Mobile demand
and service pricing
in Canada

Report presented to:

MTS Allstream Inc.

September 25, 2006
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1. Introduction and key findings

This Report was developed independently by Lemay-Yates Associates Inc. (LYA) on behalf of MTS Allstream Inc. The purpose of the Report is to provide input to Government policy discussion concerning the structure of the Canadian mobile industry and in particular with respect to the potential licensing of new mobile carriers.

This Report provides a perspective on the evolution of Canadian mobile demand and service pricing two years after the acquisition of new-entrant Microcell by Rogers in 2004 and almost six years after the acquisition of then new-entrant Clearnet by Telus.

In 2003, LYA developed a Report for Microcell which set out that a four player industry structure would be viable in Canada.¹ In its 2003 Report LYA cited precedents from other countries, paralleling the experience in Canada, that subscriber demand was stimulated by the licensing of new competitors. LYA also demonstrated that increased competition such as seen in the US or the UK increases demand and does not necessarily lead to lower subscriber spending. There is significant upside for mobile carriers to continue to innovate and expand the scope and usage of their services without competing on price alone. Lower “package” prices in the US were found to lead to greater stimulation of usage.

Thus, a key consideration for the current policy discussion – given the reduction in the number of competitors contesting the Canadian market and lower rivalry – is whether Canadians are being well served by the present industry structure. Given the slower growth in overall demand, coupled with increasing prices, it can be concluded that they are not.

Firstly, it is notable that Canadian wireless penetration is second last among OECD countries. Canada’s experience with slower mobile growth in recent years is inconsistent with the experience of other countries. The US has continued to grow steadily, with subscriber penetration at over 70% of the population; 35% higher than Canada at the end of 2005. The EU15 and UK penetration rates have grown steadily up to at or over 100% of the population, depending on the country. This is a penetration rate that is double that of Canada.

Canada’s lower penetration can be translated into a penetration “gap” relative to the other countries – expressed in years behind. Relative to the US, by the end of 2005 the gap was about 2.25 years. Relative to the UK, Canada has declined steadily to 2005 when the penetration gap was 6.5 years.

There can be arguments as to why Canada could be “behind” in development of mobile services – less dense population, slower to issue licenses, etc. But there does not appear to be any evidence that Canada is going to catch up, or close the gap relative to the other countries, any time soon. Canada appears to be remaining staunchly behind.

The licensing of new competitors is a major factor in stimulating subscriber growth. Contrary to the experience in other countries, the Canadian industry has seen a reduction in the number of competitors, with evident impact on the evolution of subscriber penetration. In particular:

- Subscriber additions (as a % of population) peaked shortly after Telus acquired CLEARNET in late 2000, reducing the number of competitors per market by one.
- In 2001 the Industry Canada PCS auction did not result in any new entrant. Incumbents acquired additional spectrum across the country.
In 2004, Industry Canada lifted the spectrum cap, facilitating the acquisition of Microcell by Rogers, further reducing the number of competitors.

These events no doubt played a role in dampening subscriber growth. As new operators have been licensed in the US and the UK, penetration has increased relative to that in Canada as the number of competitors in Canada has decreased.

Secondly, lower competitive rivalry in Canada is also reflected in pricing trends.

While Canadian ARPU (average revenue per user) are lower on an absolute basis compared to the US, two trends underlying this are important. Canadian ARPU are increasing, reflecting the lower level of competition and penetration. And Canadians get less for their money as an analysis of pricing and service usage shows. Thus lower spending in Canada is not an indicator that Canadians are being well served.

Since usage also drives investment – due to the need to add capex to support capacity increases – there is a consequent negative impact on the industry overall.

Lower competitive rivalry keeps demand lower. With less market stimulation there is less interest in the services and increases in pricing. With the consequent lower usage, investment may also suffer.

The lower level of market stimulation can also be seen by considering specific services targeted to particular market segments. One of the more neglected markets is small and medium business. The lack of targeting of the SME market – and increasing prices particularly to low end users – is yet another indicator that the market lacks rivalry.

