

Industry Canada

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

DGTP-002-07

**COMMENTS OF SHAW COMMUNICATIONS INC.**

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## EXECUTIVE SUMMARY

### **The Need for Measures to Promote Entry**

The Government of Canada has identified facilities-based competition as the model that best serves the interests of consumers. Unlike the wireline market, however, new facilities-based entry into the wireless market cannot occur on its own: Lack of spectrum is an absolute barrier to entry by facilities-based wireless carriers.

Spectrum is a scarce resource; it is managed by the Government of Canada in the public interest. The public interest dictates that the government reserve spectrum for potential new entrants, who have demonstrated a demand for AWS spectrum.

The Telecommunications Policy Review Panel recognized that Canada's wireless industry lags those in North America and Europe in key metrics, including penetration. Given the growing importance of this segment, the panel recommended measures to develop a more efficient and vibrant wireless industry.

The licensing of new spectrum presents the most significant opportunity for Canada to regain its leadership in this segment. If this opportunity to ensure new entry is squandered, the government risks being required to undertake more explicit and detailed remedial regulation if further spectrum concentration is the outcome. This result would be inconsistent with the government's policy of relying on market forces.

The process for awarding AWS spectrum and the licence conditions should therefore be articulated with the clear objective of promoting competition and new entry. This can best be achieved by awarding the AWS spectrum through a competitive process, rather than an auction. In our view, a competitive process will best ensure the licensee(s) of AWS spectrum will provide innovative, converged broadband services to Canadian consumers, and robust competition to existing carriers.

No mobile wireless carrier has ever entered the Canadian market by purchasing spectrum at auction. In 1984, the Bell entities and CANTEL, now Rogers Wireless Inc. (Rogers), were granted the original cellular spectrum at 800 MHz in a competitive process rather than an auction. Again, in 1995, these incumbents, together with Clearnet and Microcell, were granted PCS spectrum in a similar process. Rogers and Bell Canada also jointly acquired a block of valuable Multipoint Communications Spectrum (MCS) in the 2500 to 2596 MHz band that has been designated for mobile use, originally licensed to an affiliate of Microcell. This spectrum, too, was awarded in a competitive process rather than an auction.

In the only Canadian auction of cellular or PCS spectrum, held in 2001, Rogers, Bell and TELUS, the wireless incumbents, were the only purchasers. This speaks volumes as to the probable outcome of an auction for the AWS spectrum in the absence of a set aside or other measures to ensure spectrum does not fall exclusively into the hands of these same incumbents.

Therefore, if an auction is used, the process and criteria must be structured, to the greatest extent possible, to meet the same policy objectives as would a competitive process.

Financial analysts have publicly noted the significant challenges faced by new entrants to crack the mobile wireless market in Canada. We concur, and have indicated a cautionary note to the marketplace. In short, the willingness of potential new entrants to pay for spectrum at auction and to make the significant investments necessary to compete in the marketplace will be directly affected by conditions established by Industry Canada as a result of this Consultation.

The wireless incumbents enjoy formidable advantages in bidding for new spectrum based on their ubiquitous national networks, brands and customer bases. Industry consolidation, facilitated by the elimination of the spectrum cap, has ensured that they each have sufficient spectrum to roll out next generation services. A spectrum auction without any set aside for new entrants would allow these incumbents to keep spectrum out of the hands of new entrants. Given the immense profitability of the Canadian wireless industry, they have both the incentive and ability to do just that. Other than government revenue generated by the auction itself, there would be no net benefit to Canada.

In summary, the licensing framework must actively promote greater, more rivalrous competition among multiple facilities-based providers, each with the requisite financial capacity, incentive, customer base and business experience to compete vigorously and effectively. Only this outcome will bring benefits to Canadian consumers, and only a competitive licensing process or set aside of spectrum at auction will accomplish this goal.

### **Shaw's Comments on other Issues Raised in the Consultation**

Whether a certain amount of spectrum should be set aside for new entrants, who should be entitled to bid, and the amount of spectrum that should be set aside (Consultation, s. 2.7).

If an auction is employed, a set aside of spectrum for new entrants is necessary; such a set aside is preferable to a spectrum aggregation limit, which has been unsuccessful in creating sufficient competition.

To qualify for spectrum set aside, a new entrant should be defined as “a person who does not operate, or does not have an affiliate that operates, either alone or together with any other person, a wireless PCS/Cellular network that offers high mobility phone services.” (Our proposed amendment to the Department's language is underlined).

The amount of spectrum set aside must be sufficient to allow new entrants to compete on a level playing field with the spectrum-rich wireless incumbents, and to provide new entrants with a full opportunity to deploy converged wireless broadband services. Therefore, Shaw recommends that a minimum of 50MHz of spectrum in the new AWS band (1.7GHz, 2.1GHz) be set aside for new entrants. Shaw notes that this band will be the focus of development and innovation among U.S. cable operators. Providing Canadian cable operators an opportunity to participate in this innovation will serve the public interest in promoting the adoption of wireless broadband services and support Industry Canada's policy of harmonizing the use of spectrum in Canada with North American band plans.

Service Areas (Consultation, s. 4.2).

The Department proposes a mix of Tier 2, Tier 3 and Tier 4 service areas be used to license the AWS spectrum and Tier 2 service areas be used to license PCS expansion spectrum.

