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May 25, 2007

Director General
Telecommunications Policy Branch
Industry Canada
300 Slater St. Suite 1612A
Ottawa ON K1A 0C8

Re: **Notice No. DGTP-002-07 – Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services**

Dear Sir;

The following comments are submitted on behalf of Toronto Hydro Telecom Inc. (THTI) in response to the above-encapsulated proceeding.

Regards,

Dave Dobbin
President
Toronto Hydro Telecom Inc.

Filed in electronic format to: aws@ic.gc.ca using Adobe Acrobat 6.0 on Microsoft Windows XP Professional.

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Consulation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services

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Comments of

1. Background

THTI is an emerging special-purpose telecommunications carrier operating in the Greater Toronto Area (GTA). THTI provides a wide range of telecommunications services to the enterprise and carrier markets. These services include Ethernet Metro LAN services, private line services, dark fibre leasing, disaster recovery support services, network security services and video transmission services. THTI has an extensive fibre optic network that serves to support these services.

THTI has successfully launched a WiFi network in Toronto's downtown core. This network provides high-speed wireless Internet access and is capable of supporting next-generation applications using unlicensed radio frequencies. WiFi technology is accessible from a variety of electronic devices including laptops, PDA's and portable entertainment units. This network is the largest WiFi zone in Canada. The architecture of the network permits up to six different carriers, in addition to THTI, to operate simultaneously distinct wireless Internet access offerings to the retail and enterprise markets.

THTI has an interest in the outcome of this consultation and wishes to use this opportunity to provide comment with respect to the current structure of the mobile wireless industry. We also wish to raise a concern with respect to the interoperability of mobile wireless networks and fixed wireless networks.

2. The Objectives of Our Document

Our document will first lay the groundwork by providing a structural description of the industry. THTI is of the view that industry structure serves to drive the intensity of competition in the market and to steer outcomes. Accordingly, to better understand the structure of the mobile wireless industry we will address the following key questions:

- Is there a threat of new entry into the mobile wireless market?

- What is the bargaining power of mobile wireless consumers?
- Is there a serious threat of substitute services to currently available mobile wireless services?
- What is the degree of rivalry amongst existing mobile wireless firms?

3. The Mobile Wireless Industry

The mobile wireless industry, for the purposes of this analysis, consists of all firms that provide mobile wireless services and more particularly those that provide personal communications services (PCS). Loosely defined, PCS in Canada uses radio frequencies in the 1900-MHz frequency band to provide mobile wireless telecommunications services, including interoperability with the wireline public switched telephone network. In other jurisdictions PCS may use the 1800-MHz frequency band. PCS provides, by means of portable electronic devices, mobile wireless voice, data, and video communication services. It can also support additional services such as text messaging, email, packet switching for Internet access, and multimedia messaging service for sending and receiving photos and video. Firms in the PCS industry provide services that are a close substitute to each other.

The principal firms in this market (facilities based providers) include Bell Mobility Inc., Rogers Wireless, and TELUS Mobility. Other firms include MTS Mobility and SaskTel Mobility. There are also a number of smaller firms that operate regional or municipal systems such as TBayTel Mobility (Thunder Bay), Kenora Municipal Telephone System, Dryden Municipal Telephone System, and CityWest Mobility (Prince Rupert). Save for Rogers Wireless all of these firms are affiliates of or subsidiaries of a telephone company. For the purpose of this document we will focus largely on the three national providers: Bell Mobility, Rogers Wireless, and TELUS Mobility.

4. Is there a threat of new entry into the PCS market?

New entrants to the PCS industry would undoubtedly bring new capacity and sufficient

resources to exercise their business plan. They would also bring a desire to gain market share. This desire could be expressed by way of innovation, a differing value proposition and an intense focus on the customer.

The threat of entry into the PCS industry is dependent upon the height of and the number of barriers to entry that are present within the industry. Equally important is perceived reaction that a new entrant might expect from incumbents. The incumbent's expectation as to the possibility of new entry or actual new entry will generally result in placing downward pressure on prices and upward pressure on service.

4.1 Government of Canada Spectrum Licensing History

In 1985 Rogers Cantel Inc. and Mobility Canada, an alliance of incumbent monopoly telephone companies, were each granted by the Department of Communications a mobile wireless license to operate in the 800 MHz spectrum band. The service was introduced as an analog service. These licenses were awarded without an auction process and were subject to "low cost based fees".

In December of 1995 Industry Canada (The Department) granted Mobility Personacom Canada Ltd, Rogers Cantel Mobile Inc. (Cantel), Clearnet PCS Inc. (Clearnet), and Microcell Networks Inc. (Microcell) licenses to operate in the PCS 2.0 GHz frequency range. Two new entrants, Clearnet and Microcell each received 30 MHz of spectrum while Mobility Canada and Cantel each received 10 MHz of spectrum. Certain conditions with respect to resale and roaming were attached to the licenses. PCS service was launched in 1997.