Based on the indicators discussed in this report – evolution of subscriber penetration and pricing relative to other countries – it is becoming apparent that Canadian consumers
may not be reaping the benefits of the global explosion in development of mobile services, and consequent innovation and price reductions. Longer term the industry could also suffer if it under-invests due to the lower demand and usage in Canada.

This is consistent with LYA’s earlier findings in 2003 and also with the recent conclusions of the Telecom Policy Review (TPR) panel which concluded that new wireless services “are developing and deploying … faster in the US and many other countries than they are in Canada” and that “Canada has been slow to adopt pro-competitive initiatives”.\(^2\)

A major way to stimulate demand and promote industry development would be to license one or more additional carriers. The increased competitive rivalry would likely help put Canada back on a growth path to ultimately catch up with its “peer” countries.

Given the level of investment required to build out wireless networks, Canada would also benefit from lifting of foreign investment restrictions to encourage a large international carrier to enter the market.

As the TPR panel pointed out: “Canada is one of very few, if any, OECD countries where major international wireless operators do not participate actively in the supply of wireless services”. And that these operators “have brought significant new technology transfers, capital, marketing and management know-how to the US and most other OECD countries – but they are not able to participate fully in Canadian markets. Based on the experience of other countries, it seems difficult to dispute that their presence would significantly improve the range, quality and pricing of wireless services available to Canadians.”\(^3\)

\(^3\) Ibid
2. The Canadian mobile industry

The recent evolution of the Canadian mobile industry is summarized in Table 1 in terms of subscriber growth since 2000.

<table>
<thead>
<tr>
<th>Canada</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetration</td>
<td>28%</td>
<td>34%</td>
<td>38%</td>
<td>42%</td>
<td>47%</td>
<td>52%</td>
<td>57%</td>
</tr>
<tr>
<td>Subscribers</td>
<td>8,731,220</td>
<td>10,678,560</td>
<td>11,934,565</td>
<td>13,442,350</td>
<td>14,984,396</td>
<td>16,918,521</td>
<td>18,754,436</td>
</tr>
<tr>
<td>Sub growth</td>
<td>27%</td>
<td>21%</td>
<td>11%</td>
<td>12%</td>
<td>10%</td>
<td>12%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Population per Statistics Canada; subscribers per CWTA up to 2004; per LYA 2005-2006

The number of subscribers to mobile services in Canada has roughly doubled over the past 5 years, but at a declining rate of growth. Growth in subscribers was 12% in 2005 and estimated to be 11% in 2006, compared to 27% in 2000.

The evolution of subscribers in terms of penetration of the overall population is shown in Figure 1.

At the end of 2005 Canadian mobile penetration stood at approximately 52% of the population, up from 0% in 1985 and 10% in 1995. Figure 1 above shows that growth in
penetration accelerated steadily from 1985 to 2001. After 2001, however, the curve began to flatten and growth in penetration slowed.

2.1 **Canadian mobile penetration compared to other countries**

Canada’s experience with slower growth in recent years is inconsistent with that of other countries.

Figure 2 compares Canada’s mobile penetration from 2000 to 2005 alongside that of the US, the UK, the “EU15” (15 European countries including the UK), and Australia/New Zealand (shown together).

![Figure 2 – Canadian mobile penetration compared with that of other countries](image)

The US has continued to grow steadily, to over 70% of the population; 35% higher than Canada at the end of 2005.
The growth in the EU15 and UK penetration rates is possibly slowing, but both countries have seen steady growth up to at or over 100% of the population, depending on the country. This is a penetration rate that is double that of Canada.

Canadian wireless penetration is second last among OECD countries.\(^4\) Canada’s Telecom Policy Review (TPR) panel concluded that “Canada’s mobile wireless industry lags behind its major trading partners on a number of key measures”, and that given the “growing importance of this segment, Canada should develop a more efficient and vibrant wireless industry”.\(^5\)

The following sections take a closer look at the widening gap between Canadian mobile penetration and that of the US and the UK.

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\(^4\) TPR Report, Industry Canada, 2006, page 1-17

\(^5\) Ibid, page 1-21
2.2 **The Canada-US gap**

Canadian mobile penetration has been consistently below that of the US, as shown below. But the gap between Canada and the US has been widening in recent years.