Tier 2 service areas are most appropriate in respect of the AWS spectrum. These service areas reflect 8 provincial and 6 large regional service areas. Shaw is focused in particular on the Tier 2 service areas represented by the provinces of Alberta and British Columbia, which cover its serving areas in Western Canada.

In the United States market, consumers in large cities often benefit from the service offerings of anywhere from 4 to 6 mobile carriers, many of which are effective regional PCS competitors. In Canada, the licensing of strong regional competitors is similarly capable of providing effective competition to the wireless incumbents, provided the licensing framework promotes competition and entry by entities with the requisite financial resources and customer base.

Canada's wireless industry is characterized by the participation of large, converged wireline and wireless communications companies with massive sunk investments in ubiquitous networks and large installed customer bases. Notwithstanding the relatively lower penetration rate of wireless services in Canada, the market is nevertheless maturing rapidly, a fact that will challenge new entrants to compete vigorously with the Wireless Incumbents for existing wireless customers, in addition to new customers.

In this regard, the existence in Canada of strong regional cable operators which could potentially enjoy significant economies of scope when offering wireless services is likely to play a significant role. For example, the entry of Shaw into the broadband wireless market can provide significant benefits for Western Canada. Taking advantage of the potential synergies of Shaw's wireline and wireless services, these benefits would not only accrue to Canadians in the large metropolitan areas, but also to small and medium sized communities like Penticton, Prince George, Red Deer and Cranbrook, where competitive options are particularly scarce.

Whether mandating incumbent mobile wireless operators to offer roaming services to both competing and non-competing Canadian carriers, to foster the development of competitive wireless communications services, is in the public interest (Consultation, s. 3).

As indicated above, not only the licensing process, but also the terms and conditions of entry, are critical to the success of a policy promoting competition and new entry in the mobile wireless market. Mandated roaming arrangements, as well as tower sharing conditions, will be central to the viability of a new entrant entering what is a rapidly maturing market.

Although significant, the cost of spectrum can be expected to be dwarfed by the investment necessary in the actual wireless network required to serve widely dispersed populations in Alberta and British Columbia. As noted by the Department, in 1995, at the time of licensing the national and regional PCS carriers for the 2 GHz spectrum, conditions of licence were imposed

on the existing cellular mobile carriers in order to extend entrants' coverage during the implementation of their networks. In that circumstance, the roaming obligation was limited to the analogue services only of the cellular incumbents, as those companies themselves did not yet have mature digital networks. That is no longer the case today.

The wireless incumbents benefit from mature, national digital networks that permit their customers to travel extensively throughout the country without having to roam on a competitor's network. In contrast, while new entrants are building out their networks, they will be able to offer their customers very limited on-net coverage. New entrants will thus face a major competitive disadvantage that will restrict their ability to earn revenues and win customers at early stages of their network build-out; in turn, the lack of cash flow will slow the process of building these networks, thereby limiting the development of competitive wireless communications services. Under this scenario, the wireless incumbents will have very little incentive to offer roaming services to new entrants at competitive rates. Mandated roaming arrangements for both competing and non-competing Canadian carriers will be critical to the introduction of new wireless carriers into this rapidly maturing market. For similar reasons, Shaw is of the view that mandated tower sharing is in the public interest. In addition to being necessary from a network deployment perspective, given the negative public perception around the construction of communications towers, these arrangements are long overdue.

Mandated roaming and tower sharing are conditions commonly imposed in countries which have succeeded in ensuring entry by new carriers. The presence or absence of these conditions will play a key role in potential entrants' decisions whether to seek spectrum licences. In the U.S., the FCC has applied a broad roaming obligation on a technology-neutral basis that applied to the AWS spectrum recently auctioned in the U.S. Shaw strongly recommends the adoption in Canada of a similar technology-neutral rule that would permit new mobile broadband services, such as video, to be available when users are roaming. Given the disincentive on the Wireless Incumbents to price these services at competitive rates, Shaw recommends that these services be provided at essential facilities rates for a period of five years, after which these rates would be phased out.

## **Conclusion**

The availability of additional spectrum in the 2 GHz frequency band represents a one-time opportunity to enhance the availability and adoption of next-generation mobile wireless services by Canadians and Canadian businesses, regain Canada's leadership position in the mobile wireless industry, and increase the productivity of the Canadian economy. But the interests of consumers will only be realized through facilities-based entry. This entry will not result from an auction and licensing process designed solely to attract the highest bid, and that places this valuable spectrum into the hands of the wireless incumbents, who lack the incentive to increase innovation and provide choice and lower prices. If it is to be successful in attracting entry, the licensing framework established by the Department must include active measures to foster new entry and enhance competition.