In 2000 TELUS acquired both Clearnet and QuebecTel Mobilite transforming TELUS Mobility into a national service provider. In 2004 Rogers wireless acquired Microcell. Bell Mobility has acquired the cellular operations of Bell Aliant. Bell Aliant acquired the cellular operations of BellNordiq. TBay Tel acquired Superior Wireless Inc.

The licenses that were granted in 1985 and in 1995 were subject to annual licensing

fees rather than having to pay upfront auction bid payments. Licensing fees are paid annually and tend to parallel growth in revenue. By contrast bid auction payments are paid long before the operator has any revenue. Hence auctions tend to result in a requirement for significant capital up front. In today's risk adverse Canadian investment environment auctions tends to disadvantage a new entrant. The uncertainty of the outcome of auctions by contrast to other approaches tends to add risk as well as complexity. They also tend to reduce the pool of potential service providers.

Since 1995, a period of almost 12 years, no new national or province-wide facilities based carrier has entered the PCS market. What we have witnessed, however, during the period is significant consolidation. Where in 1997 there were four National carriers there are currently only three. During the period there has been a lessening of the number of competitors in the market. The lack of new entry and the mergers and acquisition of cellular operators over the past 12 years has created a safe harbour for incumbents.

4.2 The Speed of the Deployment of New Technology

The speed of the deployment of new mobile wireless technology and the opportunity for new entry is highly dependent upon the licensing authority and the willingness of incumbent and new entrant operators to invest in new technology.

Japan's NTT DoCoMo launched in October 2001 the world's first commercial 3G service. As of March 2006 NTT had 23.4 million 3G subscribers. The European Commission targeted the beginning of 2002 for the coordinated introduction of 3G services. However, most European carriers delayed the launch until 2004. By September of 2005 operators had commercially launched WCDMA in 16 Western European markets. By Q1 2006 they were serving 32 million subscribers. In September 2006 the USA Federal Communications Commission completed the auction of its Advanced Wireless Service (AWS) or 3G spectrum. In early 2007, Vodacom Tanzania switched on its 3G network. In March 2007, Nigeria awarded

3G telecommunication licenses to the nation's three major GSM companies and to a new operator, Alheri Engineering Co. Ltd.

Canadian PCS operators have deployed technology that provides increasingly faster data transfer rates, however, there has not been as yet a true implementation of 3G standards. Regretfully Canada has not auctioned AWS spectrum. Canadian commercial deployment of AWS networks is not expected until early 2009. By contrast to our trading partners as well as some Third World countries, Canada is the world's tail-ender in the deployment of 3G.

Canada's implementation of the AWS has placed Canada five or more years behind our leading industrial competitors. This places Canada on par with Tanzania and Nigeria, placing Canadians at a clear disadvantage. It has denied them the 3G service opportunities now prevalent in leading countries. Moreover, it has reduced the sense of urgency to keep Canada technologically abreast of the rest of the world. It has also significantly retarded the opportunity for entry thereby removing tension within the industry and reducing the downward pressure on PCS rates and the upward pressure on service.

4.3 Wireless Mobile Resale

In the early decade of long distance competition resale served as an effective tool to place downward pressure on rates and upward pressure on service. Legacy carriers responded to these new entrants by lowering prices and increasing their levels of service. In the case of the long distance sector the CRTC regulated the resale rates as well as the terms of service. For a range of reasons that are outlined in CRTC 97-1797, including the expectation of additional facilities based entry (entry that never occurred) the Commission did not mandate resale of mobile wireless services. Nor did it deny wireless carriers the opportunity to wholesale their services for the purposes of resale. Effectively it placed the onus of offering wireless mobile resale services upon the cellular facilities based carriers. Thus, the facilities based carriers were given control over and the ability to negate the threat of entry via resale.

Some carriers in recent years have entered into complementary agreements to permit the resale of their services. TELUS and Bell Mobility for example have such an agreement. This arrangement has permitted each of these companies to operate in each other's "territories" thereby reducing the need for capital to build national networks.

TELUS and Amp'd Mobile, Inc. ("Amp'd Mobile") in 2006 announced an exclusive relationship for the sale and distribution of Amp'd branded services in Canada. Amp'd Mobile, operating on TELUS' Wireless High Speed network, provides interactive and customized mobile entertainment, information and messaging services. This agreement does not involve resale. Simply put Amp'd provides content that in the view of TELUS will help it differentiate its service and increase revenue.

Virgin Mobile and Bell Mobility entered into a joint-venture arrangement to distribute under the Virgin brand Bell's underlying mobile services. Virgin Mobile Canada addresses the need of the youth market for pre-paid services. The commercial arrangement between Bell and Virgin is that of a joint venture and not a wholesale agreement where the reseller would reformat the carrier's services for the purposes of resale. The behaviour of Virgin and Bell does not suggest a resale arrangement.