![Figure 3 – Canada vs. US mobile penetration](image)

The lag in Canadian versus US mobile penetration is shown below expressed in years.

To illustrate how the chart works… in 1995 Canadian penetration reached 10% of the population. In the US, the 10% level had been reached one year earlier in 1994. Hence in 1995 Canada lagged one year behind the US in terms of mobile penetration – a one year “gap”, shown as -1 on the Figure below for 1995.

This gap is expressed similarly for other years and has been getting longer since the early 1990’s.
Canada was 1.75 years behind in 1998, increased to being only 1.25 years behind in 2000 and subsequently declined relative to the US. By the end of 2005 penetration was about 2.25 years behind that of the US.

Thus from an early start when Canada lagged the US by less than one year – during the duopoly days of cellular – Canada’s position relative to the US has declined steadily over time with the exception of a “bump” from 1998 to 2000 which is discussed further below, after considering the gap with the UK.

2.3 The Canada-UK gap

Canadian penetration fares worse on a comparative basis when the evolution of the UK market is considered. From a similar penetration level in 1995 the UK has since accelerated to over 100% penetration – about double that of Canada – as shown below.
The difference between Canada and UK mobile penetration is shown below expressed in years. In 1996 Canadian penetration reached 12% of the population. In the UK, the 12% level had been reached one year earlier in 1995. Hence in 1996 Canada was one year behind the UK in terms of mobile penetration – a one year “gap”, shown as -1 on the Figure below for 1996. This gap is expressed similarly for other years.
From the starting point of less than one year lag relative to the UK, Canada declined steadily to 2005 when penetration was 6.5 years behind that of the UK. Or put another way, given the historical rate of growth of the Canadian mobile industry, it will take until almost 2012 for Canada to “catch up” to where the UK was at the end of 2005.

### 2.4 Major events on the Canadian mobile timeline

There can be arguments as to why Canada could be “behind” in development of mobile services – less dense population, slower to issue licenses, etc. But there does not appear to be any evidence that Canada is going to catch up, or close the gap relative to the other countries, any time soon. Canada appears to be remaining staunchly behind.

Canada’s population was covered to a level of 94% by the end of 2004, and is now at 97%, and essentially the same amount of spectrum has been licensed in Canada as
elsewhere.\textsuperscript{6} Therefore neither lack of coverage, nor lack of spectrum in the past, can be considered to be the root causes of lower subscriber penetration.

The slower growth in Canada and the increasing gap relative to the penetration rate in other countries must be due to other factors.

The licensing of new competitors is a major factor in accounting for subscriber growth. This is due to the stimulation of the market as the new entrants design new pricing and service plans and develop ways of differentiating themselves from incumbents.\textsuperscript{7}

In past research, LYA found that typically subscriber additions are three to six times higher after licensing of a new entrant, 3 years before/after and 5 years before/after licensing respectively.\textsuperscript{8}

Contrary to the experience in other countries, the Canadian industry has seen a reduction in the number of competitors, with evident impact on the evolution of subscriber penetration. In particular:

- Subscriber additions (as a % of population) peaked shortly after Telus acquired Clearnet, reducing the number of competitors per geographic market by one.

- In 2001 the Industry Canada PCS auction did not result in any new entrant. Incumbents acquired additional spectrum across the country.

\textsuperscript{6} Population coverage per CRTC Telecommunications Monitoring Report, October 2005, page 77, and July 2006, Section 4.6. In terms of spectrum, Canada generally follows US band plans and has licensed the same two cellular A/B licenses and six PCS A-F licenses as have been licensed across the US.

\textsuperscript{7} Another “argument” for Canada being behind could be that consumers in Canada may not want mobile services and that this could account for lower penetration. This potential theory is not addressed herein. However Canadians are not known to have lagged in demand for many other services – e.g. broadband Internet, cable television, etc.

\textsuperscript{8} “The case for four mobile telecom operators in Canada”, Lemay-Yates Associates Inc., Report prepared for Microcell, May 2003, Table 1.
• In 2004, Industry Canada lifted the spectrum cap\(^9\), facilitating the acquisition of Microcell by Rogers, further reducing the number of competitors.