## **Introduction – a unique opportunity**

1. Shaw Communications Inc. (“Shaw”) provides the following comments in response to *Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services* (the “Consultation”), released by Industry Canada in February 2007.
2. Shaw is a leading provider of broadband services in Western Canada, with 2.3 million customers across Alberta, British Columbia, Saskatchewan, Manitoba and Northwestern Ontario. In addition to its broadband services offerings, Shaw operates a national direct-to-home satellite service (through Star Choice) and a commercial satellite services business. Shaw also recently entered the telephone market in Alberta, British Columbia, Saskatchewan and Manitoba – providing much-needed competition to the incumbent telephone companies (the “ILECs”) in the region.
3. Shaw would potentially be interested in providing broadband wireless communications services to its existing (and future) customer base in Western Canada. Our interest is contingent, however, on an appropriate licensing framework and terms and conditions being established by Industry Canada pursuant to this Consultation.
4. Industry Canada’s plan to release new mobile spectrum in the 2 GHz range, including for Advanced Wireless Services (“AWS”), represents a significant development that could allow Canada’s communications infrastructure to remain in step with those in North America and Europe by maximizing the use of Canada’s mobile spectrum for voice, data (broadband Internet access) and video (multimedia) services.
5. The licensing of new spectrum presents the most significant opportunity for Canada to regain its leadership in this segment. If this opportunity to ensure new entry is squandered, the government risks being required to undertake more explicit and detailed remedial regulation if further spectrum concentration is the outcome. This result would be inconsistent with the government's policy of placing greater reliance on market forces.

6. As currently structured, Canada's mobile wireless industry is neither positioned nor inclined to maximize Canadians' adoption of next generation wireless communications technologies and applications. The Telecommunications Policy Review (the "TPR") recognized that Canada's wireless industry lags those in North America and Europe in key metrics, including penetration. Given the growing importance of this segment, the TPR recommended measures to develop a more efficient and vibrant wireless industry.
7. In order to promote this objective, together with the Government of Canada's interest in promoting greater facilities-based competition for the benefit of consumers, new entry is required. Competition must be among multiple facilities-based providers, each with the requisite financial capacity, incentives, customer base and business experience to drive a more vibrant and efficient industry that will deliver to consumers the benefits of lower prices and greater choice – in service providers, services and cutting-edge applications.
8. Unlike the wireline and other industries, the mobile wireless industry features unique barriers to facilities-based entry. Foremost among these is an absolute requirement for access to a public, and scarce resource – radio spectrum. In order to deliver the maximum benefits to Canadian consumers, it is therefore essential that Industry Canada allocate this spectrum in a manner that best facilitates entry of new players into the market, particularly for the provision of AWS.
9. In the comments that follow, Shaw first demonstrates the need for Industry Canada to articulate a clear objective of promoting competition and new entry when establishing the conditions for the allocation and licensing of AWS spectrum. Since the challenges facing potential entrants into a rapidly maturing mobile wireless market do not end with the need for spectrum, Shaw then elaborates upon the conditions necessary for the emergence of new competition, focusing upon three critical elements to any such strategy: setting aside spectrum for new entrants; supporting the emergence of strong regional communications carriers, and mandating necessary roaming and tower-sharing arrangements.

## **The need for measures to enable market entry**

10. In the Consultation, the Department seeks comment on whether there is a need for measures intended to enable market entry in the AWS spectrum auction. Shaw is strongly of the view that there is, indeed, a need for such measures, in order to ensure that this spectrum is put to the best possible use on behalf of Canadians.

*(a) Under Current Circumstances, the Goal of Licensing New Spectrum Must be New Entry and Greater Competition*

11. Spectrum is a scarce and finite resource, managed by the Government of Canada in the public interest. This scarce resource must therefore be put to the best possible use in further developing Canada's wireless communications infrastructure and increasing Canadians' adoption of wireless and converged applications. The best way to accomplish this goal is to reserve spectrum for potential new entrants who have demonstrated a demand for AWS spectrum and will render the market more competitive, for the benefit of Canadian consumers.
12. This government has acknowledged that "Canada has not remained at the leading edge of technological development and deployment in key emerging technologies, such as wireless and broadband."<sup>1</sup> This acknowledgment is consistent with the findings of the TPR, which specifically identified *broadband* and *wireless* as the only areas in which Canada has failed to maintain its leadership. The Panel cautioned "[U]nless it improves its performance in delivering advanced broadband and wireless services, Canada risks slipping behind other countries in providing the infrastructure to deliver the kinds of economic and social benefits needed to improve the productivity and competitiveness of the Canadian economy, improve the quality and efficiency of government and public services, and build a more inclusive society. In the Panel's view, Canada cannot afford to be complacent."

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<sup>1</sup> See the Regulatory Impact Analysis Statement accompanying Order under Section 8 of the Telecommunications Act – Policy Direction to the Canadian Radio-television and Telecommunications Commission.

13. While the wireless incumbents have been keen to debate the TPR's specific findings with respect to the pricing and penetration of mobile wireless services in Canada, the TPR's principal message in respect of the wireless segment nonetheless forcefully remains: Canada is lagging the U.S. and European countries in key metrics such as the penetration of mobile wireless services and the rollout of many new mobile wireless services and features, with the largest gap being with respect to the implementation of third-generation (3G) high-speed data services. As a result, the Panel recommended that Industry Canada articulate a spectrum policy ensuring, among other things, "continued use of regulatory mechanisms such as spectrum caps (aggregation limits) where spectrum is scarce in order to provide an opportunity for new entrants to acquire spectrum and for Canadians to have an expanded choice of service providers."
  