The mobile wireless carriers have entered into arrangements with organizations that have distribution capability. Generally, these are retailers with mass-market capabilities. In such instances these arrangements are agency agreements. They do not involve resale. These commercial arrangements do not provide effective competition but rather are purely a means of distribution of the PCS carrier's services under a different brand.

There is no evidence that would suggest that the above commercial relationships; joint ventures or agency agreements are effective in placing downward pressure on

rates or upward pressure on service. None of the above arrangements placed by the facilities based carriers is an external threat of new entry.

4.4 Entrant Commercial Considerations

The threat of entry into the Canadian PCS market is also diminished by general commercial considerations. The primary commercial considerations are:

1. Incumbents have *established economies of scale. N*ew entrants cost to achieve similar economies of scale, will at least initially; place them at a cost disadvantage.

2. New entrants will be required to expend significant capital to overcome the *brand identification and customer loyalties* of the established firms. The incumbents have had well over 20 years to develop brand and customer loyalties. New entrants to achieve the same level of brand awareness will have to invest significantly in order to compete.

3. The *cost of switching*; that is the one-time cost faced by a user to switch from one supplier to another presents a significant barrier to entry. This cost would include the cost of purchasing a new cellular instrument. Even in today's environment a subscriber who switches from Fido to Rogers Wireless is required to acquire a new GSM instrument. Rogers, as a matter of policy, will not "unlock" a Fido instrument so that it can be redeployed for use on the Rogers network. Mobile wireless post-paid customers generally are required to sign long-term service contracts. These long-term contracts, the cost associated with early contract termination, as well as the cost of acquiring a new instrument are a significant deterrent to new entrants and present an additional barrier to entry.

4. Incumbents have *established distribution channels.* A number of the national retailers distribute the services of the incumbents. A new entrant, in order to obtain "shelf-space" from the incumbents existing channels, will have to provide greater sales

commissions, price breaks and cooperative advertising allowances. All of which will serve to impact negatively on the entrant's financial results.

5. The *availability of Canadian risk capital* also presents a very significant barrier to entry. The Canadian capital markets tend to be risk adverse. Moreover, the Government of Canada's telecommunications Foreign Investment rules reduce the available pool of risk capital. The Government of Canada's policies and the weak Canadian market for risk capital have served to erect barriers to entry. This has significantly shrunk the pool of new entry applicants to only a few candidates.

6. Finally, new entrants face a number of factors that places them at a cost disadvantage as they enter the market. These include:

    - a steep learning curve;
    - incumbents spectrum that was allocated in the 1984 and 1995 was granted "gratis" whereas new entrants will have to expend significant capital to acquire similar spectrum – in effect the incumbents were given a considerable head start;
    - incumbents have supply contracts with manufacturers and other suppliers that may preclude them from supply to the new entrants; and
    - incumbents have retained the most favourable locations for everything from tower locations to store fronts.

The commercial considerations of a new entrant are very significant. They include: the incumbents established economies of scale, incumbent brand identification and customer loyalties that have been built over a 20 year period, the cost of customer switching, the difficulty of establishing distribution channels, the lack of availability of Canadian risk capital, the long learning curve faced by new entrants, the cost of spectrum at auction versus the head start that was accorded incumbents, established supply contracts with telecom equipment manufacturers and established preferential location for towers to store fronts all of which are considerable commercial hurdles. These commercial considerations, many of which are not found in markets where

there is open entry, limits the pool of available entrants to the mobile wireless market thereby reducing the intensity on the PCS incumbents.

4.5 Government of Canada

The Government of Canada allocates and regulates the PCS industry. It allocates spectrum and sets the terms and conditions of such allocations. The Canadian Radio Television and Telecommunications Commission (CRTC) have regulatory authority over the PCS industry.

1. The Government of Canada's regulatory policies, particularly with respect to spectrum allocation by means of auctions, are a significant barrier to entry. The incumbents at auction have the opportunity of bidding-up the price of spectrum as a means of financially hobbling new entrants and denying them entry. For example, assuming a new entrant was desirous of obtaining 20 MHz of spectrum on a national basis we estimate the cost of spectrum at auction may be in the order of $750 million.

2. The public process by which the Government of Canada establishes policy in the sector, in particular the allocation of spectrum, serves to lengthen the period between opportunities for market entry to years if not decades. Moreover, the public process provides the incumbents with an overwhelming opportunity to game the system to their advantage.

   Thus, the cost of acquiring spectrum at auction and the process of spectrum consultation serves to limit opportunity for entry to once per decade. The process also tends to favour incumbents.