These events no doubt played a role in dampening subscriber growth as can be seen when they are overlaid on the curve of subscriber penetration and yearly additions.

The Canadian mobile industry timeline illustrating these events is shown in the following figure. Mobile penetration and yearly subscriber additions (as a % of population) are shown underlying key events in the industry.

![Figure 7 – Canadian mobile timeline of major events](image)

Up to the end of 1996, the penetration of mobile services in Canada had followed a relatively stable trend line from 1985 when cellular service was launched by Rogers.

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\(^9\) In 1995 at the time of PCS licensing, Industry Canada limited spectrum license holders to 40 MHz in total (per market). This was revised to 55 MHz in 1999. See DGTP-007-03, Section 5. Since Microcell held a 30 MHz PCS license, the cap would have been exceeded in most areas of the country by any combination of Microcell with another provider (Telus, Rogers, Bell).
Cantel and by the incumbent telco affiliates (later operating under the banner of Mobility Canada).\(^\text{10}\)

In 1995, Industry Canada awarded four (4) additional licenses for Personal Communications Service or PCS. Two new licensees, Microcell and Clearnet each received 30 MHz of spectrum. The mobile affiliates of the incumbent telephone companies each received an additional 10 MHz of spectrum. Industry Canada held back awarding two of the bands totaling 40 MHz and this leftover spectrum was subsequently auctioned in 2001.

The two new 1996 licensees launched PCS service in Canada between the fourth quarter of 1996 and early 1997.

The introduction of PCS and launch of new carriers resulted in almost three times as many subscribers added per year.

The role of the two new carriers in stimulating this market was significant. In the three years 1997, 1998 and 1999, the two new entrants captured 19%, 39% and 35% respectively of the total subscriber growth in the market. Subscriber additions before and after the introduction of PCS services by the two new entrants is summarized below.\(^\text{11}\)

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\(^{10}\) Independent telephone companies, such as Thunder Bay Telephone Company, were also awarded cellular spectrum, but were excluded from the 1995 PCS awards. In 2004 the Ontario independents that are members of the Ontario Telephone Association (OTA) acquired the PCS licenses covering their serving territories. A number of other licenses covering independent areas were awarded in a bidding process in 2005 and 2006.

\(^{11}\) Figure excerpted from: “The case for four mobile telecom operators in Canada”, Lemay-Yates Associates Inc., Report prepared for Microcell, May 2003
While 1995 represented the beginning of an industry structure with four and potentially up to five providers per market – Bell, Telus, Rogers, Microcell and Clearnet – 2000 marked the beginning of the end.

In late 2000, Telus acquired Clearnet, removing one competitor from the market. With the spectrum cap still in place, Telus was required to divest of some spectrum (particularly in its ILEC operating areas) to accomplish this. Shortly thereafter, subscriber additions peaked at 6.3% of the population added as subscribers in one year. Microcell then ran into financial difficulty, eventually leading to its acquisition by Rogers in 2004 after Industry Canada lifted the spectrum cap.

In early 2001 another event also marked the evolution of the industry. Industry Canada conducted an auction of the PCS licenses that it had not awarded in 1995. This consisted...
of the PCS C block licenses (30 MHz divided into three smaller licenses of 10 MHz each), the 10 MHz F block as well as returned spectrum in Telus’ ILEC territories in BC and Quebec.

The 2001 auction resulted in the three large mobile incumbents (i.e. Rogers, Bell and Telus), paying $1.47 billion – or about 98% of the auction proceeds – for additional licenses covering the country. The only potential new entrant was fledgling W2N Inc., a start up that purchased Telus’ returned licenses. W2N never launched and in 2005 sold its licenses to Bell Canada.

While there was no restriction on a new entrant participating in the 2001 auction, there was also nothing done by Industry Canada to ensure that there would be a new entrant. There was no specific provision made to facilitate entry – e.g. a new entrant spectrum “set aside”. Nor were the foreign investment rules lifted, which could have encouraged entry by a large foreign mobile carrier.

With the investment potential limited, the 2001 auction did not attract much in the way of foreign interest. The only exception was Sprint PCS of the US, the only foreign entity that participated in the auction. Sprint PCS withdrew after a few rounds.

