-22, 25 January 2007.

83 *Asymmetric Digital Subscriber Line (ADSL) Data Access Service*, Telecom Order CRTC 2007-23, 25 January 2007.

84 *Aggregated Asymmetric Digital Subscriber Line (ADSL) Service*, Telecom Order CRTC 2007-24, 25 January 2007.

85 *Network-to-Network Interface Service, Wide Area Network ADSL Service, and Wholesale Internet ADSL Service*, Telecom Order CRTC 2007-25, 25 January 2007.

86 The Commission issued orders to Bell Canada in *Gateway Access Service over dry loops*, Telecom Order CRTC 2005-415, 22 December 2005, and to SaskTel in – *Aggregated Asymmetric Digital Subscriber Line (ADSL) Service, and Ethernet Access Services and Agreement*, Telecom Order CRTC 2006-64, 27 March 2006, and issued a show cause letter on 4 May 2006 to Bell Aliant, MTS Allstream and TCC.

87 *Cogeco, Rogers, Shaw and Vidéotron – Third-party Internet access service rates*, Telecom Decision CRTC 2006-77, 21 December 2006.

In Decision 2006-9,[88] the Commission determined that communities located in rural and remote areas unlikely to receive broadband services from any service provider in the near future could receive broadband expansion through monies accumulated in the deferral accounts[89] of the incumbent TSPs. Deployment was to be based on least-cost technology and include backbone and access facilities. Only the uneconomic portion of the initiatives would be funded through the deferral accounts. The incumbent TSPs were to make backbone facilities funded through the deferral accounts available to other TSPs at a minimal rate, and any wholesale broadband services that they offered were to be made available to TSPs in all funded communities. It should be noted, however, that Decision 2006-9 has been appealed and that parties are in the process of filing their pleadings with the Court.

Although Decision 2006-9 has been appealed, the Commission issued Public Notice 2006-15[90] to initiate a proceeding to review the proposals submitted by the large incumbent TSPs pursuant to Decision 2006-9.

Market segments

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

The annual growth rate for residential Internet access revenues has consistently declined since 2003, from a 17.3% growth rate to 12.4% in 2006. Similarly, the annual growth rate for business Internet access and transport revenues has also consistently declined but at a faster pace, declining from a growth of 22.2% in 2003 to 2.4% in 2006.

Nevertheless, the average annual growth rate for both retail segments combined was 12.1% over the 2002 to 2006 period, making the retail Internet access and transport service market one of the fastest growing segments in the telecommunications industry.

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

89 The deferral accounts were created by Decisions 2002-34 and 2002-43. The incumbent TSP 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, in order to avoid a negative impact on local competition.

90 *Review of proposals to dispose of the funds accumulated in the deferral accounts*, Telecom Public Notice CRTC 2006-15, 30 November 2006.

Table 4.4.2
Internet access and transport service revenues
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Residential	1,943.0	2,279.5	2,523.6	2,838.4 #	3,191.1	*12.4%*	*13.2%*
Percent of total retail	*74.7%*	*73.9%*	*74.5%*	*75.9%*	*77.5%*		
Business	658.4	804.6	861.9	902.7	923.9	*2.4%*	*8.8%*
Percent of total retail	*25.3%*	*26.1%*	*25.5%*	*24.1%*	*22.5%*		
Retail subtotal	2,601.4	3,084.1	3,385.5	3,741.1 #	4,115.0	*10.0%*	*12.1%*
Wholesale	292.1	173.3	210.4	205.9	201.7	*-2.0%*	*-8.8%*
Total	2,893.4	3,257.4	3,595.8	3,947.0 #	4,316.7	*9.4%*	*10.5%*

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 incumbent TSPs (excluding out-of-territory) and the cable BDUs are the major players with revenue market shares of 42% and 44%, respectively, in 2006, changed from 43% and 41%, respectively in 2005. The market share of the incumbent TSPs when operating outside their traditional territories, resellers, utility telcos and other carriers declined from 16% in 2005 to 14% in 2006. Over the 2003 to 2006 period, the revenue market share for this group of TSPs has declined from 23% in 2003 to 14%. Smaller, standalone, single-service ISPs may have challenges retaining their subscriber base in an increasingly converged industry.

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

	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2003-2006*
Incumbent TSPs (excluding out-of-territory)	1,219.0	1,432.4	1,601.9 #	1,724.7	*7.7%*	*12.3%*
Market share	*40.1%*	*42.9%*	*43.3%*	*42.4%*		
Cable BDUs	1,108.2	1,284.6	1,520.1	1,790.8	*17.8%*	*17.3%*
Market share	*36.5%*	*38.5%*	*41.1%*	*44.1%*		
Incumbent TSPs (excluding out-of-territory) and cable BDUs subtotal	2,327.2	2,717.0	3,122.0 #	3,515.5	*12.6%*	*14.7%*
Market share	*76.6%*	*81.4%*	*84.4%*	*86.5%*		
Other TSPs	710.3	622.8	578.0	549.8	*-4.9%*	*-8.2%*
Market share	*23.4%*	*18.6%*	*15.6%*	*13.5%*		
Total	3,037.5	3,339.8	3,700.0 #	4,065.3	*9.9%*	*10.2%*

Source: CRTC data collection

As shown in Table 4.4.4, the four largest Internet access service providers[91] and their affiliates continue to dominate the market for retail Internet access, growing from 60% in 2003 to 67% in 2006.

[91] The four largest companies are Bell Canada, TCC, Rogers, and Shaw and their affiliates.

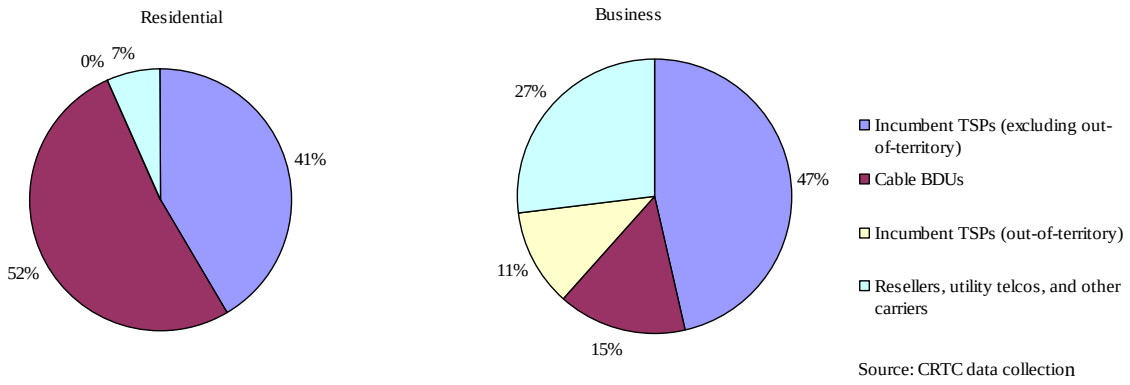
Table 4.4.4
Top four retail Internet companies' revenues
($ millions)

	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2003-2006*
Four largest companies	1,817.5 #	2,193.2 #	2,504.7 #	2,728.9	*9.0%*	*14.5%*
Market share	*59.8%*	*65.7%*	*67.7%*	*67.1%*		
Others	1,220.0	1,146.6	1,195.3	1,336.3	*11.8%*	*3.1%*
Market share	*40.2%*	*34.3%*	*32.3%*	*32.9%*		
Total	3,037.5	3,339.8	3,700.0 #	4,065.3	*9.9%*	*10.2%*

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 2006. It should be noted that, as a group, resellers, utility telcos and other carriers and incumbent TSPs (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 TSP
(2006)



a) Residential Internet access market

Table 4.4.5 illustrates residential Internet access revenues by type of provider for the period 2002 to 2006. Incumbent TSPs when operating outside of their traditional territories have minimal operations with respect to the residential Internet access market. As shown in Table 4.4.5, as a group, the other TSPs have been losing market share to the incumbent TSPs and cable BDUs. As shown in Figure 4.4.1, the incumbent TSPs and the cable BDUs had approximately 93% of the residential Internet access revenues in 2006.

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

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Incumbent TSPs (excluding out-of-territory)	780.0	892.0	1,041.8	1,206.3 #	1,319.0	*9.3%*	*14.0%*
Market share	*40.1%*	*39.1%*	*41.3%*	*42.5%*	*41.3%*		
Cable BDUs	846.2	1,049.3	1,218.5	1,392.7	1,656.9	*19.0%*	*18.3%*
Market share	*43.6%*	*46.0%*	*48.3%*	*49.1%*	*51.9%*		
Incumbent TSPs (excluding out-of-territory) and cable BDUs subtotal	1,626.2	1,941.3	2,260.3	2,599.0 #	2,975.9	*14.5%*	*16.3%*
Market share	*83.7%*	*85.2%*	*89.6%*	*91.6%*	*93.3%*		
Other TSPs	316.9	338.2	263.3	239.3	215.2	*-10.1%*	*-9.2%*
Market share	*16.3%*	*14.8%*	*10.4%*	*8.4%*	*6.7%*		
Total	1,943.1	2,279.5	2,523.6	2,838.3 #	3,191.1	*12.4%*	*13.2%*

Source: CRTC data collection

The decline in the market share of the other TSPs in residential access 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 4.4.7. Table 4.4.7 indicates that over the 2002 to 2006 period, they had between 2.0% and 4.4% of the high-speed Internet subscribers. Comparing their high-speed and dial-up subscriptions, they had 1.7 times as many dial-up subscribers as high-speed subscribers in 2006 compared to 22 times in 2002.

As previously noted, smaller, standalone, single-service ISPs have challenges retaining their subscriber base in an increasingly converged industry. Many of these TSPs have been unable to convert their dial-up subscribers to their high-speed Internet service. Some of this may be attributed to their limited service offerings which may exclude services such as high-speed lite and may limit their ability to offer service bundles.

Table 4.4.6 shows the residential Internet access revenues by access technology for the 2003 to 2006 period. During this period, there was a continued shift from dial-up facilities in the residential Internet access markets to high-speed Internet facilities utilizing both DSL and cable modem.

As Table 4.4.7 indicates, as of year-end 2006, there were 8.7 million residential Internet access subscriptions, or 70% of all Canadian households. Households with high-speed Internet access reached 7.5 million households, or 60% of all Canadian households, up from 51% in the previous year.

Table 4.4.6
Residential Internet access revenues and market share by access technology

	2003		2004		2005		2006			
	Revenues ($M)	Share*	Revenues ($M)	Share*	Revenues ($M)	Share*	Revenues ($M)	Share*	*Growth 2005-2006*	*CAGR 2003-2006*
Incumbent TSPs (excluding out-of-territory)										
Dial-up	249	44.4%	228	52.7%	192	53.2%	159	57.0%	*-17.3%*	*-13.9%*
High-speed	643	37.4%	813	38.9%	1,014 #	40.9%	1,160	39.8%	*14.4%*	*21.7%*
Subtotal	892	39.1%	1,041	41.3%	1,206 #	42.5%	1,319	41.3%	*9.3%*	*13.9%*
Cable BDUs										
Dial-up	10	1.7%	6	1.4%	13	3.5%	8	2.8%	*-38.5%*	*-7.0%*
High-speed	1,040	60.5%	1,212	58.0%	1,380	56.8%	1,649	56.6%	*19.5%*	*16.6%*
Subtotal	1,049	46.0%	1,218	48.3%	1,393	49.9%	1,657	51.9%	*19.0%*	*16.5%*
Incumbent TSPs (excluding out-of-territory) and cable BDUs subtotal										
Dial-up	259	46.1%	234	54.0%	205	56.7%	167	59.8%	*-18.7%*	*-13.6%*
High-speed	1,683	97.9%	2,025	96.9%	2,394 #	96.7%	2,809	96.5%	*17.3%*	*18.6%*
Subtotal	1,941	85.2%	2,259	89.5%	2,599 #	91.6%	2,976	93.3%	*14.5%*	*15.3%*
Other TSPs										
Dial-up	302	53.9%	199	46.0%	157	43.3%	112	40.2%	*-28.4%*	*-28.2%*
High-speed	36	2.1%	65	3.1%	83	3.3%	103	3.5%	*24.7%*	*42.2%*
Subtotal	338	14.8%	264	10.5%	239	8.4%	215	6.7%	*-10.1%*	*-14.0%*
Total										
Dial-up	561	24.6%	433	17.2%	362	13.0%	279	8.7%	*-22.9%*	*-20.8%*
High-speed	1,719	75.4%	2,090	82.8%	2,477 #	87.0%	2,912	91.3%	*17.6%*	*19.2%*
Grand total	2,279		2,523		2,838 #		3,191		*12.4%*	*11.9%*

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 4.4.7
Residential Internet subscribers by type of TSP