4.6 Summary

In response to our question "Is there a threat of new entry into the PCS market?" we responded by identifying that for at least the past 12 years and 10 years prior to that there has been little threat on the incumbents from possible entry. Also, the Canadian Government's extended decision process to implement 3G at a much slower pace than our trading partners, in fact slower that some Third World Countries such as Tanzania, has sent a strong signal to incumbents that they have little to fear from new entry. This leisurely like approach has reduced the sense of urgency to keep Canada technologically abreast of the rest of the world. It has significantly retarded the opportunity for entry thereby removing tension within the industry and reducing the downward pressure on PCS rates and the upward pressure on service. The CRTC's 1997 Decision to not require mandated resale removed another possibility of an external threat of entry into the PCS market. It also removed one more force for a vibrant market. The new entrant's commercial considerations serve to limit the pool of available entrants to the mobile wireless market thereby reducing the intensity on the PCS incumbents. Furthermore, the cost of acquiring spectrum at auction and the process of spectrum consultation serves to limit the opportunity for entry to once per decade. Added to which is a cumbersome process that tends to favour incumbents. We are inclined to conclude that the threat that is created by entry has placed marginal, if any pressure on the incumbent PCS service providers.

5. What is the bargaining power of PCS consumers?

The power of commercial and retail customers is measured by their ability to: force down prices, bargain for higher quality of service, and create rivalry between competitors for their business.

It is only in the last few years that commercial accounts (those who centrally purchase large

volumes of PCS services) have been able to place downward pressure on PCS prices and upward pressure on service. It is estimated that no more than 200 Canadian corporations including government would be able to exercise bargaining power over PCS service providers. However, even these organizations report that the PCS discounts they receive are parsimonious by contrast to discounts they receive for other goods and services they purchase. By and large the bulk of businesses and particularly small and medium sized organizations, exercise very limited if any bargaining power over PCS service providers.

It is important to note that, Phil Cusick, a financial analyst at Bear Stearns, in a recent Rogers Communications Inc. report, wrote that Rogers Wireless has pricing power in the Canadian PCS market because it faces fewer competitors by contrast to major US carriers. This, he maintains, has driven strong increases in revenue.

A March 2007 study conducted by the Seaboard Group "Lament for a Wireless Nation - A Cross-National Survey of Wireless Service Prices: Canada, the United States and Europe" concludes that:

- For the heavy mobile phone user, the penalty for being Canadian is a cell phone bill that is 1.5x higher than a comparable US bill.
- The average Canadian cell phone user's bill is 33% higher than in the US.
- If you are only a light user of cell phone service you pay 27% less per month than the average American user.

The USA Federal Communications Commission (FCC) in its *"Eleventh Annual Report to Congress on the State of Competition in the Commercial Mobile Radio Services (CMRS) Industry"* stated similar results as that found in the Seaboard Group report. In PCS markets where mobile party pays the FCC found, based on data for Q4 2005, that the average PCS revenue per minute, expressed in US dollars, was: for Hong Kong carriers $0.04, Singapore $0.08, for USA carriers $0.07 and $0.11 for Canadian carriers. Here, as in the Seaboard study, we find that Canadians are paying substantially more for cellular service than do users in other countries and in particular more than USA cellular users. In fact, Canadians pay not just a bit more, but 57% more. The data can be found at p.107 Table 12 of the FCC's Report. The

FCC also reported that Canadian minutes of use (MOU) were almost half that of USA users. Canada's MOU in Q4 2005 was 403 whereas the USA was 798. The conclusions are inescapable. Canadians pay significantly more for cellular service than do users in the USA. High prices also cause Canadians to be lower users of cellular service. The Telecommunications Policy Review (TPR) Panel in their Final Report 2006 came to very much the same conclusions.

The terms of service for Canadian post-paid PCS service generally require that the consumer of the service enter into a long-term service contract with the PCS service provider. These contracts prevent the consumer from switching to another carrier or in the event that the consumer does switch prior to the end of the term of the contract that he/she pays a cancellation fee, normally in the hundreds of dollars. In addition, until recently March of 2007 a consumer wishing to switch suppliers had to obtain a new PCS telephone number. For many, such as small businesses, these were significant constraints that severely limited their bargaining power.

The International Telecommunications Union (ITU) yearly publishes statistics with respect to mobile cellular penetration. The 2005 report identifies that Canada at December 2005 had a penetration of 52.5 mobile subscribers per 100 inhabitants; the USA had 71.5, Italy 124.3, Ireland 102.9, Germany 95.8, and Australia 91.4. These statistics (see Table 1 below) leave little doubt that Canadian cellular penetration has, by contrast to most developed countries, been extremely weak. In their 2005 study, the Seaboard Group concluded that: "the reason Canada was poorly placed in wireless services adoption was due to high prices. The cost to use a wireless phone in Canada was significantly higher than in other parts of the world." The TPR Panel also in a separate analysis came to very much the same conclusions.