Even though there was a spectrum “cap” in place, there was enough “room” for Bell, Telus and Rogers to add incremental licenses to “top up” their holdings. Rogers could add 20 MHz in any market. Bell could add 20 MHz or more. Telus could add no more

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12 Until Telus acquired Clearnet, Bell and Telus largely kept to their respective ILEC operating areas. In late 2001 Bell and Telus signed a reciprocal roaming and resale agreement to facilitate expansion in each other’s territories.
13 TBayTel Mobility acquired the license covering Thunder Bay, Ontario where it is the incumbent.
14 No one could hold more than 55 MHz in total cellular, PCS and ESMR spectrum.
15 As cellular incumbents, Bell, Telus and Rogers both had 25 MHz cellular licenses and 10 MHz PCS licenses. The spectrum cap was at 55 MHz at the time of the auction. Bell Canada – In its ILEC territories had 25 MHz of cellular spectrum plus 10 MHz of PCS from the 1995 comparative selection process. With 40 MHz available in most areas in the 2001 auction, this meant Bell could bid on 20 MHz within its ILEC territories and any amount elsewhere. Rogers already with a national footprint, meaning it could bid on 20 MHz anywhere.
than 10 MHz. In the cases where all three could bid (i.e. outside of Telus ILEC areas), the bidding resulted in Telus acquiring 10 MHz and Bell and Rogers acquiring 10 MHz or 20 MHz each. Within the Telus ILEC areas, Bell and Rogers acquired 20 MHz each.

Other than the Telus returned licenses, the auction resulted only in the “spoils” being divided amongst Bell, Rogers and Telus. The 2001 auction thus left the Canadian industry landscape unchanged.

The Canadian experience can be contrasted with that of the US and the UK, where auctions have resulted in increased numbers of competitors and where consequently penetration has accelerated well ahead of that in Canada.

2.4.1 Impact of events in Canada compared to the US

The following Figure overlays key events in Canada and the US on the timeline showing the gap between Canadian and US mobile subscriber penetration. The gap between Canada and US has continued to widen as US license auctions have increased the number of competitors from typically three per market to five.

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16 Telus (outside of its ILEC territories) had 30 MHz from the Clearnet acquisition plus ESMR (“MiKE” service) spectrum counted as 10 MHz for purposes of the cap. Thus it could only bid on a 10 MHz license to stay within the 55 MHz cap.

17 Microcell did not participate in the auction.
Figure 9 – Canada-US mobile penetration gap and timeline of events

In the US, the FCC conducted a number of auctions of PCS licenses primarily from 1994 to 1997. At that time, over 80% of the US population was already being served by at least three competitors. After the major auction activity, i.e. from 2000 onwards, this increased to five competitors.

During the same period from 1998 to 2001, Canada began to “catch up” relative to the US, due to the stimulation of the market by new entrants Microcell and Clearnet. This stimulation, however, peaked in 2001 once Clearnet was acquired by Telus and Microcell began its restructuring process.

In other words, as the US industry became more competitive – increasing on average from three to five competitors per market – and Canada became less competitive – decreasing from five to three competitors, US penetration growth again “pulled away” from that of Canada.
2.4.2 Impact of events in Canada compared to the UK

A similar trend can be seen when comparing Canada to the UK, as illustrated below showing the timeline of events overlaid on the Canada-UK mobile penetration gap trend. UK penetration has continued to accelerate, and at an increasing pace since the auction of 2000, which increased the number of national competitors from four to five.

**Figure 10 – Canada-UK mobile penetration gap and timeline of events**

The major event in the UK was the 2000 auction of 3G licenses, wherein one national license was reserved for a new entrant. Incumbents were able to buy additional spectrum and at the same time a new entrant was created. This new entrant ultimately became “3 UK”, a subsidiary of Hutchison Telecom of Hong Kong.

Essentially since the completion of the auction in mid-2000, the UK market has been served by five national licensees (along with a number of non-facilities based providers and resellers) and penetration has continued to accelerate relative to Canada.
2.5  Impact of number of competitors on penetration

There is a clear linkage between the number of competitors in the market and subscriber penetration. As new operators have been licensed in the US and the UK, penetration has increased relative to that in Canada as the number of competitors in Canada has decreased.