14. This government has endorsed facilities-based competition as a "durable form of competition that will deliver the greatest benefits to consumers, disciplines the market and strengthens investment in telecommunications infrastructure."<sup>2</sup>  
Yet, unlike the wireline and other industries, the mobile wireless industry features a unique barrier to facilities-based entry: in order to compete with the wireless incumbents an entrant requires radio spectrum. Spectrum is a scarce public resource. The incumbent wireless carriers already largely enjoy sufficient spectrum for their needs. Accordingly, in order to deliver the maximum benefits to Canadian consumers, Shaw submits that Industry Canada should allocate spectrum, particularly in the AWS band, in a manner that best facilitates entry of new facilities-based players into the market.
  
15. The goal of facilitating new entry into the mobile wireless market has received broad agreement. A report recently commissioned by the Canadian Wireless Telecommunications Association indicates that the unavailability of spectrum constitutes a powerful barrier to entry into the wireless market, and highlights the value of preserving an opportunity for new network-based entry as "extremely important to

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<sup>2</sup> See the Regulatory Impact Analysis Statement accompanying Order Varying Telecom Decision 2006-15, P.C. 2007-0532.

disciplining market behaviour, irrespective of whether a new entrant would ultimately succeed in the market.”<sup>3</sup>

16. The present licensing process is a critical opportunity for the government to ensure the emergence of additional facilities-based wireless carriers.<sup>4</sup> The scarce nature of spectrum and the significant barriers to entry make clear that the government will not have another opportunity to facilitate the entry of an additional competitor into the market should the present licensing process result in the further accumulation of spectrum in the hands of the incumbent wireless carriers. If this opportunity is lost to ensure new entry, the government risks being required to undertake more explicit and detailed remedial regulation if the licensing process results in further spectrum concentration. Such a result would be inconsistent with the government's policy of relying on market forces.
17. For Canadian consumers, new entrants in the wireless market have proven to be the source of significant innovation and choice in services and technologies. For example, Clearnet Communications Inc. (“Clearnet”), a new entrant in the 1995 PCS licensing round, first introduced the Mike ESMR service to business users in Canada, using Motorola’s iDEN technology. This service provides its users the benefits of a trunked radio and a cellular telephone, as well as a “Push-To-Talk” feature. This service has been continued by TELUS since its purchase of Clearnet in 2000.
18. Microcell Telecommunications Inc., the other new entrant in the 1995 PCS licensing round and acquired by Rogers in 2004, also offered innovative, competitive products, including flat-rate price plans, per-second billing and its City Fido plan in Vancouver and other select major urban centres. In its *Decision to Rescind the Mobile Spectrum Cap Policy*<sup>5</sup>, Industry Canada explicitly recognized, “the new entrants have had a significant

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<sup>3</sup> Wall Communications Inc., “A Study on the Wireless Environment in Canada”, prepared for the Canadian Wireless Telecommunications Association (29 September 2006), at p. v (the “Wall Report”). The Wall Report also concludes the limited opportunity for network-based entry into the wireless communications market “remains the single most important issue.” (at page 79).

<sup>4</sup> The Consultation remarked that licensing of new spectrum provides “a unique occasion to give regard to the [policy objectives set out in Section 7 of the *Telecommunications Act*] as the government controls access to the underlying resource (spectrum) needed for market entry.” (at section 2.1).

<sup>5</sup> Gazette Notice No. DGTP-010-04.

impact in stimulating innovation in the provision and choice of services.” It is clear that new entrants will again play a role in stimulating innovation in the provision and choice of services critical to putting Canada back on a leadership path.

19. The current structure of Canada’s mobile wireless industry clearly limits the ability of market forces to exert sufficient discipline on the principal actors, particularly where the threat of market entry by a new competitor is not a realistic prospect. As observed by the TPR, “[I]n the U.S., 97 percent of the population live in areas with three or more mobile providers, 87 percent live in areas with five or more mobile wireless operators, and 41 percent live in areas with at least six.” The TPR identified the smaller number of mobile providers in Canada as possibly leading to less competition than in the U.S. market, “which consequently has resulted in higher prices, less innovation, lower uptake and lower rates of usage.” Under these circumstances, the interests of Canadian consumers are not adequately protected. As such, the government’s policies of encouraging facilities-based competition and greater reliance on market forces militate clearly in favour of new entry in this instance.
20. Enabling an existing regional company like Shaw to access AWS spectrum serves both of these objectives. In contrast, providing additional spectrum resources to the incumbents will only decrease the likelihood of an additional competitor entering the market and thereby further constrain innovation and competition in the critical wireless segment of the market, thereby defeating these objectives.
21. The Canadian market has room for additional facilities-based carriers if the appropriate measures are taken to eliminate the formidable barriers to entry in this market. If Industry Canada believes – as Shaw does – that Canadian consumers will unquestionably benefit from the entry of new carriers, then the licensing process must be designed to facilitate these carriers’ entry. In the section that follows, Shaw outlines the advantages of a competitive process for assigning the additional spectrum.