Table 1: Cellular Mobile Subscribers Per100 Inhabitants for Selected Countries 2005 and Compound Annual Growth Rates 2000 to 2005

Country	Cellular Subs/100 Inhabitants*	% Cellular Average Growth Rate 2000-2005
Italy	124.3	11.3
UK	109.8	8.6
Ireland	102.9	11.7
Norway	102.9	8.1
Sweden	100.5	7.4
Germany	95.8	10.4
Australia	91.4	16.6
France	79.5	10.6
Japan	75.3	7.6
United States	71.5	14.3
Canada	**52.5**	**14.3**

Source: ITU Mobile Cellular Subscribers
http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/CellularSubscribersPublic&RP_intYear=2005&RP_intLanguageID=1
* Rounded Upwards

As can be seen from Table 1 above, there remains in most countries healthy opportunities for growth in the cellular market. Even for countries having achieved significant penetration, such as Italy and Ireland, growth opportunities remain. We note that Canada, with relatively more growth opportunities than the USA or Australia, just barely manages to grow at rates equal to the USA and less than Australia. Given the relative Canadian opportunity for PCS growth should we not expect Canada's PCS average annual growth rates to exceed that of the USA and Australia?

In summary, prices, terms of service and penetration rates can serve as key indicators of the consumer's bargaining power. The above data indicates that Canada is a significant "tail-ender" in terms of cellular penetration. Canadians, relative to consumers in other countries particularly the USA, also pay substantially more for cellular service. They thus tend to limit their usage. The terms of service also tend to significantly reduce PCS consumers bargaining power. Given the above data we are persuaded that commercial and retail accounts possess little by way of power to force down prices and bargain for increased service. They have little power to create rivalry for their business. PCS consumers lack bargaining power.

6. Is there a serious threat of substitute services to PCS?

The PCS industry competes with others that provide substitute services. Substitutes provide a trade-off with the PCS service. They may also limit the potential returns to the PCS industry by placing a ceiling on the prices PCS firms can profitably charge. The more attractive the price performance of the substitute the firmer will be the ceiling on industry profits. The possible substitute services are primarily other non-PCS mobile wireless services, fixed wireline service and Internet based services.

Substitute services include those that provide mobility including push-to-talk services such as iDen; private mobile services, dispatch wireless services and wireless locate service (paging). These services are without doubt popular in certain market sectors. They provide a unique service for a unique market. However, in terms of revenue these markets are small by contrast to the PCS revenues. They also are not a direct substitute. In most instances PCS would have difficulty serving the unique needs of these markets.

Services that provide mobility, even limited mobility, such as wide area WiFi services may be preferred over PCS and may provide a less expensive form of communications than PCS. They may also be perceived as providing a more convenient and in some instances a more secure mode of communications. For example, some professionals prefer to use of a "secure" wireline service over PCS. Similarly, some businesses that require written transactions may be hesitant to use PCS over other modes of communications. Thus wireline and wireless data services such as wide area WiFi may for a very limited market provide a PCS substitute.

The relatively poor Canadian PCS penetration rates may indicate that consumers view fixed wireline service as a PCS substitute. They may also believe that the combination of fixed wireline service and Internet access, particularly high-speed Internet, is sufficient to meet their basic communications needs. In the view of some consumers, Canada's fixed wireline service provides a more reliable and affordable service. For some consumers who have little mobile requirement wireline may be the preferred service over PCS.

Canadians have been leading the world in the adoption of high-speed Internet access. While we found no data to support a definitive conclusion, we are of the persuasion that a small percentage of consumers, particularly families of modest budgets and those on fixed incomes, may in order of preference choose wireline over PCS or a combination of wireline and high-speed over PCS. There is a lack of strong evidence to suggest that consumers are making trade-offs between PCS and the wireline high-speed combination when making purchasing decisions. By contrast, there are an increasing number of reports that suggest that young adults are opting for PCS over wireline. For this portion of the market PCS may be a substitute for wireline.

Poor Canadian PCS penetration rates cannot be solely explained by the presence of substitutes. Relative high prices for Canadian PCS service may be a better explanation. Canadian consumers may merely have concluded that the value proposition offered by Canadian PCS providers is, for many, not justifiable. In other words a significant proportion of consumers may be ranking PCS as a poor substitute for their current fixed wireline service or wireline plus high-speed.

In conclusion, some mobile services such as iDen because of the unique markets they serve are not strong PCS substitute. Wireline service or a combination of wireline and high-speed Internet may, for the budget conscious person, provide a reasonable trade-off over PCS. However, we doubt that wireline and Internet substitutes are a significant threat to PCS service providers; a threat that would cause them to lower their prices and offer improved service.

7. What is the degree of rivalry amongst existing PCS firms?

Tactics like price competition, new product introduction, increased customer service, and advertising wars may be taken as indicators of rivalry amongst existing PCS competitors. Rivalry also involves moves and countermoves by industry participants. Rivalry is about improving one's position in the market. It is about moving ahead of the pack.

Generally, most industries avoid fierce price competition. Rivals can quickly and easily match Price cuts. Moreover, in a growth industry such as cellular, there is a lack of incentives for price competition, since there is significant opportunity for all to grow. Growth, as we have experienced it in the Canadian PCS market, ensures that prudent firms can improve their results by just keeping up with the industry. That is, so long as there is not a reckless "maverick" service provider who decides to offer a much improved value proposition over that of his rivals. A customer value proposition is defined as a unique combination of price and service and that is supported internally by the firm's operations.