This is illustrated in the chart below summarizing the penetration gap between Canada and the US and the UK for the years 1995 and 2005.

**Figure 11 – Penetration gap 1995 versus 2005**

Over the 10-year period, licensing activities in the US and the UK resulted in an increase to the number of operators per market; from three in the US and four in the UK to five in both countries. Over the same period, the number of operators in Canada increased to five then decreased to three per geographic market.
The result is that the penetration gap has widened from a year or less in 1995 to over two years relative to the US and over six years relative to the UK.

Other factors also impact the dynamism in the market and the subscriber take-up. The market can also be stimulated by the presence of resellers or “MVNO’s”.\(^{18}\)

There has been some MVNO activity in Canada, the most evident one being Virgin Mobile Canada. Virgin, a joint venture with Bell Canada, has 250,000 subscribers.\(^{19}\) A number of other entities had partnered with Microcell before its acquisition by Rogers… Call-Net (Sprint Canada) was reselling Microcell service, and Primus Canada operated under an MVNO arrangement. Recently, Telus signed an agreement with Amp’d Mobile, a US MVNO, to provide Amp’d branded services in Canada.\(^{20}\)

From a penetration perspective the subscribers to these MVNO and resale services are already included in the overall figures of the underlying carriers. However, their presence has an impact on market pricing and service availability.

Despite the growth in MVNO and resale customers, the Canadian consumer does not seem to be reaping any benefit in terms of the evolution of pricing, as discussed in the next section.

\(^{18}\) MVNO is a mobile virtual network operator. An MVNO may own part of its own network (e.g. switching, backhaul, operating and billing systems, etc.), that distinguishes it from a reseller.

\(^{19}\) Based on press reports, July 21, 2006

\(^{20}\) Telus Press release August 4, 2006
3. Evolution of service pricing and revenue per minute

Along with the slowing evolution of mobile penetration in Canada comes the question of the evolution of pricing and revenues. In particular:

- Canadian mobile industry revenues as a % of the total industry have kept pace with the US and UK despite lower penetration.

- Canadian prices have been increasing since 2004 when Microcell was acquired by Rogers.

- Canadian overall revenue per user (ARPU) has historically been lower than in the US and remains lower, however Canadians get less for their money.

- On the basis of average revenue per minute (APRM), Canadians pay about 20 cents per minute compared to the equivalent of 12 cents in the US.

Overall Canadians are not reaping the benefits of the global growth in mobile.

3.1 Mobile revenues as a % of total industry

The following table summarizes the evolution of mobile revenues as a % of industry revenues for Canada, the US and the UK. Mobile is increasing as a proportion of the industry since it is growing faster than the industry overall.

Mobile has been increasing, while conventional local and long distance services are flat or declining. High speed Internet access services are also increasing, but at a lower pace than mobile.
Canadian mobile revenues represent about 26% of the industry in total, similar to the UK also at 26% and the US a bit higher at 29%. Thus the Canadian mobile industry in revenue terms is tracking the industry in other countries. As discussed in the previous section, however, penetration is considerably lagging relative to other countries.

The following figure shows the evolution of mobile revenues as a % of industry revenues for Canada, the US and the UK overlaid on the mobile penetration for the same countries.

The industry in Canada is benefiting from the revenue growth in mobile, keeping pace with the US and the UK, despite the lower penetration of services.
While Canadian penetration is 30% lower than that of the US, Canadian revenues as a % of the industry are only 10% below the US. Similarly with respect to the UK, Canadian penetration is about half that of the UK, but revenues as a % of the industry are about the same.

Given the lower level of competitive rivalry Canadian carriers appear to be able to maintain, or increase, prices.

### 3.2 Evolution of average revenue per user (ARPU)

The question is somewhat more complex, however, since pricing in other countries was often much higher than Canadian pricing to start with. In fact Canadian “ARPU” (average revenue per user – the total monthly “spend” of mobile customers) is relatively low.

The evolution of Canadian ARPU since 1999 is shown below for the major carriers as well as the average figure reported by the CRTC. For 2005, Canadian ARPU was about $53 on average, up from $48 in 2001 and similar to $52 in 1999.