	2002		2003		2004		2005		2006			
	Subscribers /1000	Share*	Subscribers /1000	Share*	Subscribers /1000	Share*	Subscribers /1000	Share*	Subscribers /1000	Share*	*Growth 2005-2006*	*CAGR 2003-2006*
Incumbent TSPs (excluding out-of-territory)												
Dial-up	1,392	46.1%	1,123	44.9%	1,010	49.8%	765	48.8%	642	51.8%	*-16.1%*	*-17.6%*
High-speed	1,400	39.7%	1,859	41.2%	2,268	41.9%	2,676	41.6%	3,095	41.5%	*15.6%*	*21.9%*
Subtotal	2,792	42.7%	2,982	42.5%	3,277	44.0%	3,441	43.0%	3,736	42.9%	*8.6%*	*7.6%*
Cable BDUs												
Dial-up	70	2.3%	44	1.8%	38	1.9%	53	3.4%	38	3.1%	*-28.3%*	*-14.0%*
High-speed	2,055	58.3%	2,532	56.1%	2,933	54.1%	3,467	53.9%	4,041	54.2%	*16.6%*	*18.4%*
Subtotal	2,125	32.5%	2,576	36.7%	2,971	39.9%	3,520	44.0%	4,079	46.9%	*15.9%*	*17.7%*
Incumbent TSPs (excluding out-of-territory) and cable BDUs subtotal												
Dial-up	1,462	48.4%	1,167	46.7%	1,048	51.8%	818	52.2%	680	54.8%	*-16.9%*	*-17.4%*
High-speed	3,456	98.0%	4,391	97.3%	5,201	96.0%	6,143	95.6%	7,136	95.6%	*16.2%*	*19.9%*
Subtotal	4,917	75.1%	5,558	79.3%	6,249	84.0%	6,961	87.0%	7,815	89.8%	*12.3%*	*12.3%*
Other TSPs												
Dial-up	1,558	51.6%	1,333	53.3%	977	48.2%	750	47.8%	560	45.2%	*-25.4%*	*-22.6%*
High-speed	71	2.0%	122	2.7%	216	4.0%	286	4.4%	327	4.4%	*14.2%*	*46.5%*
Subtotal	1,629	24.9%	1,455	20.7%	1,193	16.0%	1,036	13.0%	886	10.2%	*-14.5%*	*-14.1%*
Total												
Dial-up	3,020	46.1%	2,500	35.6%	2,025	27.2%	1,568	19.6%	1,239	14.2%	*-21.0%*	*-20.0%*
High-speed	3,527	53.9%	4,513	64.4%	5,416	72.8%	6,429	80.4%	7,461	85.8%	*16.1%*	*20.6%*
Grand total	6,547		7,013		7,442		7,997		8,700		*8.8%*	*7.4%*

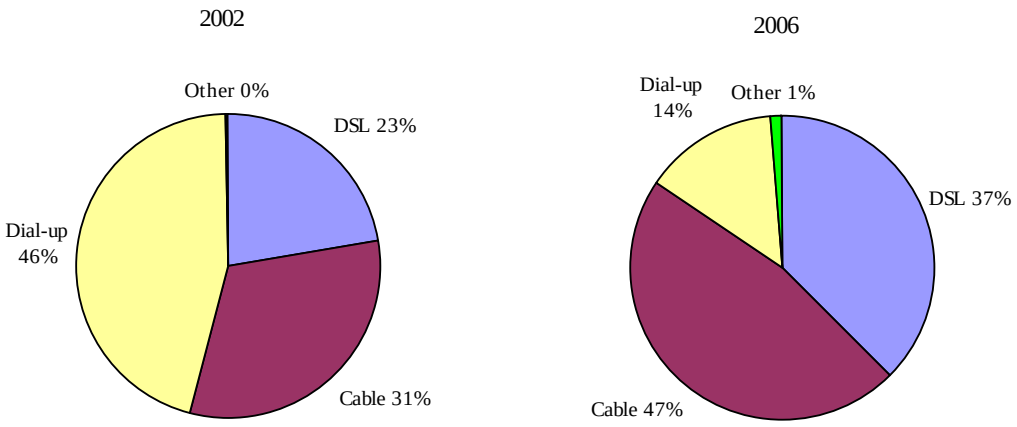
Note: Percentages refer to access mode's proportion of all residential Internet subscriptions of its type, except for the total rows, where they are a proportion of total industry residential subscriptions.

Source: CRTC data collection

As previously noted, there has been a shift in residential Internet access subscriptions from dial-up to high-speed Internet access from 2002 to 2006. As displayed in Figure 4.4.2, in 2002, high-speed access comprised 54% of all Internet connections. High-speed access is now the dominant means of accessing the Internet, comprising 86% of all residential Internet subscriptions.

As further indicated in Table 4.4.7, during the period 2002 to 2006, the number of dial-up subscriptions declined from 3.0 million subscriptions to 1.2 million, an average annual decline of 20%. 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 for prices similar to many dial-up plans. In Table 4.4.7, this service is included in the high-speed category. However, 128 kbps Lite service has been declining, as the industry moves to higher speed basic access tiers. Further pricing details may be found in Table 4.4.8.

Figure 4.4.2
Residential Internet access technology mix
(2002 v. 2006)



Source: CRTC data collection

In 2002, cable modem subscriptions were approximately 1.5 times that of DSL. The gap or difference between the number of cable modem subscriptions and the number of DSL subscriptions has been steadily narrowing to the point where by 2004 the gap was 1.2 cable modem subscriptions per DSL subscription. However, by 2006, this trend stopped and the gap started to widen, to the point where by year end 2006 cable modem subscription were 1.26 times that of DSL subscriptions.

Table 4.4.8 provides the effective pricing for residential wireline broadband access products from major facilities-based providers.[92] Weighed average upload speed was computed by utilising the number of subscribers in each plan as a weighting factor.

Table 4.4.8
Internet plans and pricing
(2006)

Downstream speed	One month revenue ($M)	Subscribers (thousands)	Average revenue per subscriber	Weighted average upload speed (kbps)
Lite and wideband up to 256 kbps	16.0	698.3	$22.91	94
Wideband 600 - 1000 kbps	28.7	1,014.5	$28.30	306
Broadband 1.5, 2 and 3.0 mbps	35.6	1,038.2	$34.24	537
Broadband 5 mbps	119.9	3,190.5	$37.59	584
Broadband > 5.0 mbps	41.9	938.8	$44.61	789
All speeds	242.1	6,880.3	$35.18	514

Source: CRTC data collection

b) Business Internet access and transport market

As reflected in Table 4.4.9, as a group, the combined market share of the resellers', utility telcos' and other carriers increased slightly in the business segment of the retail Internet access market at 27%, up from 25% in 2005. Although they had the biggest share of the business Internet segment in terms of revenues after the incumbent TSPs (excluding out-of-territory) who had 46%, their market share has been historically declining. The incumbent TSPs (out-of-territory) had approximately 11% of these revenues in 2006. Cable BDUs had 15% of the business Internet access revenues versus 52% of the residential Internet access revenues.

Business Internet transport revenues have remained relatively stable in the past few years.

[92] The companies sampled serve 92% of the residential high-speed subscribers in Canada.

Table 4.4.9
Business Internet access revenues by type of TSP and transport
($ millions)

	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2003-2006*
Incumbent TSPs (excluding out-of-territory)	327.0	390.6	395.6	405.7	*2.5%*	*7.5%*
Market share	*43.1%*	*47.9%*	*45.9%*	*46.4%*		
Cable BDUs	58.9	66.1	127.3	133.8	*5.1%*	*31.5%*
Market share	*7.8%*	*8.1%*	*14.8%*	*15.3%*		
Incumbent TSPs (excluding out-of-territory) and cable BDUs subtotal	385.9	456.7	522.9	539.5	*3.2%*	*11.8%*
Market share	*50.9%*	*56.0%*	*60.7%*	*61.7%*		
Other TSPs						
Incumbent TSPs (out-of-territory)	35.1	105.5	124.7	98.2	*-21.3%*	*40.9%*
Market share	*4.6%*	*12.9%*	*14.5%*	*11.2%*		
Resellers, utility telcos and other carriers	337.0	254.0	213.9	236.4	*10.5%*	*-11.1%*
Market share	*44.5%*	*31.1%*	*24.8%*	*27.0%*		
Other TSPs subtotal	372.1	359.5	338.7	334.6	*-1.2%*	*-3.5%*
Market share	*49.1%*	*44.0%*	*39.3%*	*38.3%*		
Total access	757.9	816.2	861.6	874.2	*1.5%*	*4.9%*
Total transport	46.7	45.7	41.1	49.8	*21.1%*	*2.1%*
Total	804.6	861.9	902.7	923.9	*2.4%*	*4.7%*

Source: CRTC data collection

Table 4.4.10
Business Internet access revenues by access technology

	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2003-2006*
Dial-up	121.1	126.0	100.3	75.1	*-25.2%*	*-14.7%*
DSL	287.6	284.0	340.0	400.4	*17.8%*	*11.7%*
Cable	44.0	58.0	74.7	79.7	*6.7%*	*21.9%*
Fibre	253.7	283.1	297.8	247.0	*-17.1%*	*-0.9%*
Other	51.5	65.2	48.7	72.0	*47.8%*	*11.8%*
Total	757.9	816.2	861.6	874.2	*1.5%*	*4.9%*

Source: CRTC data collection

Note: Other includes the remaining technologies such as, but not limited to, ISDN, fixed wireless and satellite.

c) Wholesale Internet access and transport

Wholesale Internet access and transport services are generally sold to ISPs. These services are used by the ISPs to provide Internet access service to their retail customers.[93] Internet transport is used by the ISPs to provide full connectivity to the Internet for their Internet subscribers. Wholesale fibre-optic access and transport tend to be utilised by ISPs for this purpose. Sales to non-ISP entities, such as VoIP service providers, are also included in the wholesale revenues presented in Table 4.4.11 as "higher capacity access and transport" revenues.

"Lower capacity access" includes services such as Bell Canada's Gateway Access Service (GAS), TCC's virtual point of presence (VPOP) DSL, and cable BDU provided TPIA service, as well as satellite capacity, and dial-up bundled with Internet access sold to ISPs.

Table 4.4.11
Wholesale Internet access and transport revenues
($ millions)

	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2003-2006*
Higher capacity access and transport	95.0	107.0	95.3	77.1	*-19.1%*	*-6.7%*
Lower capacity access	78.3	103.4	110.6	124.6	*12.7%*	*16.7%*
Total	173.3	210.4	205.9	201.7	*-2.0%*	*5.2%*

Source: CRTC data collection

[93] It should be noted that, as with other telecommunications service categories, any accounting of wholesale services utilised to build Internet services will be incomplete, as data and private line services are often utilised as building blocks to create Internet access services, both to provide access to end-user customers, and to build ISPs' internal networks. For a more complete inventory of Intercarrier expenses, see section 4.1.

Broadband availability

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.

As discussed in part (e) Regulatory developments, in Decision 2006-9 the Commission determined that monies, up to 95% of the approximately $650 million[94] in the large incumbent TSP deferral accounts, could be utilised to expand broadband deployment in rural and remote communities.[95] As previously noted, however, Decision 2006-9 has been appealed and parties are in the process of filing their pleadings with the Court.

Although Decision 2006-9 has been appealed, the Commission issued Public Notice 2006-15 to initiate a proceeding to review the proposals submitted by the large incumbent TSPs pursuant to Decision 2006-9. If approved, these proposals would expand broadband services to rural and remote communities, in Alberta, British Columbia, Manitoba, Ontario and Quebec over five years.

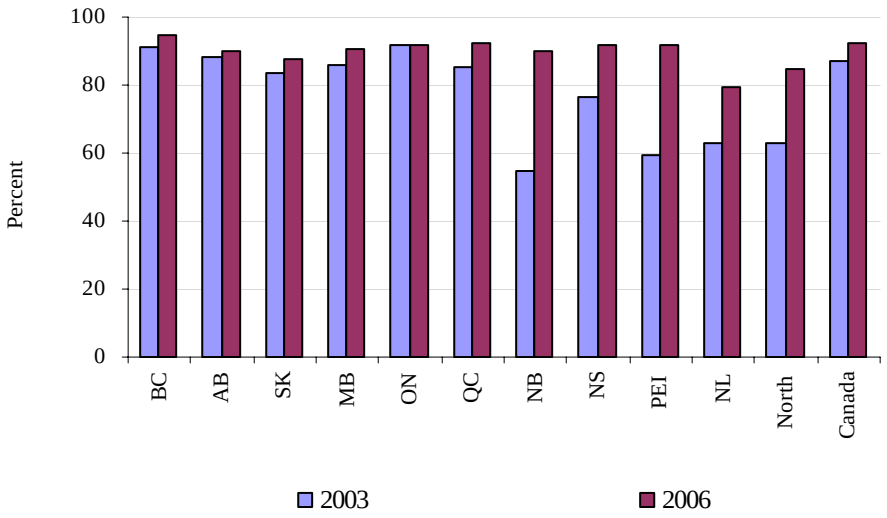
Appendix 5 provides details on this and other promising means for accelerated broadband deployment.

Figure 4.4.3 shows the progress made in the deployment of broadband infrastructure since 2003. The largest increase in the availability of broadband was seen in New Brunswick, where an agreement was reached between the federal and provincial governments and Bell Aliant for a province-wide broadband program under the Canadian Strategic Infrastructure Fund. Broadband coverage was extended to 327 communities in New Brunswick. This brought the broadband availability in the province to 90%, up from 83% as of year end 2005.

[94] The decision specified that a minimum of 5% of these monies should be spent to improve accessibility of telecommunications services for persons with disabilities.

[95] *Disposition of funds in the deferral accounts*, Telecom Decision CRTC 2006-9, 16 February 2006 (Decision 2006-9).

Figure 4.4.3
Broadband availability
(percent of households)



Source: Industry Canada and CRTC data collection

When viewed on a household basis, approximately 92% of Canadian households were within areas that could have access to broadband services in 2006 compared to 87% in 2003. Factoring in Telesat's Ka band which is available throughout Canada, broadband service was available to an additional 150 thousand subscribers.[96] With this deployment, broadband availability increased to 93% of Canadian households.

Figure 4.4.4 compares the availability of broadband access for urban and rural[97] households. The majority of the Canadian population (75%) is located in large urban centres. In 2006, virtually all Canadian households in urban centres could have access to broadband services, versus 78% of households that are in rural[98] centres[99] that have broadband reported within them.

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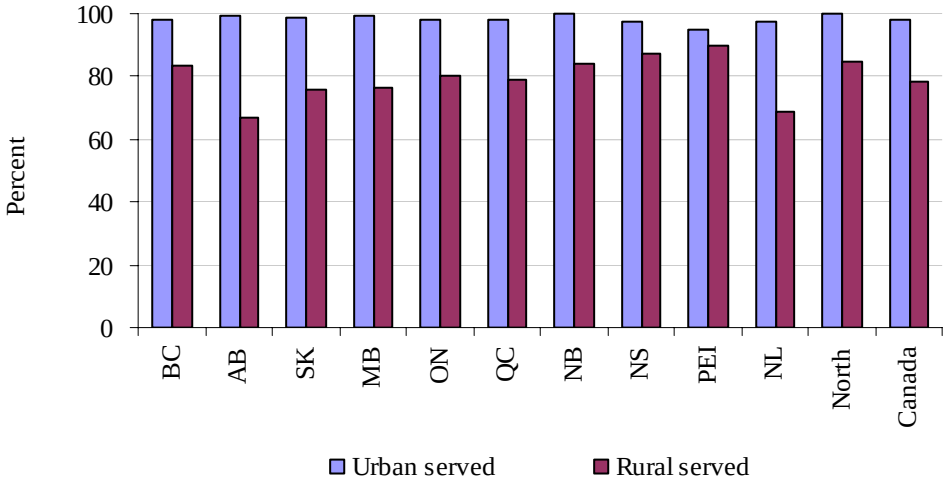
96 Evidence filed by Telesat Canada pursuant to *Review and disposition of deferral accounts for the second price cap period*, Telecom Public Notice CRTC 2004-1, 24 March 2004.