The Canadian PCS industry can be characterized as having three national competitors who are relatively well balanced in terms of their size, resources, and overall market share. The industry has experienced continuous significant growth since 1997. PCS providers have high fixed costs. They also have a continuous need to reinvest in their business. The annual CAPEX of PCS players is in the order of 16% of annual revenues. This creates significant pressure for all firms to fill capacity. Hence the assessment of an investment, such as a communications tower is calculated based on the expected revenue opportunity that a particular cell site will generate and the time needed to fill the new facility to capacity.

Excess capacity tends to generate price-cutting, as do industry mavericks. Microcell, if we apply the Competition Bureau's *Merger Enforcement Guidelines*, was a "maverick" in the PCS market. A maverick, as defined, is a firm with a strong incentive to deviate from coordinated behaviour and to thereby provide a strong stimulus to competition in the market. Microcell, right from its inception, deviated from its rivals in terms of its pricing, service offerings and its choice of technology. Microcell's business failure, which is the general outcome of most "mavericks", had the net effect of removing capacity thereby creating an opportunity for a more stable pricing environment accompanied by price increases, coordinated behaviour and reduced rivalry.

The ingredients to differentiation in the PCS market are:

- buckets of minutes,
- monthly recurring charges (including charges for phantom services such as the

network access fee),

- free or not free phones,
- contracts or no contracts and terms of service, and
- bundling with adjacent services.

From these five ingredients, as well as brand and in some instances technology advances, PCS providers have developed a matrix of service packages. From the consumer's perspective the PCS industry has not created significant service differentiation. The industries marketers have simply created a confusing array of packages that are not easily comparable. We understand that one service provider has over 1,800 different service packages resident on its billing platform. Little wonder the consumer is confused. Given the complexity of the offerings and the difficulty in comparing offerings the real competitive factor has been the availability of advertising dollars. The PCS industry, contrary to its claim of fierce competition, competes with advertising dollars. Like oligopolies the world over, they avoid competing on value. They maintain price levels that could not be supported in a more competitive market. Not surprisingly the leadership of PCS companies praise the current oligopoly market structure and the industries return to "rational pricing".

From a practical purpose we have defined the Canadian PCS industry as consisting of three national providers. Market share can be taken as one measure of the degree of rivalry amongst existing PCS firms. The CRTC in its July 2006 *"Telecommunications Monitoring Report"* at Table 4.6.3 provides wireless subscriber market share data by province. SaskTel has almost 80% of the Saskatchewan market while Rogers has 17%. In Manitoba MTS holds 60% of the market and Rogers has 28%. Similarly, in Alberta TELUS holds 61% of the market and Rogers holds 26%. Bell Mobility in New Brunswick holds 73% of the market, Nova Scotia 63%, PEI 81% and Newfoundland 86%. In Quebec Bell Mobility has 48% of the market, Rogers Wireless 33% and TELUS 20%. In Ontario Rogers Wireless has 44% market share; Bell Mobility has 38% and TELUS 18%.

Competition authorities in Canada and Europe have well developed definitions of market power. In Canada, for example the Competition Bureau's *Merger Enforcement Guidelines* use a 35% market share to identify mergers that are unlikely to have anti-competitive

consequences. The Competition Tribunal has gone further and stated that an 80% market share gives rise to a presumption of dominance that can only be rebutted by showing an absence of barriers to entry. The European Community similarly uses 40% market share as indicating a need to raise a red flag for possible dominance.

Applying these guidelines to the data previously presented does not require a major leap of faith to conclude that SaskTel in Saskatchewan, MTS in Manitoba, TELUS in Alberta and Bell Mobility in New Brunswick, Nova Scotia, PEI and Newfoundland have pricing power. It would be difficult to suggest that these markets have an abundance of rivalry. Lacking rivalry, prices will tend to be higher and service will be less encumbered by competitive pressures. The market share data indicates that it is only in BC, Ontario and Quebec that we see rivalry. Generally, in these province two rivals will each hold approximately 40% of the market and the third 20% or less. It is only in these markets that we will see a tendency for service providers to be price and service sensitive and exhibit rivalry.

The CRTC in its July 2006 Monitoring Report (p. 86) provide a coloured map indicating where PCS providers have network facilities. The map indicates where there is 1, 2 and 3 or more service providers. Noticeably the Quebec City to Windsor corridor has three facilities based service providers. Except for a few large cities such as Winnipeg, Edmonton, Calgary, Vancouver and Victoria most of the balance of the country has only two competitive networks. Much of the country has only one competitive network. There is no facilities based rivalry in these parts of the country. What is striking is that outside of the Quebec-Windsor corridor and a few main cities in Western Canada there is little appearance of facilities based rivalry. We note that the CRTC in its Decision CRTC 97-1797 expressed the view that effective competition is best delivered by facilities based carriers. It should also be noted that since the Commission issued its Report, Fido's network has been acquired and merged into that of Rogers Wireless. Accordingly, the Report if written today would reduce the country to largely two facilities based networks and in many environments to one.