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
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<th>2001</th>
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</tbody>
</table>

Note: Microcell for 2004 is six month result to June 2004

The lowest point of Canadian ARPU occurred in 2001, shortly after Telus acquired Clearnet, but before Rogers acquired Microcell.
Microcell was clearly the price leader, consistently lower than the industry average. Microcell had the highest post-paid ARPU, but its average was lower due to the high proportion of lower-ARPU pre-pay customers. As Microcell’s customer mix evolved, its pricing was stabilising as can be seen for 2003 and 2004. Since Rogers acquired Microcell, Canadian ARPU has been increasing.

For comparison purposes, the ARPUs of major US carriers, as well as the average as reported by the CTIA (the mobile industry association), are shown below for the period 1999 to 2005 (in US $).

### Table 4 – Evolution of US ARPU 1999 to 2005

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verizon</td>
<td>$48</td>
<td>$48</td>
<td>$48</td>
<td>$48</td>
<td>$49</td>
<td>$50</td>
<td>$49</td>
</tr>
<tr>
<td>Cingular</td>
<td>$52</td>
<td>$52</td>
<td>$53</td>
<td>$52</td>
<td>$53</td>
<td>$50</td>
<td>$49</td>
</tr>
<tr>
<td>AT&amp;T Wireless</td>
<td>$66</td>
<td>$68</td>
<td>$63</td>
<td>$60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprint Nextel</td>
<td></td>
<td></td>
<td>$61</td>
<td>$62</td>
<td>$62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sprint</td>
<td>$58</td>
<td>$59</td>
<td>$61</td>
<td>$62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nextel</td>
<td>$73</td>
<td>$74</td>
<td>$71</td>
<td>$70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T Mobile</td>
<td>$55</td>
<td>$46</td>
<td>$50</td>
<td>$50</td>
<td>$53</td>
<td>$51</td>
<td>$49</td>
</tr>
<tr>
<td>ARPU per CTIA *</td>
<td>$41</td>
<td>$45</td>
<td>$47</td>
<td>$48</td>
<td>$50</td>
<td>$51</td>
<td>$50</td>
</tr>
</tbody>
</table>

US$: Note - Cingular is pro forma with AT&T Wireless from 2003 - merger took place in 2004. Sprint Nextel is pro forma from 2003 - merger took place in 2005

* CTIA reports "Average local monthly bill"

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On an absolute basis, Canadian ARPUs remain lower than US ARPUs when converted on the basis of “purchasing power parity” (PPP) exchange rates.21

Figure 14 – Canada vs. US ARPU comparison on PPP basis

While lower on an absolute basis compared to the US, two trends underlying the curve are important. The Canadian curve is increasing, reflecting the lower level of competition and penetration. Also, Canadians get less for their money as an analysis of pricing and service usage shows. Thus lower prices in Canada are not an indicator that Canadians are being well served.

3.3 Pricing trend including usage – Canada vs. US

Usage of mobile services is dramatically lower than that seen in other countries. The following table shows Bell Canada’s reported minutes of use (MOU) per user per month compared to the FCC reported average for the US. Bell’s MOU is less than half that of the US average.

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21 PPP exchange rates reflect the difference in purchasing rather than the currency exchange rate. The rates used herein are from the OECD which reported a PPP exchange rate of 1.25 for Canada (i.e. US$1 = Cdn$1.25) for 2004/2005.
Table 5 – Minutes of Use – Bell Canada compared to US average

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell Canada</td>
<td>162</td>
<td>156</td>
<td>180</td>
<td>204</td>
<td>228</td>
<td>248</td>
<td>255</td>
</tr>
<tr>
<td>Average MOU per FCC</td>
<td>185</td>
<td>255</td>
<td>380</td>
<td>427</td>
<td>507</td>
<td>584</td>
<td></td>
</tr>
</tbody>
</table>

Using the PPP-based ARPU and the trend in usage, both Canada and the US have seen declines in the average revenue per minute (ARPM) for mobile services.

**Figure 15 – Canada vs. US trend in average revenue per minute (ARPM)**

The US ARPM equates to 11 cents, or 45% below the Canadian average of 20 cents per minute. The US figure also appears to be continuing to decline, whereas the Canadian ARPM is been stabilizing.