*(b) A Competitive Process would Ideally be Employed to Ensure Achievement of the Policy Goals of New Entry and Increased Competition*

22. The process for awarding AWS spectrum and the licence conditions associated with any such award should be both articulated and designed with the primary objective of promoting competition and new entry in the market. This would be best fulfilled by awarding the AWS spectrum through a competitive process. Such a process would allow the government to maximize its policy objectives by ensuring the licensees of the AWS spectrum are those best positioned and motivated to provide innovative, converged broadband services to Canadians in direct competition to the wireless incumbents.
23. The existence of strong regional cable operators in Canada which could potentially enjoy significant economies of scope when offering wireless services is likely to prove critical in this regard. For example, the potential entry of Shaw into the broadband wireless market would provide significant benefits for Western Canada, in the form of increased competition and more choice for consumers. By taking advantage of the potential synergies between Shaw's wireline and wireless services, benefits would not only accrue to Canadians in the large metropolitan areas in Western Canada, but also to small and medium sized communities, like Penticton, Prince George, Red Deer and Cranbrook, where competitive options are particularly scarce. It is in this respect that Shaw feels it can make a truly substantial and unique contribution to the current market landscape.
24. No mobile wireless carrier has ever been required to enter the Canadian market by purchasing spectrum at auction. In 1984, the former members of the Stentor Alliance, i.e., the ILECs, and CANTEL, now Rogers Wireless Inc. (Rogers), were granted the original cellular spectrum at 800 MHz in a competitive process rather than an auction. In this process, there was effectively a "set aside" of spectrum to ensure affiliates of the ILECs were not the only licensees.
25. In 1995, Industry Canada again set aside spectrum in a second competitive licensing process designed specifically to foster the introduction of new entrants into the market. That process did in fact lead to two additional licensees, Microcell and Clearnet, and

resulted in four competing suppliers in the market. At that time, a spectrum aggregation cap was also applied, that limited the ability of incumbents to further consolidate the industry.

26. Two of the wireless incumbents, TELUS and Rogers, subsequently acquired Clearnet and Microcell, respectively. However, while these latter PCS licensees are no longer competing independently in the market, it is noteworthy that the process of setting aside spectrum for new entrants in 1995 had its intended effect and did indeed introduce two new competitors into the market. As outlined above, the presence of these competitors unquestionably resulted in greater choice and innovation in mobile wireless services being offered to Canadian consumers. However, we have now returned to a situation in which there are only three principal mobile providers operating in each region, and where all available spectrum is concentrated in their hands.
27. Two of these three national incumbent wireless carriers – Bell Canada and Rogers, also jointly acquired a block of valuable Multipoint Communications Spectrum (“MCS”) in the 2500 to 2596 MHz band that has been designated for mobile use, originally licensed to an affiliate of Microcell. This spectrum, too, was initially awarded in a competitive process rather than by auction.
28. Shaw submits that a competitive process would be the preferable means of ensuring entry by competitors with the wherewithal and experience necessary to meet the challenge of competing effectively with the wireless incumbents.

*(c) The Terms of an Auction and other Licence Conditions Must, to the Extent Possible, Ensure New Entry and Increased Competition are Achieved*

29. In response to the Consultation’s call for comments respecting the terms and conditions for an auction, Shaw considers it of primary importance that any auction process be structured, to the greatest extent possible, to meet the same policy objectives as would a competitive process, i.e., increased competition and facilities-based entry. At a minimum, this requires the Department to follow the TPR’s recommendation to use

regulatory mechanisms to ensure new entrants acquire scarce spectrum and for Canadians to have an expanded choice of service providers.

30. With the elimination of the spectrum cap and, at the same time, the consolidation of the wireless industry, an auction is now weighted heavily in favour of the wireless incumbents – companies which, in addition to their established networks, have the resources and incentive to outbid their rivals and to maintain a stranglehold on new spectrum as it is made available. Companies now considering entering the market must expend enormous amounts of capital to purchase spectrum at auction. The incumbent wireless carriers, which acquired their spectrum in competitive licensing processes, never experienced such a financial burden, since they only purchased spectrum in auctions in respect of a second or third tranche of spectrum, and then only after having established their networks and enjoyed the benefits of a stable revenue stream from their investment. It is noteworthy that in the only Canadian experience of an auction of cellular or PSC spectrum, held in 2001, the wireless incumbents were the sole purchasers of spectrum. This speaks volumes about the likely outcome of any auction held in respect of AWS spectrum in the absence of a set aside or other measures to ensure the available spectrum resources do not fall exclusively into the hands of these companies.
31. Based on their ubiquitous national networks, brands and customer bases, the wireless incumbents enjoy formidable advantages in bidding for new spectrum. Industry consolidation has ensured that each of the wireless incumbents has sufficient spectrum to roll out next generation services. Proceeding with a spectrum auction without any spectrum set-aside for new entrants would provide the wireless incumbents with the opportunity to act on their incentive to keep spectrum out of the hands of these new entrants by bidding up the cost of this spectrum. Other than, potentially, the government revenue generated by the auction itself, there would be no net benefit to Canada. Moreover, an auction that permits incumbents to engage in such spectrum hoarding at the expense of new entry will lead to inefficient use of spectrum. Given the TPR's caution regarding Canada's lagging leadership in the wireless segment, Shaw submits this would be a public policy failure.