97 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.

98 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.

99 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, supplemented with Industry Canada data where postal code data is unavailable. 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 in all areas.

Figure 4.4.4
Broadband availability
Urban v. rural
(Percent of households)
(2006)

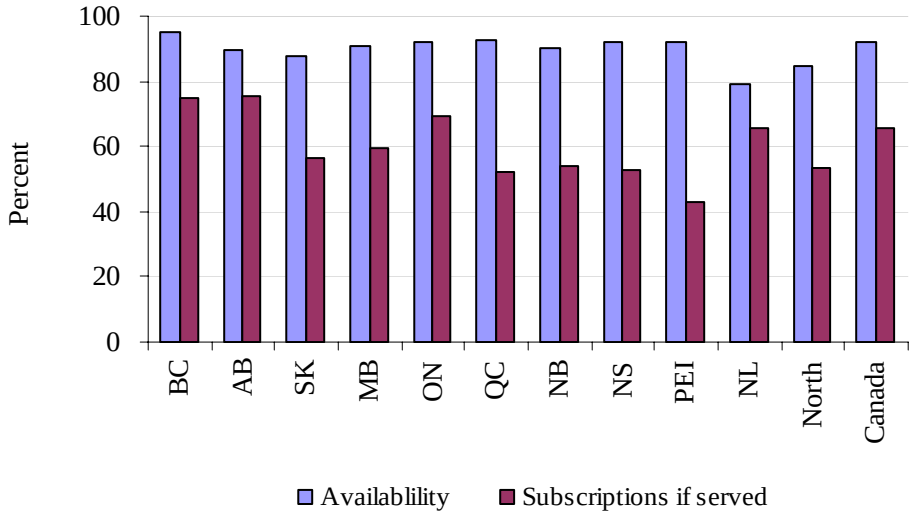


Source: Industry Canada and CRTC data collection

On a provincial/territorial basis, as displayed in Figure 4.4.5, broadband access is available to over 93% of households. This availability ranges from a low of 79% in Newfoundland and Labrador to a high of 95% in British Columbia.

Figure 4.4.5 shows that while 93% of Canadian households have access to broadband services, 65% of these households actually subscribe to the service. The lowest subscription rate was in Prince Edward Island at 43% of households and the highest rate was in Alberta and British Columbia at 74%.

Figure 4.4.5
Broadband availability v. subscriptions
(2006)

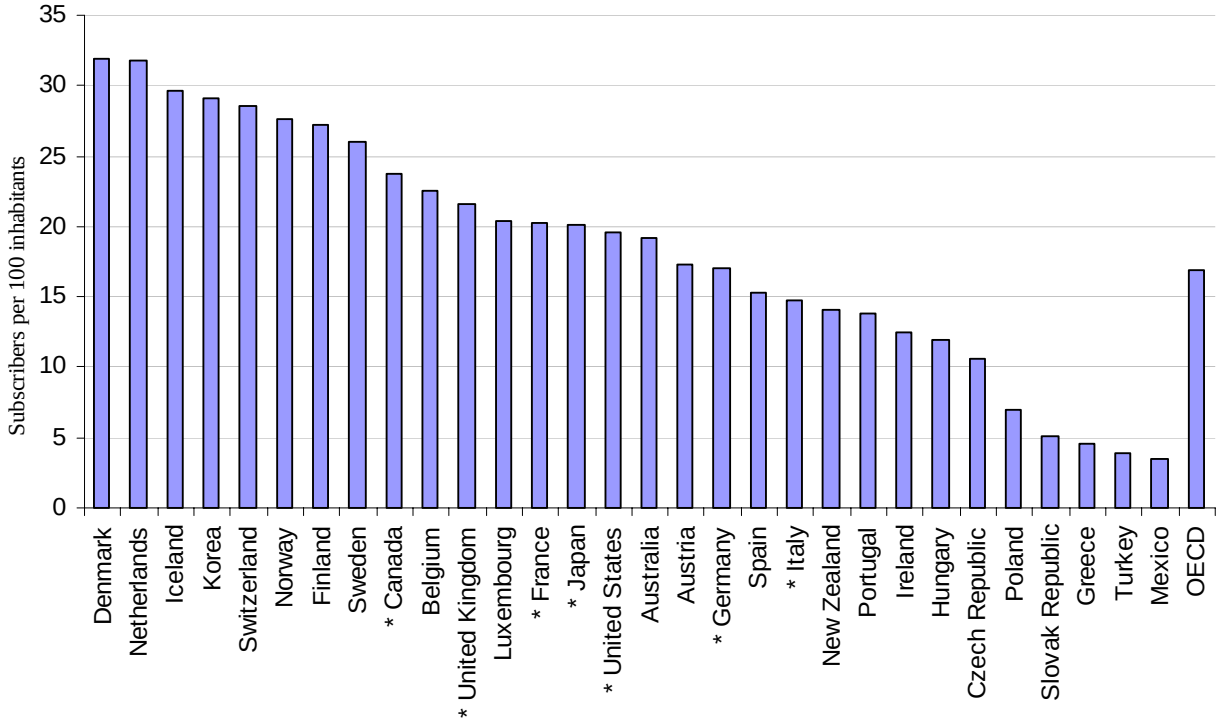


Source: Industry Canada and CRTC data collection

Internationally, with respect to the G8 group[100] of countries, Canada ranked number one with respect to broadband access. As illustrated in Figure 4.4.6, as of December 2006, Canada ranked ninth 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).

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

Figure 4.4.6
Broadband access in OECD countries
per 100 inhabitants (December 2006)



Source: OECD

Note: * denotes G8 member (excluding Russia).

4.5 Data and private line

Highlights

- Data revenues increased 2.9% to $2.3 billion in 2006 whereas private line revenues declined 10.2% to $1.7 billion, resulting in an overall decline in data and private line revenues of 3.0%.
- Data protocol services revenue continued to shift towards the new services – IP-VPN (virtual private network) and Ethernet, with these services accounting for $0.9 billion or 62% of data protocol revenues, up from 49% in 2005.
- Alternative TSPs' share of data and private line revenues decreased from 31% in 2005 to 30% in 2006.

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 up 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 smallest sector, with revenues of approximately $4.0 billion or roughly 11% of total telecommunications revenues. As displayed in Table 4.5.1, data and private line revenues declined at an annual rate of 3.3% over the 2002 to 2006 period. Since 2004, data revenues exceeded private line revenues, accounting for approximately 58% of the total in 2006. Over the previous year, data revenues increased by 2.9%, while private line revenues declined by 10.2% resulting in an overall decline of 3.0% for the sector.

Data protocol revenues (i.e. product-related revenues which exclude revenues associated with provisioning and management) grew in 2006 due to the growth in the newer or non-legacy services such as Ethernet and IP-VPN. Revenues from these newer data services now represent over 60% of the data protocol revenues in 2006.

Table 4.5.1
Data and private line revenues
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Data	2,092	2,184	2,334	2,239	2,305	*2.9%*	*2.4%*
Private line	2,454	2,300	2,077	1,854	1,666	*-10.2%*	*-9.2%*
Total	4,546	4,484	4,411	4,093	3,970	*-3.0%*	*-3.3%*

Source: CRTC data collection

The alternative TSPs captured $1.2 billion or 30% of the data and private line revenues in 2006, compared to $1.3 billion or 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 TSPs, and facilities-based alternative TSPs such as cable BDUs, utility telcos, and resellers. Data and private line services are marketed directly to end-customers in the retail market or as wholesale products to service providers. Data and private line wholesale services are generally used by the alternative TSPs to construct underlying networks to deliver telecommunications products and services or are resold either as retail or wholesale services.

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 incumbent TSPs' data services as well as their private line services on thousands of 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[101] directed alternative TSPs 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 incumbent TSP or an affiliate of an incumbent TSP. 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 incumbent TSP's competitors. Incumbent TSPs are also free to apply for forbearance at any time.

In 2006, the Commission forbore from regulating approximately 549 interexchange private line routes,[102] bringing the total to approximately 2,800# forborne private line routes.

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[101] Telecom Order CRTC 99-434, 12 May 1999.

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

X.25 and frame relay services were forborne from regulation under Order 96-130[103] in February 1996. Under Order 2000-553,[104] in June 2000, WAN services were also forborne from regulation. The access components of ATM and Ethernet services provided by incumbent TSPs continue to be regulated.

e) Regulatory developments

In Decision 2005-6[105] the Commission required incumbent TSPs to provide alternative TSPs various services and facilities as part of the competitor digital network (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.

In 2006, several incumbent TSPs made amendments to their tariffs to add more service offerings to their competitor services under CDN services for bandwidths ranging from DS-1 to OC-12 rates.

In 2007, in Decision 2007-35, the Commission determined the framework for forbearing from regulating high-speed intra-exchange digital network access (high-speed DNA) services and metropolitan wavelength services (MWS).[106]

In Decision 2004-5,[107] the Commission made interim determinations regarding the introduction of wholesale Ethernet services such as Ethernet CO Connecting link and Ethernet Transport services and retail-based Ethernet Access service in the territories of Bell Canada, TCC, MTS Allstream, SaskTel, and Bell Aliant.

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

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

105 *Competitor Digital Network Services*, Telecom Decision CRTC 2005-6, 3 February 2005 as amended by Telecom Decision CRTC 2005-6-1, 28 April 2006 (Decision 2005-6).

106 *Framework for forbearance from regulation of high-speed intra-exchange digital network access services*, Telecom Decision CRTC 2007-35, 25 May 2007.

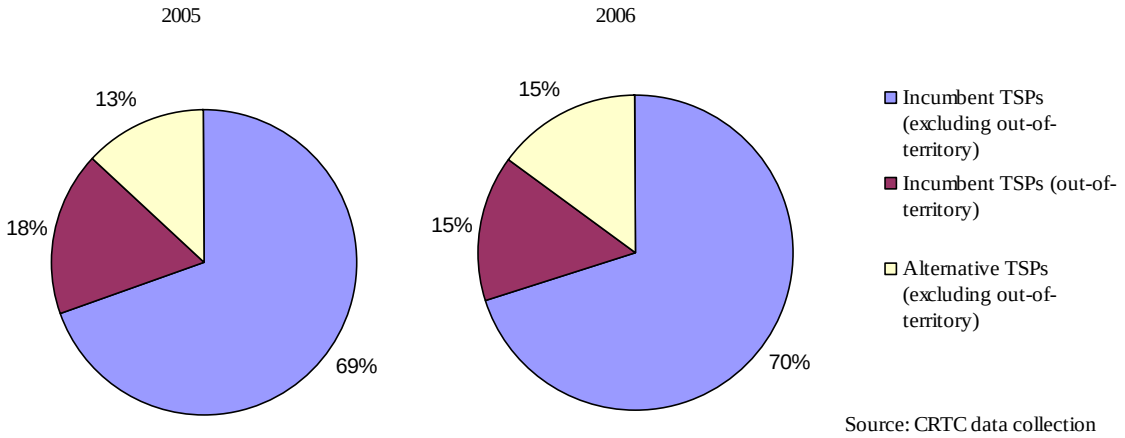
107 *Ethernet services*, Telecom Decision CRTC 2004-5, 27 January 2004 as amended by Telecom Decision CRTC 2004-5-1, 6 February 2004.

In 2007, in Order 2007-20,[108] the Commission rendered its final determinations[109] with respect to wholesale tariffs for Ethernet Access service, Ethernet CO Connecting link and Ethernet Transport service for alternative TSPs. The Commission also made final determinations with respect to retail-based Ethernet Access service. The intent of the order was to ensure uniformity of Ethernet services offered to alternative TSPs by incumbent TSPs across operating regions.

Market segments

As shown in Figure 4.5.1, the incumbent TSPs, excluding their out-of-territory operations, were the major providers in the data and private line markets with revenues of $2.8 billion representing 70% of the data and private line revenues in 2006. The remaining $1.2 billion was generated by the alternative TSPs of which 50% was generated by the incumbent TSPs out-of-territory operations. The incumbent TSPs out-of-territory operations' share of the data and private line revenues declined from 18% in 2005 to 15% in 2006 whereas the remaining alternative TSPs' revenue share increased from 13% in 2005 to 15% in 2006.

Figure 4.5.1
Data and private line revenue market share by type of TSP



Source: CRTC data collection

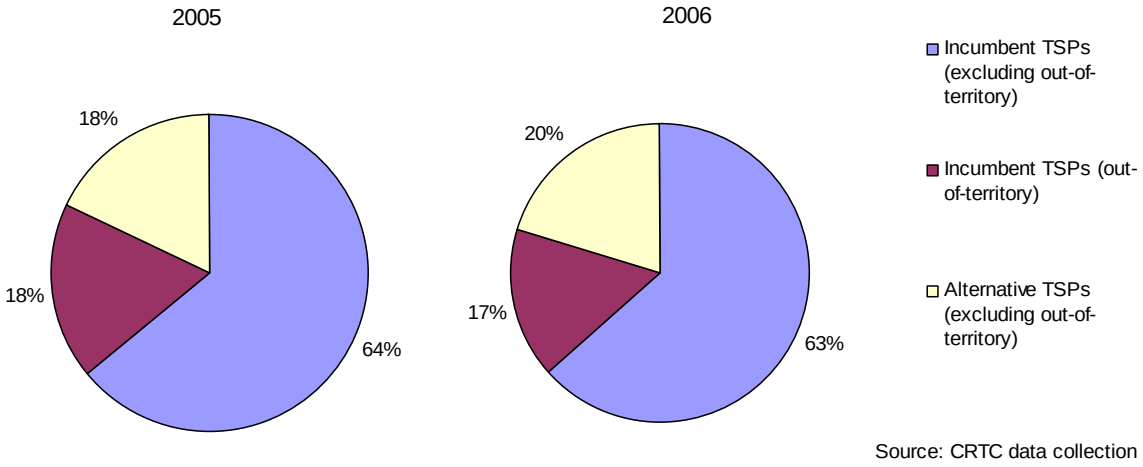
[108] *Ethernet services*, Telecom Order CRTC 2007-20, 25 January 2007.