These figures show that while Canadians may pay a lower total amount for service, this is because they get considerably less for their money. Since usage also drives investment – due to needs to add capex to support capacity increases – there is a consequent negative impact on the industry overall.

Lower competitive rivalry keeps demand lower. With less market stimulation there is less interest in the service and increasing pricing. With the consequent lower usage,
investment longer term will also likely suffer. The lack of market stimulation can also be seen by considering specific services targeted to particular market segments. One of the more neglected markets is small and medium business.

### 3.4 Comparison of business service pricing 2001 and 2006

Mobile carriers in Canada have not aggressively targeted the small and medium enterprise (SME) user. The large ILECs have tended to serve the large corporate accounts; Rogers/Microcell has historically been the leader in the consumer area.

SME’s typically take services that are the same as those offered to the consumer market. The lack of targeting of SME’s is evident in a number of ways. There is very little packaging of services that target SMEs (e.g. unified messaging, call transfer, etc.).

Number portability would also bring benefits particularly to the SME marketplace, but this will not be in place until March 2007 and possibly not fully until September 2007.

The evolution of pricing – i.e. that has stabilized or is increasing – can also be demonstrated considering historical comparisons of prices with current offerings.

Microcell’s pricing in 2001 is summarized in the following table alongside the current SME offers of Rogers and Bell. Since Rogers continues to market “FIDO” services, rates are shown for selected elements of FIDO as well as “Rogers” service offerings.

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22 In 1999 Microcell had introduced FidoPRO, which was a packaging of services targeted at the SME market. FidoPRO repackaged standard FIDO pricing but included some business features such as email delivery to the handset and detailed billing.

23 In 2001 FIDO pricing offered three price levels for 200, 400 and 1,000 minutes of use, the Rogers and Bell prices are shown for similar usage even though they each provide a number of other options. Rogers has retained the FIDO brand and offers $20 for 200 minute package although the pricing of services offered with the package is different.
For comparison purposes, the Microcell 2001 pricing and the Rogers/Bell 2006 pricing can be translated into the equivalent amount per minute. Three scenarios illustrate the evolution of this commercial offer – 1,000 total MOU including 400 that are long distance, 400 total MOU including 200 that are long distance and 100 total MOU all of which are long distance.24

**Figure 16 – Comparison of business price per minute 2001 and 2006**
The high usage 1,000 MOU customer pricing has gone up slightly. The mid range 400 MOU customer is paying close to 20% more per minute. The low end 100 MOU customer cost per minute is almost 50% more.

Table 7 – Business prices per minute – 2001 to 2006

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 minutes; 400 LD</td>
<td>$0.15</td>
<td>7%</td>
<td>$0.16</td>
<td>$0.16</td>
</tr>
<tr>
<td>400 minutes; 200 LD</td>
<td>$0.17</td>
<td>19%</td>
<td>$0.22</td>
<td>$0.19</td>
</tr>
<tr>
<td>100 minutes; 100 LD</td>
<td>$0.39</td>
<td>48%</td>
<td>$0.66</td>
<td>$0.50</td>
</tr>
</tbody>
</table>

One notable factor in the pricing is the cost of the long distance component. In 2001 the long distance component of the Microcell pricing was 10 cents per minute. In 2006 the long distance component of the Rogers and Bell pricing is in the 10 to 14 cent per minute range, depending on the level of usage – up to 40% higher than Microcell in 2001. And even though Rogers has kept the FIDO branding for low end customers – with its $20 for 200 minute package – the long distance component of has increased from 10 cents to 30 cents per minute.

Although not an exhaustive review of commercial offers, this comparison of Microcell’s 2001 pricing with Rogers and Bell offerings in 2006 confirms the overall ARPM trends – that prices are increasing and Canadians typically get less for their money than their US counterparts. The lack of specific targeting of the SME market – and increasing prices particularly to low end business users – is another indicator that the Canadian market lacks competitive rivalry. The more competitors there are the more markets get segmented and specific groups targeted.

24 Note – The cases chosen are arbitrary for illustration purposes. There are many other possibilities.
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