In summary, we have characterized the PCS industry as competing largely on the basis of advertising. Rivalry is not riveted around price rather it is around advertising budgets. There is no longer a maverick in the industry. Rivals are able to act prudently under the umbrella

of an oligopoly structure consisting of rational pricing and little service differentiation. The Canadian PCS industry does not demonstrate any significant degree of effective competition. In the majority of Provinces there is a dominant service provider that has 60% or more of the market share. In each of these instances it would be difficult to dispute that the dominant service provider does not possess market power. Moreover, much of Canada outside of the Windsor-Quebec corridor has only one or at best two competing facilities based networks. Accordingly, we conclude that in general there is a lack of rivalry in the PCS industry.

8. Summary

At the outset of our submission we asked four questions:

- Is there a threat of new entry into the mobile wireless market?
- What is the bargaining power of consumers of mobile wireless services?
- Is there a serious threat of substitute services to mobile wireless services?
- What is the degree of rivalry amongst existing mobile wireless firms?

In response to our first question we concluded that over the past 12 years and the prior 10 years incumbents were almost entirely free of the prospects of new entry into the PCS and earlier in the analog cellular market. The tension that is created by the possibility of new entry has been absent from the market. Also the lack of urgency with respect to the implementation of 3G has sent a strong signal to PCS incumbents that they need not fear new entry. The message was clear. The Canadian Government was quite content to be an international mobile wireless tail-ender. All of which has served to remove tension within the industry and reduce the downward pressure on rates and the upward pressure on service. This decision was supplemented by the CRTC when it failed to mandate cellular resale. From the new entrant's perspective the long wait between entry opportunities, commercial considerations, the cost of acquiring spectrum at auction, the lack of Canadian risk capital compounded by foreign investment rules and a cumbersome policy development process have served to shrink the poll of applicants and remove the threat of entry.

Our second question dealt with the bargaining power of consumers. We identified that the industry by contrast to that of the USA was best described as one of high prices, restrictive terms of service, lack of number portability, exceedingly low penetration rates, and consumer behaviour that is motivated by exceedingly high prices to limit usage.

The lack of number portability, the ability of providers to impose contracts terms on consumers, maintain high switching cost and their ability to maintain price discipline over rivals has removed from consumers the possibility of having bargaining power. Thus, consumers have little power to place downward pressure on pricing and upward pressure on service. In summary, we demonstrated that the bargaining power of consumers has been nearly absent in the PCS market.

In response to our third question, we presented evidence that suggested that the only possible substitute to PCS was fixed wireline service. In some instances, consumers may be opting for the combination of wireline and high speed in lieu of PCS. These consumers perceive this combination to provide better value than PCS. We concluded that there is only a minor threat of substitutes.

Finally, we discussed the question of rivalry in the PCS industry. We concluded that in 6 out of 10 Provinces there is a dominant service provider who has substantial market power. Outside of the Quebec City-Windsor corridor and some major Western Canadian cities there are only two competing facilities based networks and in many instances only one network. We categorized the industry as a self-described oligopoly that promotes "rational pricing" and whose members exhibit little by way of service differentiation. Competition amongst the rivals is based on competition for advertising dollars not on a value proposition that satisfies the customer. We thus concluded that the industry lacked rivalry.

In summary, there has been little threat of entry, PCS consumers lack bargaining power, there are few effective substitutes to PCS and there is a lack of PCS rivalry in most of the regions of Canada.

9. Recommendations

In DGTP-002-07 the Department has sought consultation with respect to a number of technical, operational and licensing issues in the 2 GHz range including AWS and the band 1670-1675 MHz.

Above we have described the essence of the competitive structure of the PCS industry. Based on this analysis we have concluded that if it is to meet the telecommunications objectives of the Government of Canada the Department needs to significantly revitalize the industry. The Department in the upcoming AWS auction has an opportunity to restructure the industry.

9.1 New Entrants/Set Asides

Given an oligopoly industry structure consisting of high prices and poor service we are persuaded that an injection of effective competition will, over the long term, serve to discipline the industry to more fully meet the needs of Canada and its regions to the benefit of Canadians. We are not persuaded that the licensing of only one new competitor will serve the needs of Canadians. A simple replacement of Microcell is insufficient to correct the behaviour of an industry that has abused its position. The Department may also wish to recognize that the incumbents have been given a significant "head-start". All of which has been fully described in this document. We are of the persuasion that preferably at least two if not three new national competitors should be licensed, as well as a series of new regional competitors.