32. While a spectrum auction *may* result in the efficient allocation of scarce spectrum in a market which is already vigorously competitive, auctions cannot be relied upon to efficiently allocate spectrum, let alone ensure its availability to new entry, where, as here, the structure of the industry provides the wireless incumbents a strong incentive to keep spectrum out of the hands of new entrants. Indeed, the Consultation expressed reservations about the effectiveness of a spectrum auction based on the current market conditions. In order to ensure that the prospective economic benefits to be derived from an auction are in fact maximized, the Consultation remarked that “it is important that potential licensees indeed be operating in a competitive marketplace”.<sup>6</sup> Given the current state of the market and the concentration of spectrum in the hands of the three incumbents, Shaw contends that an auction, on its own (i.e. without other measures to ensure the entry of new competitors), is not the best means to achieve the Government’s stated policy objectives.
33. Indeed, the greatest risk to the efficient deployment of new spectrum is the establishment of a licensing framework and terms and conditions that are so unattractive as to discourage interest from sophisticated potential new entrants.
34. In the UK, when Ofcom’s predecessor auctioned 3G spectrum, it specifically reserved the largest spectrum block for new entrants. With four mobile operators in the market, the UK government expressed its belief that there was scope for additional competition in the mobile market which should bring substantial benefits to consumers through the faster roll-out of innovative services and lower prices: “A new entrant can also bring fresh, innovative ideas and approaches.”
35. In addition to the concentration of mobile spectrum in the hands of the wireless incumbents, the wireless industry in Canada is characterized by the participation of large, converged wireline and wireless communications companies with massive sunk investments in ubiquitous networks and large installed customer bases. Notwithstanding

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<sup>6</sup> Page 14.

the relatively lower penetration rate of wireless services in Canada, the market is nevertheless maturing rapidly, a fact that will challenge new entrants to compete vigorously with the wireless incumbents for existing wireless customers, in addition to new customers.

36. Financial analysts have publicly noted the significant challenges faced by new entrants to crack the mobile wireless market in Canada. Shaw concurs in this view, and has indicated a cautionary note to the marketplace. In short, the willingness of potential new entrants to pay for spectrum at auction and to make the significant investments necessary to compete in the marketplace will be directly affected by conditions established by Industry Canada as a result of this Consultation.
37. Having established that entry of a fourth potential facilities-based wireless competitor is desirable and, indeed, essential, Shaw now turns to the measures necessary in order to foster such entry.

### **Spectrum set-aside**

38. The Consultation requests comment on whether a certain amount of spectrum should be set aside for new entrants.<sup>7</sup>
39. It is imperative that an appropriate amount of spectrum be set aside and allocated to any prospective entrants that express interest in becoming new facilities-based wireless competitors. If an auction is employed, a set aside of spectrum for new entrants is necessary and, in Shaw's view, preferable to a spectrum aggregation limit for the sake of meeting the policy objectives of increased competition and adoption of next generation services. Specifically, Shaw requests that Industry Canada consider setting aside a minimum of 50MHz of spectrum in the new AWS band (1.7GHz, 2.1GHz), in respect of each of its operating territories.

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<sup>7</sup> Section 2.7.1, page 22.

40. Shaw recommends that to qualify for spectrum set aside, a new entrant should be defined as “a person who does not operate, or does not have an affiliate that operates, either alone or together with any other person, a national, or in relation to one or more service areas, a regional, wireless PCS/Cellular network that offers high mobility phone services.” (Shaw’s proposed amendment to the Department’s language is underlined). This modification of the Department’s proposed definition will serve to prevent partnerships between the wireless incumbents and smaller players in respect of spectrum bids, which would only have the effect, for all intents and purposes, of concentrating additional spectrum in the incumbents’ hands. This modification will also ensure that two affiliates which together operate a national network will not be eligible for the spectrum set aside for new entrants.
41. The amount of spectrum set aside must be sufficient to allow new entrants to compete on a level playing field with the spectrum-rich wireless incumbents and to provide new entrants with a full opportunity to deploy converged wireless broadband services. Therefore, Shaw recommends that a minimum block of 50MHz of spectrum in the new AWS band (1.7GHz, 2.1GHz) be set aside for new entrants. Shaw notes that this band will be the focus of development and innovation among cable operators in the United States. Providing Canadian cable operators with the opportunity to engage in offering new, innovative and converged technologies will serve the public interest by promoting the adoption of wireless broadband services and will support Industry Canada’s policy of harmonizing the use of spectrum in Canada with North American band plans.
42. Inclusion of a set-aside in the licensing process is the only realistic means to ensure the entry of a new competitor and thus to introduce further competition in the wireless market.

### **Mandated roaming and tower sharing**

43. In the Consultation Industry Canada asks whether mandating incumbent mobile wireless operators to offer roaming services to both competing and non-competing Canadian

carriers, to foster the development of competitive wireless communications services, is in the public interest.<sup>8</sup>