[109] Implementation of most of these orders are currently subject to stay of execution and review and vary applications by Bell Aliant and Bell Canada – Application for a stay of execution of Orders 2007-20, 2007-21 and 2007-22 (Commission file 8680-B2-200702805, 16 February 2007) and Application to review, rescission and vary of Orders 2007-20, 2007-21 and 2007-22 (Commission file 8662-B2-200702771, 16 February 2007); SaskTel – Application for a stay of execution of Orders 2007-20 and 2007-24 (Commission file 8680-S22-200703026, 21 February 2007) and Application to review and vary Order 2007-20 (Commission file 8662-S22-200704529, 21 March 2007); and TCC – Application for a stay of execution of Order 2007-20 (Commission file 8680-T66-200702945, 19 February 2007) and Application to review and vary Order 2007-20 (Commission file 8662-T66-200703464, 28 February 2007).

a) Data services

As shown in Figure 4.5.2, when operating within their traditional territory, the incumbent TSPs' captured $1.5 billion of the data revenues in 2006 resulting in a 63% revenue market share, down from 64% in 2005. The incumbent TSPs' out-of-territory operations captured an additional 17% of the data revenues or $0.4 billion compared to 18% or $0.39 billion in 2005, as the remaining alternative TSPs captured the remaining $0.5 billion or 20% of the data revenues up from 18% in 2005.

Figure 4.5.2
Data revenue market share by type of TSP



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. Data protocol revenues, representing 65% of data revenues, increased from $1.4 billion in 2005 to $1.5 billion in 2006 resulting in a 10.5% increase.

Table 4.5.2
Data protocol and other revenues[110]
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Data protocols	1,259	1,381	1,418	1,354	1,496	10.5%	4.4%
Other	833	767	890	849	656	-22.7%	-5.8%
Total	2,092	2,148	2,307	2,203	2,152	-2.3%	0.7%

Source: CRTC data collection

[110] 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 displays data protocol revenues by service category. In 2006, revenues from legacy data protocol services such as X.25, ATM and frame relay decreased 18.1% from $0.7 billion in 2005 to $0.6 billion in 2006. Revenues from X.25 services declined 29%, ATM revenues declined 9.0% and frame relay revenues which have been declining since 2004, declined 17.5% in 2006. These decreases were more than offset by the newer services such as Ethernet and IP-VPN which increased from $0.7 billion in 2005 to $0.9 billion in 2006, a $0.3 billion or 40.1% increase.

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

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
X.25							
Retail	134.4	131.2	102.0	91.0	64.7	*-28.9%*	*-16.7%*
Wholesale	22.5	9.1	5.7	2.5	1.7	*-30.8%*	*-47.3%*
Total	156.9	140.3	107.7	93.5	66.4	*-29.0%*	*-19.3%*
ATM							
Retail	116.0	109.5	83.6	72.7	63.4	*-12.8%*	*-14.0%*
Wholesale	12.4	14.6	16.1	6.9	9.1	*31.5%*	*-7.5%*
Total	128.4	124.2	99.7	79.6	72.4	*-9.0%*	*-13.3%*
Frame relay							
Retail	564.4	573.7	546.8	476.9	381.3	*-20.0%*	*-9.3%*
Wholesale	73.7	76.0	78.4	39.6	45.0	*13.5%*	*-11.6%*
Total	638.1	649.7	625.2	516.5	426.3	*-17.5%*	*-9.6%*
Total legacy data							
Retail	814.8	814.4	732.4	640.6	509.4	*-20.5%*	*-11.1%*
Wholesale	108.6	99.7	100.2	49.0	55.8	*13.8%*	*-15.4%*
Total	923.4	914.1	832.6	689.6	565.1	*-18.1%*	*-11.6%*
Ethernet							
Retail	272.5	351.3	427.4	442.6	546.3	*23.4%*	*19.0%*
Wholesale	24.7	48.1	44.4	49.6	86.7	*74.8%*	*36.9%*
Total	297.2	399.4	471.8	492.2	633.0	*28.6%*	*20.8%*
IP-VPN							
Retail	38.6	64.9	110.7	169.6	286.5	*68.9%*	*65.1%*
Wholesale	0.1	2.4	2.4	2.4	11.0	*357.7%*	*223.7%*
Total	38.7	67.2	113.1	172.0	297.4	*72.9%*	*66.5%*
Total new data							
Retail	311.1	416.2	538.1	612.2	832.8	*36.0%*	*27.9%*
Wholesale	24.8	50.5	46.8	52.0	97.7	*87.8%*	*40.9%*
Total	335.9	466.7	584.9	664.2	930.4	*40.1%*	*29.0%*
Total data protocols							
Retail	1,125.9	1,230.6	1,270.5	1,252.8	1,342.1	*7.1%*	*4.5%*
Wholesale	133.4	150.2	147.0	101.0	153.4	*51.9%*	*3.6%*
Total	1,259.3	1,380.8	1,417.5	1,353.8	1,495.6	*10.5%*	*4.4%*

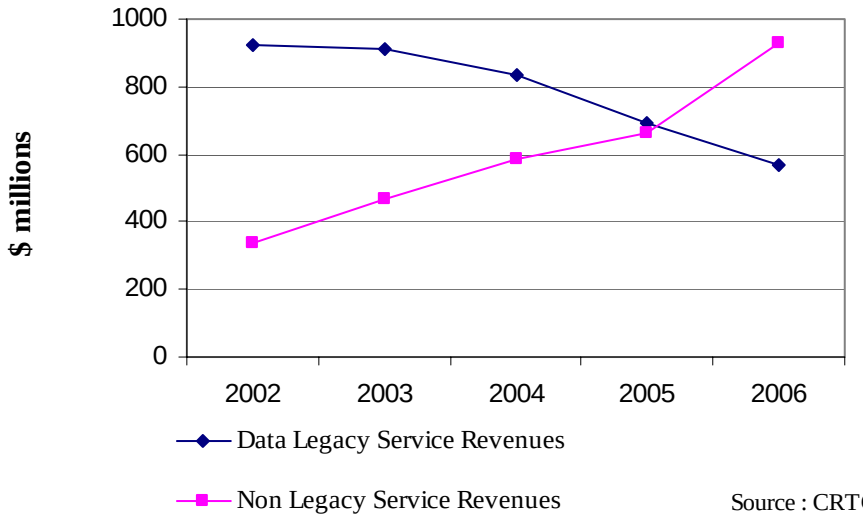
Source: CRTC data collection

Over the 5 year period ending 2006, Ethernet revenues more than doubled from $0.30 billion in 2002 to $0.63 billion, a 21% annual growth. Over the same period, IP-VPN revenues increased more than 7 fold from $0.04 billion to $0.29 billion, a 66.5% annual growth. These trends are expected to continue given the increased flexibility, capacity and interoperability that the new

generation of IP services provides and revenues from legacy services such as X.25 and frame relay, and ATM networks are expected to decline. In addition to capturing revenue from the legacy data services, the newer data services also contributed to the decline in private line revenues due to their ability to cost-effectively replicate the functionality such as capacity and security associated with private line services.

Figure 4.5.3 displays the revenues from the legacy and newer data protocols over the 2002 to 2006 period. Over this period, newer data protocol revenues increased to the point where, by 2006, they captured over 60% of the $1.5 billion data protocol revenues. The newer data protocols generated approximately the same amount of revenues as the legacy protocols did in 2002.

Figure 4.5.3
Data protocol service revenues
Legacy v. Non-legacy



Source : CRTC data collection

Table 4.5.4 shows the incumbent and alternative TSPs data protocol revenue market shares by data protocol category. When operating within their traditional territory, the incumbent TSPs' revenue share remained unchanged in 2006 at 58% or $0.87 billion. With respect to the newer data protocols, their revenue market share decreased from a revenue market share of 63% or $0.42 billion in 2005 to 57% or $0.53 billion in 2006, while their share of legacy data protocol revenues increased from 54% or $0.37 billion in 2005 to 59% or $0.33 billion in 2006.

Table 4.5.4
Revenue market share by data protocol service category

	2003	2004	2005	2006
X.25				
Incumbent TSPs (excluding out-of-territory)	90%	91%	91%	98%
Incumbent TSPs (out-of-territory)	8%	8%	9%	2%
Alternative TSPs (excluding out-of-territory)	2%	1%	0%	0%
ATM				
Incumbent TSPs (excluding out-of-territory)	22%	27%	28%	49%
Incumbent TSPs (out-of-territory)	26%	57%	50%	19%
Alternative TSPs (excluding out-of-territory)	52%	16%	23%	32%
Frame relay				
Incumbent TSPs (excluding out-of-territory)	56%	52%	51%	54%
Incumbent TSPs (out-of-territory)	5%	31%	28%	21%
Alternative TSPs (excluding out-of-territory)	39%	17%	21%	24%
Total legacy data				
Incumbent TSPs (excluding out-of-territory)	57%	54%	54%	59%
Incumbent TSPs (out-of-territory)	8%	31%	28%	19%
Alternative TSPs (excluding out-of-territory)	35%	15%	18%	23%
Ethernet				
Incumbent TSPs (excluding out-of-territory)	64%	70%	63%	58%
Incumbent TSPs (out-of-territory)	22%	18%	22%	28%
Alternative TSPs (excluding out-of-territory)	13%	12%	15%	14%
IP-VPN				
Incumbent TSPs (excluding out-of-territory)	90%	71%	63%	55%
Incumbent TSPs (out-of-territory)	0%	1%	0%	17%
Alternative TSPs (excluding out-of-territory)	10%	28%	37%	28%
Total new data				
Incumbent TSPs (excluding out-of-territory)	68%	70%	63%	57%
Incumbent TSPs (out-of-territory)	19%	14%	17%	24%
Alternative TSPs (excluding out-of-territory)	13%	15%	21%	19%
Total data protocols				
Incumbent TSPs (excluding out-of-territory)	61%	61%	58%	58%
Incumbent TSPs (out-of-territory)	12%	24%	22%	22%
Alternative TSPs (excluding out-of-territory)	28%	15%	19%	20%

Source: CRTC data collection

b) Private line services

As displayed in Table 4.5.5, private line revenues declined each year since 2002, from $2.5 billion to $1.7 billion in 2006, a $0.8 billion decline representing a 9.2% annual decline rate. Both short- and long-haul private line revenues in the retail and wholesale markets have been decreasing since 2004.

Table 4.5.5
Private line service retail and wholesale revenues by service category[111]
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Short-haul							
Retail	527	496	521	503	431	*-14.2%*	*-4.9%*
Wholesale	440	444	369	285	217	*-23.8%*	*-16.2%*
Total	967	940	890	788	649	*-17.7%*	*-9.5%*
Long-haul							
Retail	800	739	732	660	634	*-3.9%*	*-5.6%*
Wholesale	688	600	419	406	382	*-5.9%*	*-13.7%*
Total	1,488	1,339	1,151	1,066	1,016	*-4.7%*	*-9.1%*
Total							
Retail	1,327	1,235	1,253	1,163	1,065	*-8.4%*	*-5.3%*
Wholesale	1,128	1,044	788	691	599	*-13.3%*	*-14.6%*
Total	2,454	2,280	2,042	1,854	1,665	*-10.2%*	*-9.2%*

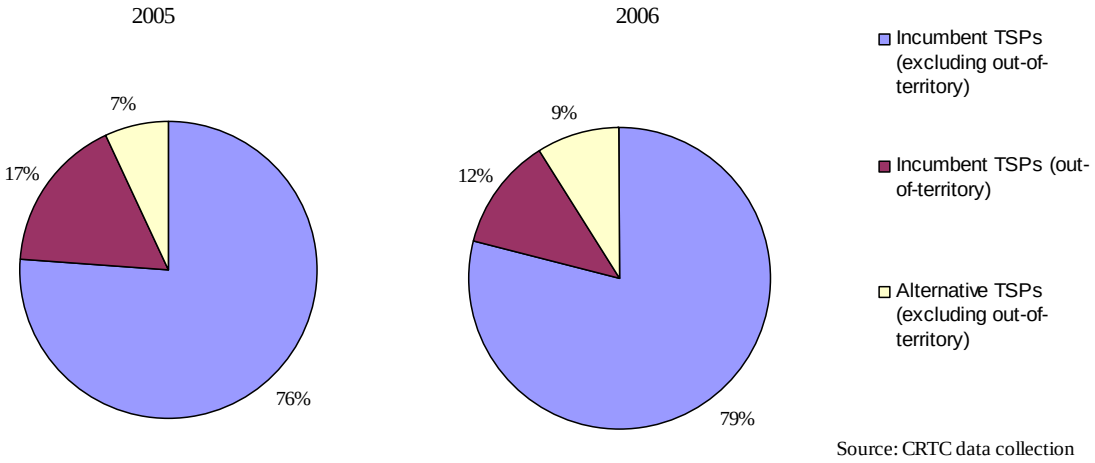
Source: CRTC data collection

Some of the decline in private line revenues could be attributed to the newer data protocols, such as IP-VPN, that can replicate the functionality of private lines. The decline in wholesale revenues was greater than the decline in retail revenues.