We are of the view that the Department needs to ensure that it sets the appropriate conditions for success. The Department must recognize the significant challenge that each of the new entrants will face. Our submission has highlighted several of these challenges. We believe that only failure would ensue unless the conditions for entry provide an environment for success. We are persuaded that the Department

needs to set aside for new entrants two national license opportunities for the exclusive auction of new entrants. We believe that 50 MHz of spectrum set aside in the AWS bands would be sufficient for these purposes.

Possibly one additional license could be found in the 1755-1785MHz and the 1805-1880MHz range. We note that this bandwidth would be left fallow after the AWS auctions. Perhaps it could be utilized to accommodate new regional providers in the Tier 2 licensing areas. We understand that this spectrum is in the European band.

Incumbents with existing licenses should not be allowed to participate in the auction for new entrant AWS blocks or to hold the additional license in the 1755-1785MHz and 1805-1880MHz range. In addition, affiliates, joint ventures, consortiums or firms that incumbents directly or indirectly control should not be permitted to participate.

Similarly, new entrants must demonstrate the intention and ability to actually build a network. This would avoid "spectrum-speculation", or the hoarding of spectrum, purely for financial gain. The Department should, within its pre-auction processes, include a process that would require applicants to demonstrate their concrete intentions to build.

This approach will redress the imbalance that incumbents have over new entrants.

We would also encourage the Department to restrict transferability of all new and existing licenses. This would ensure that "commerce in spectrum" does not take place.

9.2 Auction Payments

In an effort to ease the capital requirements placed upon the new entrant we are also recommending that the Department permit new entrants to amortize their auction payments over a period four or more years. The Department may wish to consider

implementing a balloon payment to be paid once the auction is completed. This would be followed by quarterly payments for four or more years. This would reduce the requirement for raising substantive risk capital prior to be beginning of operations.

9.3 Use It or Lose It Provisions

In order to prevent the practice of spectrum hoarding, we would suggest that the Department implement a "use it or lose it" policy that would force license holders to commence deploying networks within one year of auction closing, and have those network substantially complete within five years. By substantially complete, we mean that the network is 80% deployed to the geographic territory covered by the license.

9.3 Mandated Roaming

The terms and conditions of the licensing for both incumbents and new entrants should require mandated roaming. As we have discussed above Canada lacks mobile wireless infrastructure. Mandated roaming would encourage the build-out of new networks. It would also provide support for the new entrants.

Mandated roaming should apply to the current and future PCS frequencies as well as the AWS frequencies. Roaming should apply to all categories of services, and should be part of the conditions of licenses.

9.4 Mandated Resale

As we have discussed above we are of the view that the CRTC erred in its resale decision. Accordingly, we support mandated resale. We would not want to burden the regulatory apparatus with having to determine the rates for resale services. Accordingly, we suggest that there is a convenient proxy that could be used to

determine these rates. The rates that are currently in effect between Bell Canada and TELUS Mobility under their existing agreement could serve as an excellent benchmark to establish fair and equitable rates.

9.5 Mandated Tower Sharing

In order to avoid the proliferation of communications towers the Department may wish to mandate tower sharing. In order to ensure an orderly and quick response to disputes the Department could task the CRTC with the responsibility of establishing an inquiry Officer to resolve all disputes with respect to towers within 90 days of the dispute having been filed with the Inquiry Officer.

9.6 Spectrum Aggregation Limits

THTI also favours a return to spectrum caps. The current lack of caps only serves to encourage hoarding of spectrum particularly for the purposes of frustrating competition. The lack of spectrum caps encourages the inefficient use of spectrum and serves to encourage anti-competitive behaviour. Accordingly, THTI favours the return to a mobile spectrum cap policy similar to the one that was recently rescinded in Canada Gazette Notice DGTP-010-04.

9.7 License Terms and Conditions

In regards to license terms, while we understand the Departments 10-year license proposal, we would encourage the adoption of a 15-year license period. This would de-risk the investment required for both license payments and capital expenditures required to build out. It would also help to ensure, because the operator's investment horizon is longer, that networks will be built deeper into the rural regions of Canada. The "use it or lose it" provision outlined above would ensure compliance.

9.8 Interoperability

Finally, we wish to address the issue of interoperability of networks. As the Department is aware currently there is interoperability between the wireline and the mobile wireless networks. The advent of new wireless technology such as WiFi and WiMax has provided consumers with significant new voice, data and video service opportunities. The integration of wireless broadband technologies and services with existing mobile wireless networks would enhance the ability to deliver new, innovative services to the marketplace. In order to maximize the benefits of these new evolving networks and services and to ensure efficient spectrum utilization, interoperability with mobile wireless networks is paramount. In order to ensure the orderly development of these networks we request that the Department mandate interoperability of these networks with those of mobile wireless (PCS and AWS) providers. In addition, THTI seeks that under the Department's aegis that the CRTC be tasked with the responsibility of establishing an Industry Steering Committee for the purpose of establishing the technical terms for interoperability.