44. After access to spectrum, access to roaming arrangements and to the wireless incumbents' tower sites, on favourable terms, are the most critical potential barriers to market entry that must be overcome. Mandated roaming arrangements and tower sharing coordination are central to the viability of a new entrant entering what is a rapidly maturing market.
45. The wireless incumbents benefit from mature, national digital networks that permit their customers to travel extensively throughout the country without having to roam on a competitor's network. In contrast, while new entrants are building out their networks, they will be able to offer their customers only very limited on-network coverage. New entrants will thus face a major competitive disadvantage that will restrict their ability to earn revenues and win customers at early stages of their network build-out. In turn, the lack of initial cash flow will impact negatively on the speed at which the process of building these networks out is undertaken, thereby limiting the development of competitive wireless communications services. The challenges faced by prospective competitors due to the impossibility of building an entire, extensive network immediately upon their entry into the market constitute an additional and significant barrier to entry.
46. The issue of roaming obligations is all the more critical when the wireless incumbents have fully established national networks, since their ability to cover the entire country automatically reduces their economic incentives to enter into roaming agreements with smaller and regional carriers. The wireless incumbents will have very little incentive to offer roaming services to new entrants at competitive rates. Given the likelihood of intransigence on the part of the wireless incumbents, mandated roaming arrangements for both competing and non-competing Canadian carriers will be critical to the introduction of new wireless carriers into this rapidly maturing market. For similar reasons, Shaw is of the view that mandated tower sharing is in the public interest. In addition to being

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<sup>8</sup> Section 3, page 24.

necessary from a network deployment perspective, due to the negative public perception around the construction of communications towers, these arrangements are long overdue.

(a) *Roaming arrangements*

47. Conditions relating to mandated roaming and tower sharing are commonly imposed in countries which have succeeded in ensuring sustainable entry by new carriers, and the presence or absence of these conditions will play a key role in potential entrants' decisions whether to seek spectrum licences in any auction process. Shaw strongly recommends that Industry Canada adopt a technologically-neutral roaming rule. Such a rule would make available new mobile broadband services, such as video, when users are roaming.
48. Shaw submits that mandating roaming arrangements between the wireless incumbents and any prospective new entrants in this process would be critical to fulfilling the objective of the *Telecommunications Act* of promoting the availability of reliable and affordable telecommunications services to all regions of Canada, notably, a goal which was highlighted in the Consultation.
49. The FCC has similarly imposed roaming obligations on wireless carriers and has expressed the necessity of such conditions, particularly for the sake of new entrants. In 1996, the FCC concluded proceedings concerning the offering of roaming services by commercial mobile radio service ("CMRS") providers and determined that the availability of roaming was critical to the development of nation-wide, ubiquitous and competitive wireless telecommunications services. The FCC specifically noted that while PCS systems were in the process of being constructed, market forces alone may not be sufficient to ensure that roaming is widely available.<sup>9</sup> As a result, the FCC elected to extend the scope of the then-existing manual roaming rule, requiring cellular carriers to serve individual roamers, to include a subscriber of a comparable CMRS Service using a handset that was technically capable of accessing the licensee's system. Notably, the

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<sup>9</sup> FCC, "Second Report and Order and Third Notice of Proposed Rulemaking," 13 August 1996 (the "1996 Order").

FCC indicates in the 1996 Order that its actions were taken specifically to further the charge given to the FCC by Congress to promote competition and reduce regulation in order to reduce prices and improve services to consumers.

50. It is Shaw's view that roaming requirements are central to the facilitation of entry by new competitors and to the state of competition in the market at large. Without adequate roaming arrangements, any new competitor's wireless service would be subject to a considerable, and likely insurmountable, disadvantage. Shaw's customers, for example, would have only limited geographic coverage and would not be able to use their wireless devices outside Shaw's operating territory or anywhere within Shaw's operating territory where Shaw has yet to construct its network. Any new entrant with only a limited network reach at the outset (a fact which is inevitable) will be less marketable to consumers and will therefore be in a disadvantaged position relative to the wireless incumbents.

*(b) Tower sharing*

51. Shaw submits that the current auction process must incorporate conditions imposed on current and future licensees that aim to encourage and ensure economically and socially efficient tower-sharing arrangements with new entrants. If new entrants cannot be guaranteed access to wireless incumbents' tower facilities, then the speed of their wireless roll-out and its geographic coverage will suffer greatly. Restrictive access to towers would, in addition to increasing operating costs, virtually guarantee that the competitors' wireless product would be uncompetitive in the market.
52. Both the TPR and Industry Canada have noted the centrality of tower sharing and access to towers to the development and expansion of Canada's telecommunications industry and to the development of a competitive marketplace. Shaw notes that the Governor in Council's recent Policy Direction to the CRTC cites the importance of competitively neutral access to support structures.

53. Initially, Industry Canada addressed the tower sharing issue in the context of expectations imposed on service providers.<sup>10</sup> In the 1995 PCS licensing process, wireless carriers were expected to make their supporting structures available to other wireless service providers on a non-discriminatory basis.<sup>11</sup> However, the “Report on the National Antenna Tower Policy Review” (the “NATPR”), commissioned by Industry Canada and submitted in December 2004, recommended that new and more explicit policies aimed at stimulating tower sharing be implemented (Recommendation 28) and that Industry Canada explore policy options to stimulate co-location of antennas at terrestrial or rooftop sites and increase co-location generally with other urban infrastructure (Recommendation 29).<sup>12</sup>

54. It is evident that, despite Industry Canada’s encouragement of tower sharing, wireless carriers have neglected to make significant progress on this matter. Industry Canada expressed its disappointment at the lack of progress in the development of such commercial arrangements in a letter to all PCS licensees in April 1996:

You are expected to respect Industry Canada’s policy of encouraging shared use of advantageous antenna sites among mobile telecommunications service providers. We note with some disappointment a lack of significant tangible progress by the cellular and PCS players in adopting measures that will result in greater sharing of antenna sites as a means to minimize any undesirable impact. Should the industry not show a greater willingness to voluntarily address the growing concerns of land-use authorities and the public, we anticipate that further intervention may be required.<sup>13</sup>

55. The NATPR indicates that Industry Canada has reiterated this position to wireless carriers on a number of occasions since that letter was issued and points to statistics that 68 per cent of all PCS/cellular antenna sites in Canada are used by the holder of the site

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<sup>10</sup> Client Procedures Circular, *Environmental Process, Radiofrequency Fields and Land-use Consultation*, CPC-2-0-03, Issue 3, 24 June 1995, at page 6.