As displayed in Figure 4.5.4, the alternative TSPs' share of the $1.7 billion private line revenues in 2006 declined from $0.44 billion, a 24% market share in 2005, to $0.35 billion, resulting in a 21% market share in 2006. Conversely, the incumbent TSPs, excluding their out-of-territory activities, increased their revenue market share from 76% in 2005 to 79% in 2006. Although the incumbent TSPs increased their share of private line revenues when operating within their traditional territory, their revenues from these services actually declined from $1.41 billion in 2005 to $1.32 billion in 2006 resulting in a 6% decline compared to 9% for the industry.

[111] 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.

Figure 4.5.4
Private line revenue market share by type of TSP



Source: CRTC data collection

As shown in Table 4.5.6, when operating within their traditional territories, the incumbent TSPs' revenue market share for short-haul routes increased from 73% in 2005 to 84% in 2006 and for long-haul routes, increased from 77% in 2005 to 78% in 2006.

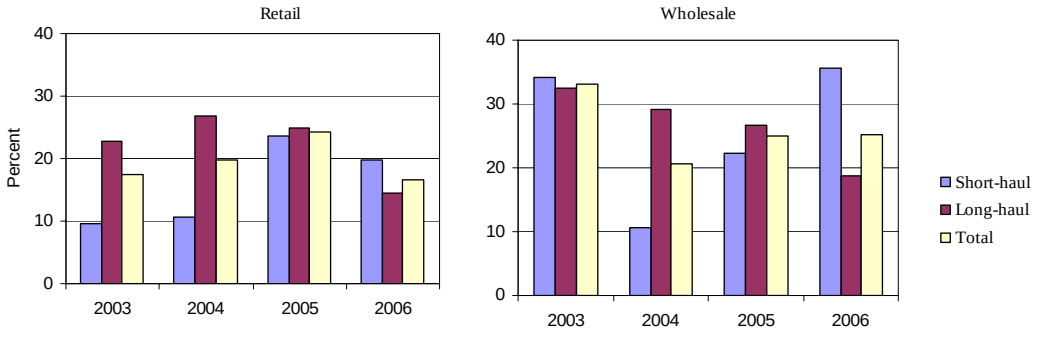
Table 4.5.6
Private Line
Short-haul and long-haul revenue market share

	2003	2004	2005	2006
Short-haul				
Incumbent TSPs (excluding out-of-territory)	79%	90%	73%	84%
Incumbent TSPs (out-of-territory)	10%	9%	24%	14%
Alternative TSPs (excluding out-of-territory)	11%	1%	3%	2%
Long-haul				
Incumbent TSPs (excluding out-of-territory)	73%	72%	77%	78%
Incumbent TSPs (out-of-territory)	8%	20%	14%	11%
Alternative TSPs (excluding out-of-territory)	19%	7%	10%	10%
Total				
Incumbent TSPs (excluding out-of-territory)	75%	80%	76%	80%
Incumbent TSPs (out-of-territory)	9%	15%	17%	13%
Alternative TSPs (excluding out-of-territory)	16%	5%	7%	7%

Source: CRTC data collection

Figure 4.5.5 shows the alternative TSPs private line revenue share for the short-haul and long-haul and for the retail and wholesale markets. The alternative TSPs' wholesale long-haul revenue market share has been declining since 2003 and their retail long-haul revenue market share has been declining since 2004. However, their wholesale short-haul revenue market share has been increasing since 2004. In 2006, the alternative TSPs' private line revenue market share in the retail, for both the short- and long-haul markets declined.

Figure 4.5.5
Alternative TSPs' private line revenue share
Short-haul and long-haul



Source: CRTC data collection

4.6 Mobile Wireless

Highlights

- In 2006, the mobile wireless industry, excluding paging, had an annual growth rate of 15.6% in revenues and 10.2% in the number of subscribers.
- The annual average revenue per subscriber (ARPU) increased from $53 per month in 2005 to $56 per month in 2006.
- The average number of minutes per subscriber in 2006 was 350 minutes and the average revenue per minute was $0.13/minute.
- Data revenues grew at an annual rate of 52.3% in 2006.

Sector description

a) Description of services

The wireless market segment encompasses telecommunications services provided via mobile wireless access facilities. These services include mobile telephony, mobile data such as text messaging, roaming, 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 communications over wireless networks, new wireless technologies and applications are enabling users to send text messages from one device to another, as well as multi-media messages which include photos, graphics, video and audio clips. Inter-carrier text messaging and data sharing between users has been in place for the last few years and is expected to continue to grow as existing carriers forge network agreements, and terminal equipment makers introduce new and cutting edge devices.

As the reach of picture and video messaging services continue to expand following the introduction of full inter-carrier multi-media messaging on 1 July 2005,[112] other services are increasingly being offered to wireless subscribers. For example, on 8 November 2005, the national wireless service providers announced a joint venture called "Wireless Payment Services" to develop a standard common method of making payment transactions using mobile devices over the wireless network. This service was expected to be deployed in two phases. The first phase was launched during the third quarter of 2006[113] which enabled pre-paid mobile wireless users the ability to buy additional minutes of use for their accounts by way of debit or credit card payments. The second phase will enable mobile wireless users to make payments and purchases using their mobile device. To date, this service has yet to be launched in any significant way in Canada with the exception of mobile parking metres in several major metropolitan cities.

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[112] CWTA Press Release, 29 June 2005.

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

Mobile wireless services are generally billed on a usage basis for both voice and data services. Subscribers have a choice of two payment options: pre-paid and post-paid. Pre-paid plans require the subscriber to purchase the wireless service prior to use, while post-paid plans require payment on a monthly basis after using the service. Customers typically pay a per minute rate for a pre-paid plan, while post-paid customers will pay for a service package that includes a defined minute of use, an overage minute rate, data features, and other optional services such as voice mail, call display, call waiting and more.

b) Markets and observations

Mobile wireless revenues continued to grow in 2006 and remained the largest revenue component as a total of Canadian telecommunications revenues. Pricing plans that focused on certain markets, improved handsets, and innovative service bundles all contributed to the mobile wireless growth in 2006. Table 4.6.1 displays wireless revenues and the number of subscribers for the period 2002 to 2006.

Overall market share did not change much year over year, between 2005 and 2006, as the top three carrier's revenues continue to account for more than 90% of the wireless market in Canada. Over 98% of Canadians have access to wireless services. In spite of the growth in the wireless sector, approximately 66.8% of households currently have wireless services; this puts Canada's wireless penetration rates close to last place in comparison to other OECD countries.[114]

Canada's mobile service revenues as a percentage of total telecommunication revenues are among the lowest when compared to the other countries within the OECD.

Table 4.6.1
Wireless and paging revenues and number of subscribers

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Wireless revenues ($ millions)	6,924.6	7,905.3	9,348.8	10,895.5	12,600.1	*15.6%*	*16.1%*
Paging revenues ($ millions)	190.4 #	157.4 #	130.3 #	121.0 #	96.1	*-20.5%*	*-15.7%*
Total revenues	7,115.0	8,062.7	9,479.1	11,016.5	12,696.2	*15.2%*	*15.6%*
Wireless subscribers (thousands)	11,997.0	13,291.0	15,020.0	17,016.6	18,749.1	*10.2%*	*11.8%*
Paging subscribers (thousands)	1,093.5	951.3	751.0	616.7	504.6	*-18.2%*	*-17.6%*

Source: CRTC data collection

Despite low penetration rates in Canada, the mobile wireless sector, excluding paging, had revenues of approximately $12.6 billion, a 15.6% increase over the previous year, and approximately 18.7 million subscribers, representing a 10.2% increase over the previous year.

[114] Source: The Communications Market 2006 Ofcom - IDATE/National Reg/OECD/OFCOM/Operators.

c) Sector participants

Industry participants are classified under 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,[115] TCC and Rogers), regional wireless service providers (MTS Allstream and SaskTel), and small incumbents. MVNOs include operators such as Virgin Mobile Canada, Primus Telecommunications Canada Inc. and Vidéotron who launched its wireless offering during the first half of 2006. Others include 7-Eleven and PC mobile.

There has been a growing trend for TSPs who do not offer wireless services to enter into agreements or alliances with wireless service providers to 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,[116] 96-14,[117] and 98-18,[118] the Commission forbore from regulating mobile wireless services on the basis that such services were sufficiently competitive. In a public notice released in early 2006, "the Commission ruled that mobile television services which offer television programming accessible through a wireless handset, such as a cell phone, are exempt from regulation."[119] However, the Commission will continue to monitor the developments in this area closely.

e) Regulatory developments

Wireless number portability (WNP) came into effect on 14 March 2007 in the provinces of British Columbia, Alberta, Ontario and Quebec.[120] This allows consumers in those provinces the ability to switch between telecommunications service providers, either wireline or wireless, and retain the telephone number of their previous provider.

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115 The Bell Group consists of Bell Canada, Aliant Telecom, Northwestel Mobility Inc., Télébec Mobilité, NorTel (Northern) Mobility.

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

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

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

119 In reference to Broadcasting Public Notices CRTC 2006-47 and 2006-48 dated 12 April 2006.

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

For all other areas where wireline local number portability (LNP) is available, WNP porting-in[121] will be 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 incumbent TSP.

In early February 2007, Industry Canada published a paper called "Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services."[122] This consultation paper consisted of two parts. The first part addressed the potential changes to the Canadian Table of Frequency Allocations for bands (1710-2200 MHz range), expansion of the 1900 MHz PCS licensed-bands and the allocation for bands in the 1670-1675 MHz range.[123] The second part of the paper discussed the framework for the competitive licensing of the spectrum. This is a significant development and will be watched closely by many industry participants including government and non-government organizations because this could pave the framework for the 2008 spectrum auction and ultimately impact the level of competition in the wireless industry.

Market segments

Figure 4.6.1 depicts for the OECD countries the total mobile wireless service revenues as a percent of total telecommunications revenues. Canada's total mobile revenues as a percent of total telecommunications revenues grew from 20% in 2002 to 36% in 2006. Although, Canada's percentage is below most other OECD countries, Canada's mobile market continued to expand in 2006 from 32% in 2005 to 36% of total Canadian telecommunications revenues.

Average revenue per minute (ARPM) in Canada , however, was $0.13 per minute (only includes voice and long distance minutes) and is among the lowest of all the OECD countries which could be attributed to the high volume minute plans that Canadian providers have adopted from their southern counterparts in the United States. ARPM is commonly used to compare prices in the mobile market, and to provide some indication as to the affordability of mobile services relative to other countries as well as the level of competition within the Canadian mobile market.

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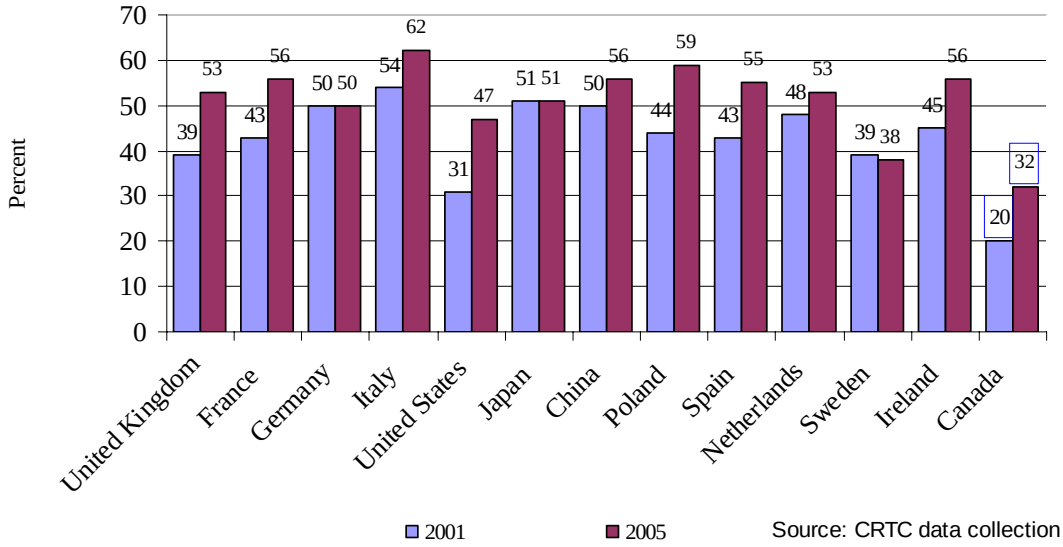
[121] Porting-in refers to the ability of a service provider to accept a customer's phone number from another service provider when the customer changes service providers. Porting-out refers to the ability of a service provider to transfer to another service provider a customer's phone number when the customer leaves that provider for another service provider.

[122] Canada Gazette - Notice No. DGTP-002-07 dated February 2007.

[123] Canada Gazette - Notice No. DGTP-004-05 dated December 2005.

Figure 4.6.1
Wireless revenues to total telecommunications revenues

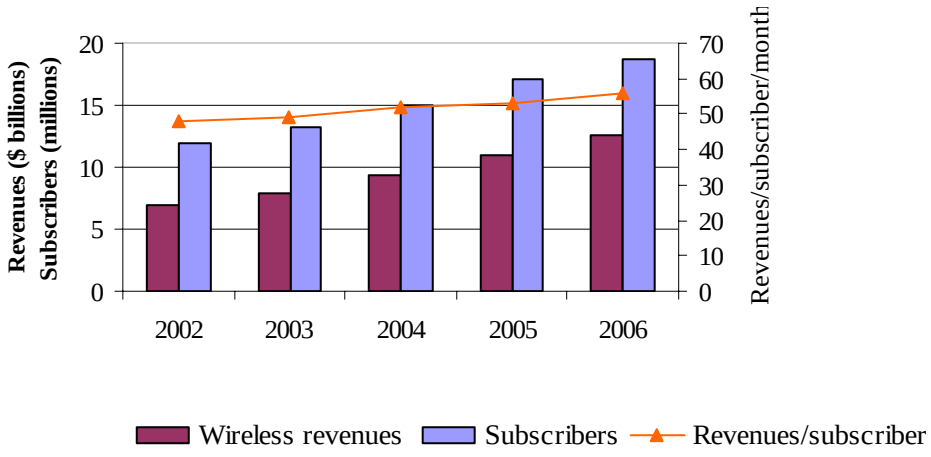


Source data: Ofcom: "The International Communications Market 2006" section 2 - Telecoms

In Figure 4.6.2, wireless revenues, excluding paging, have continuously increased from $6.9 billion in 2002 to $12.6 billion in 2006, representing an average annual growth rate of 16.1%. Similarly, there has been a continuous increase in the number of subscribers from 12.0 million in 2002 to 18.7 million in 2006, resulting in an average annual growth rate of 11.8%.

The geographic regions that showed the most growth in 2006 were Western Canada and Nova Scotia where the number of subscribers grew at a faster pace than the average national growth rate of 10.2%.

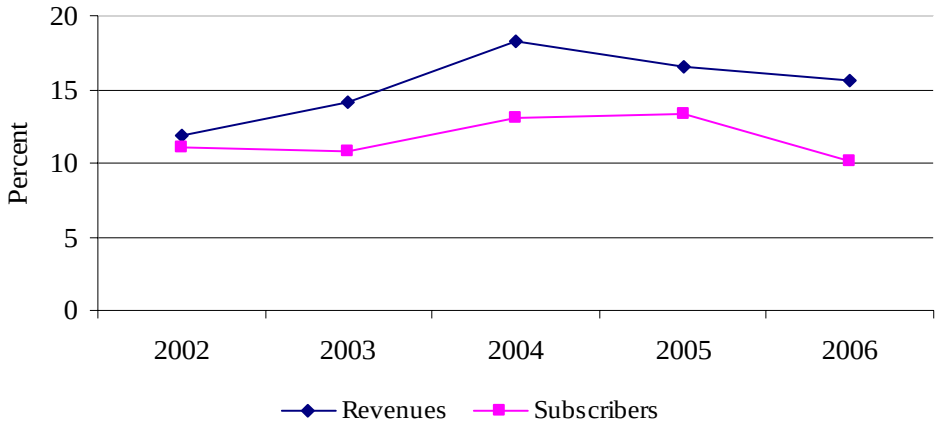
Figure 4.6.2
Wireless revenues, subscribers and revenues per subscriber (excluding paging)



Source: CRTC data collection

Figure 4.6.3 displays the relationship between the growth rates in the number of subscribers and the growth rates in wireless revenues from 2002 to 2006. Growth in wireless revenues and in the number of subscribers increased between 10% and 18% throughout this period. In 2002, the growth rate in wireless revenues was approximately 1.1 times that of the growth in the number of wireless subscribers. Since 2002, this growth has increased to 1.47 times that of the growth in the number of wireless subscribers which resulted in the gradual increase in the monthly average revenues per subscriber displayed in Figure 4.6.2.

Figure 4.6.3
Wireless revenue and subscriber growth rates
(excluding paging)



Source: CRTC data collection

The ARPU[124] was $48 per month in 2002 and gradually increased to $56 per month in 2006. The increase in ARPU could be attributed to the overall increased use of voice and data services. A more detailed look at the ARPU by province can be found in Figure 4.6.6.

Major revenue components

As displayed in Table 4.6.2, mobile wireless revenues consisted of five major components: basic voice, long distance, paging, data and other,[125] 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.

[124] The Commission calculates ARPU based on an average annual figure, where the average monthly revenue for the year is divided by the number of subscribers at the end of the year; this may differ from other methodologies such as monthly averages and quarterly averages.

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

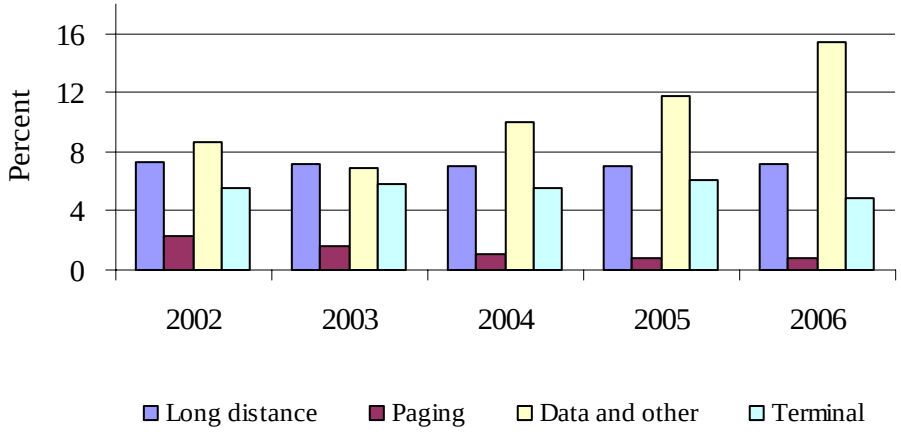
Table 4.6.2
Wireless and paging revenues components
($ millions)

	2002	2003	2004	2005	2006	*Growth 2005-2006*	*CAGR 2002-2006*
Basic voice	5,399.9	6,315.5	7,214.4	8,172.1	9,110.1	*11.5%*	*14.0%*
Long distance	517.7	572.6	664.9	771.1	918.8	*19.2%*	*15.4%*
Paging	190.4 #	157.4 #	130.3 #	121.0 #	96.1	*-20.5%*	*-15.7%*
Data and other	617.4	549.3	941.4	1,286.7	1,959.7	*52.3%*	*33.5%*
Terminal	389.6	467.9	528.1	665.6	611.4	*-8.1%*	*11.9%*
Total	7,115.0	8,062.7	9,479.1	11,016.4	12,696.2	*15.2%*	*15.6%*

Source: CRTC data collection

Since 2002, basic voice packages have accounted for 72% to 79% of total wireless revenues. In 2006, basic voice packages were 72% of total revenues. The remaining components, as a percent of wireless revenues, are displayed in Figure 4.6.4 for the period 2002 to 2006.

Figure 4.6.4
Revenues by major component
(excluding basic voice)



Source: CRTC data collection

As shown in Figure 4.6.4, 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. One major highlight in wireless in 2006 was data and other as subscribers made much greater use of text messaging (short message services), Internet services, and multi-media messaging services. Consequently, revenues in data and other took a noticeable leap in 2006 from 11.7% to over 15.4% of total wireless revenues.

Table 4.6.3, shows the revenues that were derived by two main customer segments, pre-paid and post-paid customers. And, although there have been some success by the MVNOs in the pre-paid segment, most of the growth in that segment has been matched by post-paid additions by the facilities-based wireless service providers. Revenue growth and subscriber growth was driven equally from the pre-paid and post-paid segments.

Table 4.6.3
Post-paid and Pre-paid Wireless Revenues
(basic voice and long distance)
($ millions)

	2005	2006	*Growth 2005-2006*
Pre-paid	661.6	738.9	*11.7%*
Post-paid	8,244.3	9,235.2	*12.0%*
Total	8,905.9	9,974.1	*12.0%*

Source: CRTC data collection

Figure 4.6.5 presents the percentage of the number of subscribers on pre-paid and post-paid plans for the years 2005 and 2006. 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.

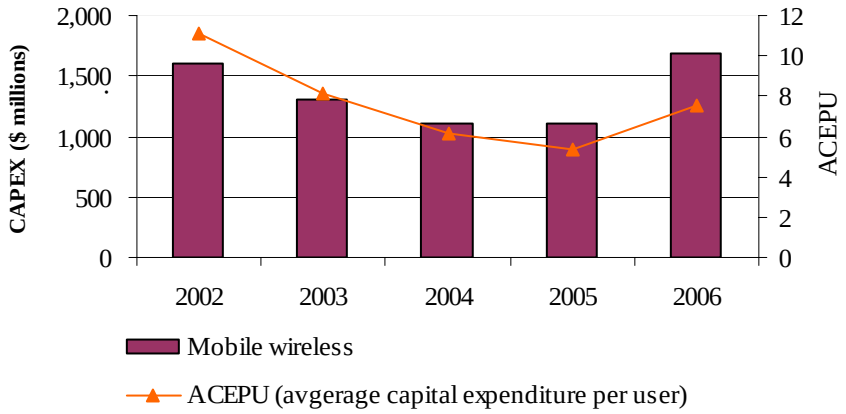
Figure 4.6.5
Percent of pre-paid and post-paid subscribers

Source: CRTC data collection

Capital intensity

Total wireless capital expenditures accounted for 24% of total telecommunications spending in 2006, while wireless revenues attributed to 36% of total telecommunications revenues. Average capital expenditure attributed to each user (i.e., average capital expenditures per user (ACEPU)) had been steadily decreasing until 2004. However, in 2005 it started to increase as expenditure growth kept pace with revenue growth.

Figure 4.6.6
Capital expenditures and
Average capital expenditure per user (ACEPU)

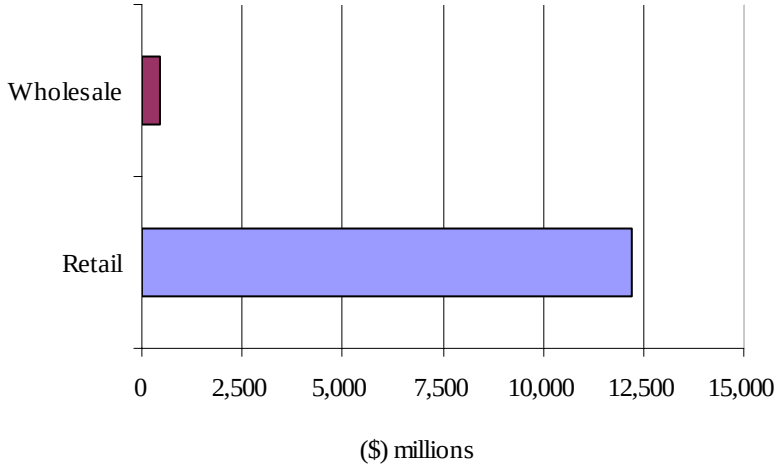


Source: CRTC data collection

Wholesale

Figure 4.6.7 illustrates the wholesale segment of the mobile wireless market as a proportion to the total mobile revenues. Wireless wholesale revenues generally consisted of (a) roaming revenues a company received 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. As MVNOs continue to gain market share the wholesale market is expected to grow.

Figure 4.6.7
Retail and Wholesale Revenue Split

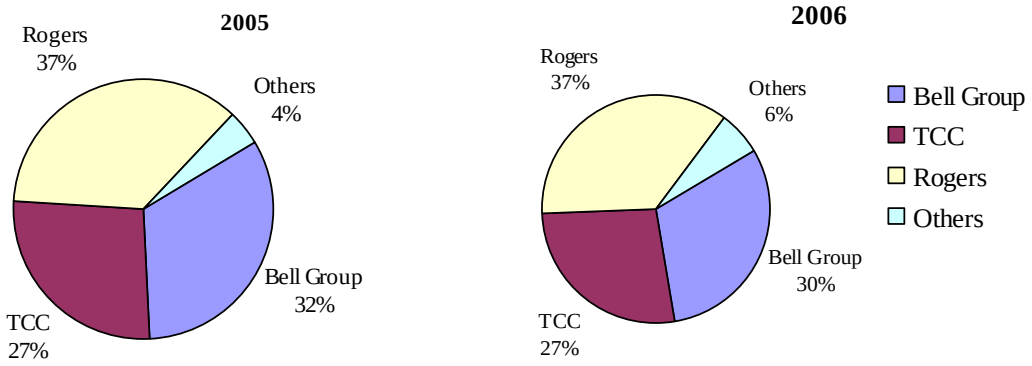


Source: CRTC data collection

Market share

Figure 4.6.8 and Figure 4.6.9 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 2005 to 2006 period. In 2006, at the national level, the three largest service providers (the Bell Group, Rogers and TCC) continued to dominate the wireless market both in terms of total subscribers and revenues accounting for more than 94% and 95% respectively.

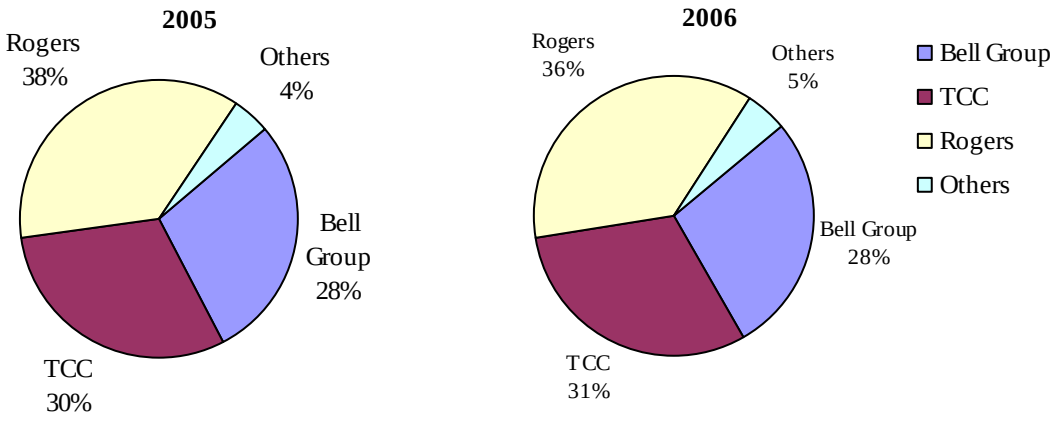
Figure 4.6.8
Wireless TSPs' subscriber market share[126]



Source : CRTC data collection

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

Figure 4.6.9
Wireless TSPs' revenue market share[127]



Source: CRTC data collection

Table 4.6.4 presents the wireless providers' subscriber market share by province and in the North[128] in 2006.

Table 4.6.4
Wireless subscriber market share by province[129]
(2006)

Province	Bell Group	TCC	Rogers	Others
British Columbia	11%	45%	42%	2%
Alberta	15%	58%	25%	1%
Saskatchewan	0%	3%	16%	81%
Manitoba	0%	12%	27%	61%
Ontario	35%	18%	44%	3%
Quebec	44%	21%	33%	2%
New Brunswick	77%	0%	21%	1%
Nova Scotia	84%	0%	14%	2%
Prince Edward Island	56%	21%	22%	1%
Newfoundland and Labrador	95%	0%	4%	1%
The North	100%	0%	0%	0%

Source: CRTC data collection

127 Other includes MTS Allstream, SaskTel and smaller wireless service providers.
128 The North includes: Yukon, Northwest Territories and Nunavut.
129 In the analysis of the number of provincial wireless subscribers, several anomalies were identified when compared to the data submitted by the companies in the previous year. These anomalies had an impact on the provincial market share results reported in last year's monitoring report.

Table 4.6.5 shows the subscriber ARPU by province. Not surprisingly, most provinces were much inline to that of the national ARPU figure, except for Alberta.

Alberta's ARPU was $70, the highest among all Canadian provinces even though all three national facilities-based providers were present. Based on a study conducted by Statistics Canada, as of December 2005, the proportion of households with only a cell phone were highest in Alberta and British Columbia.[130] In addition, residents of Alberta and British Columbia had the highest proportion of households that replaced their wireline local service with wireless cell phone service.[131]

On the other hand, Newfoundland and Labrador's ARPU was $45 which was the lowest number among all the provinces. Nova Scotia was the only province that showed a decrease in the ARPU from the previous year.

High ARPU values may be attributed to, among other things, the growing number of wireless only subscribers who use wireless service not only for local telecommunications needs but other services as well such as long distance and Internet service. However, there are other factors that could have contributed to higher ARPU, such as competition, usage patterns, demographics, technology, economics, and other.

Table 4.6.5
Average revenue per user (ARPU) by province
(excluding paging)

Province	2005	2006
British Columbia	$53.84	$59.00
Alberta	$64.17	$70.07
Saskatchewan	$50.72	$52.74
Manitoba	$53.63	$54.01
Ontario	$51.83	$54.40
Quebec	$44.29	$47.52
New Brunswick	$47.77	$48.84
Prince Edward Island	$49.34	$61.10
Nova Scotia	$54.17	$50.42
Newfoundland and Labrador	$40.57	$45.37

Source: CRTC data collection

[130] Source: June 2007 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. The Daily, Wednesday April 5, 2006.

[131] Source: Decima Research Inc. - The Daily, Wednesday April 5, 2006.

Churn rate

Table 4.6.6 shows the average monthly churn rate for each of the major wireless service providers for the years 2002 to 2006. 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 have generally been low.

Table 4.6.6
Average monthly churn rates

	2002	2003	2004	2005	2006
Bell Mobility	1.6%	1.4%	1.3%	1.6%	1.6%
Rogers	2.0%	2.1%	1.8%	2.1%	1.8%
TCI	1.8%	1.5%	1.4%	1.4%	1.3%

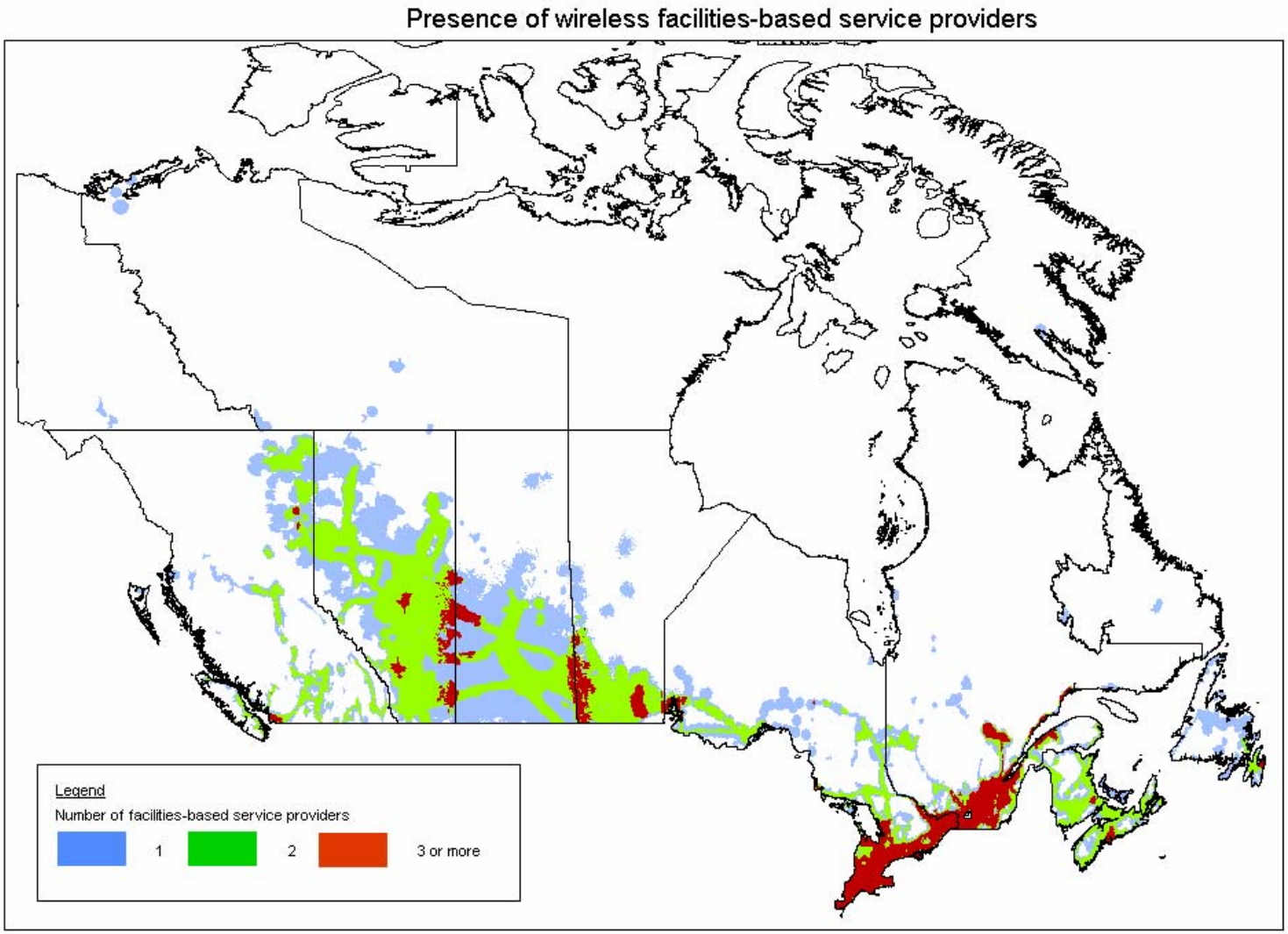
Note: Microcell was acquired by Rogers in 2004
Source: Companies' annual reports and CRTC data collection

Mobile coverage

The wireless footprint covers approximately 20% of Canada's geographic area. However, it encompasses approximately 98% of Canadians.

Mobile coverage did not expand significantly in 2006. However, the three major service providers have been upgrading their networks to 3G capabilities to improve capacity, allow for faster data transmission speeds, and more reliable Internet connections. Rogers, TCC and Bell Mobility have all deployed their own flavour of 3G in most urban centres and small regions. Rogers has rolled out GSM (EDGE) technologies, a world standard for wireless communications, while TCC and Bell Mobility have rolled out CDMA (EVDO) technologies, which is considered North America's digital technology standard.

The map on the following page displays facilities-based wireless service providers' coverage across Canada by number of service providers irrelevant of the network that is deployed. To further clarify the term facilities-based provider, the term is in reference to those providers who own and operate physical transmission facilities such as towers, transmitters/antennas, access trunks, switch centre/equipment, and other equipment and software required to offer mobile services. Companies who own the necessary cellular, personal communication service (PCS) spectrum or other spectrum (Satellite/AWS) that could be used to offer mobile services, but do not offer transmission services, are not considered as a facilities-based service provider in this report.


Presence of wireless facilities-based service providers
Legend
Number of facilities-based service providers
1
2
3 or more

Data collection and methodology 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.[1]

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 exchange 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 DCS 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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[1] *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 (TSPs) operating in Canada are classified into two broad categories, incumbent TSPs and alternative TSPs, as outlined below. The category into which a given TSP falls may change from one year to the next as a result of consolidation in the industry.

1) ***Incumbent TSPs*** 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 alternative TSPs group discussed below.

    a) *Large incumbent TSPs* 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 Bell Aliant Regional Income Trust Fund, 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 incumbent TSPs* 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) ***Alternative TSPs*** are telecommunications service providers that are not incumbent telephone companies as described in (1) above. However, this group includes incumbent TSP out-of-territory operations, such as Bell Canada's operations in Alberta and British Columbia. Alternative TSPs are subdivided as follows:

    a) *Facilities-based alternative TSPs* are the alternative TSPs that own and operate a telecommunications network. This includes companies such as cable broadcasting distribution undertakings (BDUs) and utility companies. This group is further subdivided into:

        i. Incumbent TSPs (out-of-territory)
        ii. Facilities-based non-incumbent TSPs

            - *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 Corporation, Shaw Communications Inc., Le Groupe Vidéotron ltée, Cogeco Inc. and Bragg Communications Incorporated.

- *Utility telcos and other carriers* category encompasses two smaller groups of TSPs: Utility telcos 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; and other carriers that own physical transmission facilities (e.g., inter-city, intra-city, or local). These service providers include such companies as Hydro One Telecom Inc., Toronto Hydro Telecom Inc., FibreWired Network and FCI Broadband (a division of Futureway Communications Inc.).

b) *Non facilities-based TSPs* are providers of telecommunications services that do not own and operate a telecommunications network. These companies are generally referred to as resellers since they generally acquire telecommunications services from another TSP to either resell the service or they create their own network from which to provide service to their customers. Examples include Primus Telecommunications Canada Inc., Distributel Communications Limited, YAK Communications (Canada) Inc., and many others, including independent Internet service providers.

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 / 2006	In 2005 local voice over Internet protocol (VoIP) services are part of the same relevant market as circuit-switched local exchange services. In 2006, the Governor in Council requires the Commission to refrain from regulating retail local access-independent VoIP services.

Market	**Year**	**Details**
Local exchange service	2006 / 2007	A framework for forbearance from the regulation of local exchange services established (2006). 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. In 2007 the market share loss criterion was replaced with one that emphasized the presence of competitive infrastructure; geographic areas were replaced by incumbent TSP exchange boundaries; winback rules and the competitive safeguards for promotions were eliminated; and competitor quality of service indicators for forbearance applications were modified.
Data and private line	2007	A framework for forbearing from regulating high-speed intra-exchange digital network access (high-speed DNA) services and metropolitan wavelength services (MWS) was established.

Status of local forbearance
Residential and business exchanges
(as of 1 June 2007)

As of 1 June 2007, the Commission received applications from the incumbent TSPs for local forbearance representing a total of 423 residential and 327 business markets respectively within 430 exchanges representing 69% of all residential lines and 57% of all business lines. This Appendix provides a summary listing of these applications by major centre.

The major centres identified for priority review in the Forbearance Order are identified in the following table with an asterisk (*).

Major centre	Number of local exchanges	Number of exchanges for which local forbearance applications have been received		Number of exchanges for which local forbearance applications have been received as a percent of total exchanges in the major centre	
		Residential	Business	Residential	Business
British Columbia					
Vancouver*	19	7	0	37	0
Victoria	4	1	0	25	0
Remaining exchanges	259	0	0	0	0
Alberta					
Calgary*	8	1	0	13	0
Edmonton*	27	1	0	4	0
Remaining exchanges	303	0	0	0	0
Saskatchewan					
Saskatoon	10	1	0	10	0
Regina	6	0	0	0	0
Remaining exchanges	214	0	0	0	0
Manitoba					
Winnipeg*	14	1	0	7	0
Remaining exchanges	230	0	0	0	0
Ontario					
Toronto*	50	46	29	92	58
Ottawa-Gatineau*	28	21	9	75	32
Hamilton*	12	9	9	75	75
London*	16	10	5	63	31
Kitchener	8	8	2	100	25
St. Catharines-Niagara	13	9	9	69	69
Windsor	11	2	2	18	18
Oshawa	8	6	2	75	25
Remaining exchanges	531	60	32	11	6
Quebec					
Montreal*	40	39	39	95	98
Quebec City*	17	10	10	59	59
Remaining exchanges	518	105	105	20	20
New Brunswick					
Fredericton	2	2	0	100	0
Remaining exchanges	86	12	2	14	2
Nova Scotia					
Halifax*	16	8	8	50	50
Remaining exchanges	131	46	45	36	34
Prnce Edward Island					
Charlottetown	4	1	1	25	25
Remaining exchanges	22	11	11	50	50
Newfoundland and					
St. John's	6	0	1	0	17
Remaining exchanges	206	0	0	0	

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.

Based on the recommendations of the Task Force, two federal government programs were subsequently established to directly support broadband deployment in rural, remote, northern and First Nation communities.

The first of the programs was Industry Canada's Broadband for Rural and Northern Development Pilot Program (the Broadband Pilot Program).[1] Launched in September 2002, the Broadband Pilot Program was modeled on the local aggregator/community champion funding model. The federal government committed a total of $105 million to the Broadband Pilot Program.

The Broadband Pilot Program funding was made available through a two-step process. In the first phase, eligible applicants submitted proposals for "seed funding" to support the development of a business plan. In the second phase, funds were made available to successful applicants to implement their broadband service proposals. As well, two funding application rounds were scheduled under the program. The first, which was initiated in the fall of 2002, saw successful applicants receive $44 million in funding to support the implementation of broadband networks in 433 communities. The second, which was initiated in May 2004, provided successful applicants with $35 million in funding 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.[2] In total, close to 900 rural, remote, northern and Aboriginal communities, of which 140 are First Nations Reserves, have benefited from Broadband Pilot Program funding. The Broadband Pilot Program concluded on 31 March 2007.

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

2 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.

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 1.21 dollars for every dollar invested.

The second of the two programs is the National Satellite Initiative (NSI).[3] Infrastructure Canada, Industry Canada and the Canadian Space Agency (CSA) jointly launched this program in October 2003. Responsibility for the administration of this program was held by Industry Canada's Broadband Office.

The NSI 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 value of the NSI 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.

Funding under the NSI 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 being 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.

The deadline for second round NSI applications was May 2005. Funding in this round will be drawn from the $85 million CSIF component of the initiative. Currently, six applications are under review and two projects have received funding. The two funded projects are in northern Canada and also received funding from the Broadband Pilot Program. The Northwest Territory project was provided with $7 million[4] in funding and Nunavut was provided $7.83 million.[5]

A third round under the NSI is under way which pertains to the $50 million CSA component of the initiative, representing satellite capacity to be made available for eligible public and community-based institutions in the north and far north until 2015. This component of the NSI will not, however, cover the cost of the ground segment, gateway service, local access terminals or Internet service.

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

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

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

As outlined in previous Monitoring Reports, in addition to the Broadband Pilot Program and NSI, the federal government has introduced a variety of other initiatives, which either directly or 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 in part, as well as three other projects described in the Provincial and Territorial Broadband Deployment Programs section and the Municipal Rural Infrastructure Program, as well as various regional development programs. There are also Connecting Canadians initiatives such as the Community Access Program and SchoolNet, including First Nations SchoolNet, which have indirectly contributed to, and benefited from, the deployment of broadband facilities. 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 research-based Internet infrastructure and next-generation communications products, applications and services.

It should also be noted that in March 2006, the Telecommunications Policy Review Panel (the Panel)[6] established by Industry Canada submitted its report to the Minister of Industry (the Report).[7] 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 still under consideration by the Minister of Industry.

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; subsequent Monitoring Reports provided an update on the status of these programs.

At this time, many of the provincial government broadband programs have been completed, with some exceptions; and all territorial broadband programs have long been completed. Furthermore, as a result of the sunsetting of the Broadband Pilot Program, deployment in the north is now largely dependent on the federal government's NSI. However, announcements made in 2007

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6 Telecommunications Policy Review Panel – Final Report 2006, March 2006.

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

provincial budgets demonstrate a renewed commitment to bridging broadband access on behalf of certain provinces. An overview of the provinces' broadband efforts is provided below.

British Columbia

In the Province of British Columbia, NetWork BC which was established in 2004 by the Premier's Technology Council works with communities in the province and the private sector with the goal to bridge the digital divide in British Columbia by 2007. The approach taken by NetWork BC to achieve this goal involves upgrading and extending the existing Shared Provincial Access Network (SPAN/BC). Under the plan, 366 communities[8] in the province were identified as being a priority for high speed Internet access. Of those 366 communities, 151 did not have access to broadband connectivity as of April 2005.[9]

The Province of British Columbia and TELUS Communications Company (TCC) announced, in April 2005, that they had reached an agreement to ensure that affordable, high-speed open access points of presence be brought to all of the targeted communities by the end of 2006.[10] In March 2006, a revised deployment schedule was released which would see the network completed by the second quarter of 2007. It appears that 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 addition to the deployment of broadband points of presence, NetWork BC funded $1 million, in two rounds, in community networking infrastructure grants to 56 communities to assist in the deployment of last mile infrastructure.[11]

Alberta

In September 2005, the Province of Alberta announced that the Alberta SuperNet was fully operational throughout the province. In partnership with the government of Alberta, Bell Canada and Axia SuperNet Ltd., construction and connection of 12,000 kilometres of fibre and wireless technology was completed, to make broadband service available in rural SuperNet communities. Approximately 430 communities were connected to the network and can now be served by Internet Service Providers (ISPs).

Saskatchewan

In the Province of 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

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[8] 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.

[9] *Closing the Digital Divide for British Columbia communities*, NetWork BC, April 2005.

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

[11] 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.

in the province and their surrounding areas over the next few years.[12] As of January 2007, the CommunityNet initiative had provided high-speed Internet access to public institutions in 366 communities, linking more than 834 educational facilities, 310 health facilities, 86 First Nations schools, 256 government offices and 162 libraries. Upon completion of CommunityNet II, more than 86% of the Saskatchewan population will have access to high speed Internet.[13]

In addition to the CommunityNet initiative, the $11.6 million Northern Broadband Network realized the expansion of high-speed Internet to 35 northern Saskatchewan communities in 2006. More than half of the funding for this project came from SaskTel and the balance from Industry Canada's Broadband Pilot Program and other federal western and northern regional development funds.[14]

Ontario

While there were no significant changes to existing broadband development projects in the Province of Ontario during 2006, the 2007 Ontario Budget announced that the provincial government would be investing $10 million in 2007-2008 to help expand broadband coverage in rural southern Ontario. In addition, the Northern Ontario Heritage Fund Corporation (NOHFC) will also be contributing to bridging broadband access in the province with a renewed focus for its Emerging Technology Program. The NOHFC's announcement was made in January 2007 and aims at bridging broadband Internet access and cellular service to most of northern Ontario within three years. Specific details regarding these investments are not known at this time. As for the Connecting Ontario: Broadband Regional Access (COBRA) program; it remains suspended pending a review of the province's overall long term infrastructure support plans although it is likely that COBRA will be replaced with the initiatives outlined above.

Quebec

In the Province of Quebec, the Villages Branchés du Québec is still in operation, but has not been accepting applications since November 2003. Furthermore, in the summer of 2005, the province and the federal government jointly announced the completion of a $13.8 million project to construct an underwater fibre optic link between Gaspésie and Îles-de-la-Madeleine. This project provided broadband access to schools and hospitals, among others, on the islands. The Government of Quebec provided half of the funding, while the balance came from the CSIF.[15]

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[12] *CommunityNet I* provided broadband access to 366 Saskatchewan communities at a cost of $71M.
[13] Saskatchewan News Release, "SaskTel wireless Internet in three more communities," 16 January 2007.
[14] Saskatchewan News Release, "Northern Saskatchewan high-speed access funding completed," 17 January 2005.
[15] Infrastructure Canada News Release, "Government of Canada invests in fibre optic cables for Îles-de-la-Madeleine," 3 September 2004.

New Brunswick

In June 2006, it was announced that the New Brunswick Broadband Initiative was completed. A collaboration between the Government of Canada, the Government of New Brunswick and Aliant Telecom Inc. (now part of Bell Aliant), the program has provided all regional health care centres, business parks and First Nations communities, as well as most New Brunswick residences and businesses, with access to high-speed Internet Service. The program has resulted in installations and upgrades of broadband equipment that has extended broadband coverage to 327 communities throughout rural New Brunswick. The Government of Canada, through the CSIF, provided up to $16.5 million for this infrastructure project. The Government of New Brunswick invested $12.5 million and Aliant Telecom Inc. $15.6 million.[16]

Nova Scotia

In 2006, the Province of Nova Scotia made a commitment to provide broadband access to all Nova Scotians by 2009. This commitment was reaffirmed in the province's 2007 budget which announced that $10 million will be spent, in partnership with private sector service providers, to deliver infrastructure to the first set of unserved areas in the province.

Newfoundland and Labrador

In the Province of Newfoundland and Labrador, the federal government, the provincial government and a private sector partner, Persona Communications Inc. (Persona), continue to work on a $37 million project to bring broadband access to 68 rural and remote schools and 103 communities by 2008. The federal and provincial governments are each providing $5 million and Persona is providing the balance.[17]

The $1-billion Municipal Rural Infrastructure Fund (MRIF) has been structured to provide a balanced response to local infrastructure needs in urban and rural Canada and to 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. Broadband projects which are funded, in part, by MRIF are the *Central Manitoba Broadband Project* ($700,000 MRIF contribution), the *Parkland Telecommunications Network (MB)* ($1.3 million MRIF contribution), the *Sustainable Northern Connectivity Strategy (MB)* ($1.4 million MRIF contribution) and the *Halifax Regional Municipality (HRM) Broadband Project* ($950,000 MRIF contribution). In 2006, the Federal Budget renewed the MRIF, with a commitment of an additional $2.2 billion in funding over five years, effectively tripling the amount of funding that will be invested under the program. It is expected that the Government of Canada will announce decisions on how to invest the new funds in the fall of 2007.

[16] New Brunswick News Release, "Successful broadband program completed ahead of schedule," 29 June 2006.
[17] Infrastructure Canada News Release, "Agreement Brings Broadband Access to Rural and Remote Schools and communities in Newfoundland and Labrador," 15 September 2005.

In addition to provincial initiatives, FedNor announced, in 2005, that it would invest $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 fulfill their broadband needs. Following this announcement, four non-profit organizations were chosen to champion the development of broadband services and ICT throughout Northern Ontario. These non-profit organizations later championed projects either wholly or partly funded by FedNor. In addition, FedNor and the information technology (IT) champions also promoted deployment of ICT applications in areas including, but not limited to health, education and justice, 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 through various government initiatives.

c) Private sector broadband initiatives

Under the 2002 to 2006 price cap regime, in order to avoid an adverse impact on local competition, the Commission required each large incumbent telecommunications service provider (TSP)[18] to create a deferral account in conjunction with the price cap regime.[19] The large incumbent TSPs were required to place into those accounts amounts equal to the revenue reductions that would otherwise have resulted from an application of the price cap formula. In *Disposition of funds in the deferral accounts*, Telecom Decision CRTC 2006-9, 16 February 2006 (Decision 2006-9), the Commission set out guidelines for the disposition of funds accumulated in the deferral accounts of the large incumbent TSPs. The Commission determined that approximately $650 million in the deferral accounts should be spent, to the greatest extent possible, on initiatives to expand broadband services to rural and remote communities, and to improve accessibility of telecommunications services for persons with disabilities (with a minimum of 5% to be spent toward accessibility).[20] The large incumbent TSPs were required to consult with provincial governments on proposed broadband initiatives prior to submitting their proposals to the Commission. This would ensure that their plans take into account already existing government initiatives and priorities. It should be noted, however, that Decision 2006-9 has been appealed and that parties are in the process of filing their pleadings with the Court.

Although Decision 2006-9 has been appealed, the Commission issued *Review of proposals to dispose of the funds accumulated in the deferral accounts*, Telecom Public Notice CRTC 2006-15, 30 November 2006 to initiate a proceeding to review the proposals submitted by the large incumbent TSPs pursuant to Decision 2006-9. These proposals include broadband expansion proposals submitted by Bell Canada, TCC and MTS Allstream Inc. As part of this process, competitive broadband service providers had an opportunity to submit their current and planned service areas and

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

[19] *Regulatory framework for second price cap period*, Telecom Decision CRTC 2002-34, 30 May 2002, as amended by Telecom Decision CRTC 2002-34-1, 15 July 2002.

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

to request the exclusion of communities from the large incumbent TSPs' roll-out plans on the basis that they are served or will be served in the near future.

Table A.5.1
Summary of provincial government broadband deployment initiatives and investments (2002 to 2006)

Province/Territory	**Funding ($ millions)**	**Description**
Alberta	193.0	*SuperNet* project linking 422 communities across Alberta.
British Columbia	1.0 (Note 1)	*NetWork BC* project to expand SPAN/BC broadband network to 366 communities across B.C. In addition, *NetWork BC* provided funds to bring last mile solutions to 56 communities.
Manitoba	47.0	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 Bell Aliant that extended broadband coverage to over 327 communities.
Newfoundland and Labrador	5.0	Private/public initiative focused on educational institutions across the province.
Nova Scotia	1.0	*Information Economy Initiative* focused on educational institutions across the province (Bell Aliant 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	150.0	*Villages Branchés du Québec* aimed at linking educational and municipal institutions to provincial government's broadband network.
Saskatchewan	117.0	*Community Net I & II* and *Northern Broadband Network* initiatives providing broadband services in well over 450 communities.
Yukon	17.0	*Connect Yukon* initiatives provided broadband availability in 11 communities.
Total	545.9	

Note: (1) No explicit contribution made by the provincial government

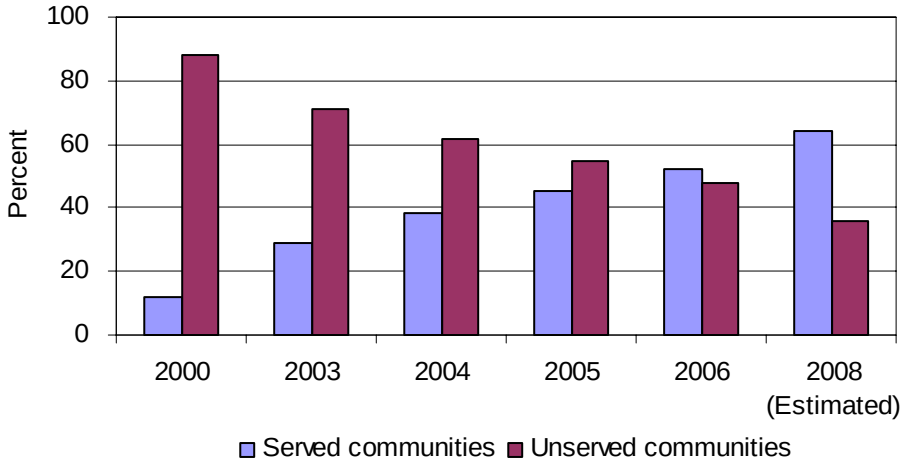
Table A.5.2
Summary of programs for broadband deployment initiatives and investments

Programs	Funding ($ millions)	Description
Broadband for Rural and Northern Development Pilot Program	105.0	The Program brings broadband or high capacity Internet to unserved rural, remote and Aboriginal communities.
National Satellite Initiative	155.0	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	4.4	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	10.0	Assists 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	302.8	

d) Progress under existing initiatives

Investments made through the Broadband Pilot Program extended broadband access to approximately 900 rural, northern and Aboriginal communities by the first quarter of 2007. 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 2008. In total, roughly 1,500 otherwise unserved communities will have broadband access by the end of 2008 as a result of these various initiatives.

Figure A.5.1
Communities with and without broadband access



Source: Industry Canada

The existing government broadband programs have proved successful in significantly reducing the number of communities in Canada without broadband access to the Internet. From less than 20% of communities with broadband access in 2000, 64% will have access by the end of 2008 and leaving 36% still unserved.