<sup>11</sup> Industry Canada, “Policy and Call for Applications: Wireless Personal Communications Services in the 2 GHz Range, Implementing PCS in Canada”, 15 June 1995, at page 13.

<sup>12</sup> Industry Canada Registration Number 54220B, Principal Investigator: David A. Townsend, Faculty of Law, University of New Brunswick, Fredericton, New Brunswick, November 2004. Available online at: <http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf05353e.html>.

<sup>13</sup> Letter by Industry Canada to all PCS licensees, dated 15 April 1996.

alone, and 79 per cent of PCS/cellular antenna tower structures in Canada are not shared with any wireless competitors.<sup>14</sup>

56. Significantly, the NATPR quoted extensively from the submission made to it by Microcell, which discussed in detail the difficulties it had faced, as a new entrant, in reaching co-location agreements on acceptable terms and conditions.<sup>15</sup> Microcell expressed considerable frustration at the practices employed and conditions imposed by certain carriers which restricted sharing unnecessarily and caused the unnecessary proliferation of towers, and highlighted in particular the incumbents' practices of insisting on 'site-banking' requirements<sup>16</sup> and of signing exclusive leasing arrangements for certain site locations. The NATPR concluded that the site-banking and exclusivity arrangements "are inhibiting the sharing of existing tower, rooftop and other sites in Canada," and recommended that Industry Canada examine the impact of these arrangements on co-location generally and consider whether they inhibit antenna site co-location.<sup>17</sup>
57. The TPR viewed the lack of antenna tower sharing as constituting a significant barrier to entry into the telecom market, and considered it "essential for these kinds of barriers to market entry and network expansion to be removed, so competitive markets can offer customers a full choice of service providers and services and so the cost of network expansion can be reduced."<sup>18</sup> The TPR noted, further, that desirable sites are often short in supply and are often located on private property. Because good site selection can lead to significant cost savings for carriers, desirable tower locations are often the subject of

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<sup>14</sup> NATPR, at pages 124-125.

<sup>15</sup> NATPR, at pages 125-126.

<sup>16</sup> These requirements involve one wireless operator being obliged to trade access to its own antenna sites in order to gain access to another operator's sites. Such conditions are particularly onerous for new entrants, who of course have fewer sites than the wireless incumbents. These terms are also referred to as 'one for one' clauses, because access at one operator's site is traded for access at another's site. The term 'site-banking' derives from the fact that each accommodation provided to a competitor is 'banked' (or credited), and when there is an imbalance of credits, no additional sites will be shared with a requesting carrier until that carrier remedies the imbalance by sharing its own antenna sites. These arrangements can operate on either a regional or a national basis.

<sup>17</sup> NATPR, at pages 128-129.

<sup>18</sup> TPR, at page 5-11.

fierce competition.<sup>19</sup> Notably, this competition has also engendered the unfortunate practice of carriers seeking (and often obtaining) exclusive rights to the most favourable locations – yet another means by which the wireless incumbents have secured a competitive advantage.

58. The TPR recommended that responsibility for regulation of telecommunications antennae be transferred to the CRTC and that the CRTC be empowered to regulate and promote tower sharing for telecom purposes and to resolve any related disputes. The TPR also recommended that the CRTC be empowered to prohibit carriers from entering into exclusive dealings in respect of locating telecom antennas on rooftops, because such arrangements could constitute a significant barrier to entry, increase the costs of entry, and impair the development of a competitive market.<sup>20</sup>
59. Therefore, in addition to enabling the entry of new entrants through a spectrum set-aside, Industry Canada must institute stronger roaming requirements and tower-sharing obligations in order to further develop and enhance the competitive marketplace. Shaw emphasizes, however, that it is not simply a matter of mandating tower sharing and roaming arrangements: the terms and conditions of such arrangements are critical, as are the means by which they are enforced. Shaw submits that both services should be provided by the wireless incumbents under tariffs, on the same rating principles currently applied to wireline essential services, i.e., incremental costs plus a 15-percent mark-up. Shaw recommends that these services be provided at essential facilities rates for a period of five years, after which these rates would be phased out pursuant to a sunset clause.

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<sup>19</sup> TPR, at page 5-12.

<sup>20</sup> TPR, Recommendations 5-5 and 5-6, and at page 5-13. A second report prepared for the Canadian Wireless Telecommunications Association by Wall Communications Inc. reinforces many of the TPR's findings with respect to tower-sharing. Although it questions the methodology and depth of research undertaken by the TPR with respect to tower sharing, in particular, and questions whether this is in fact a significant issue in the industry, ultimately this report concludes that the TPR's recommendations may assist in reducing barriers to entry and may ensure consistency in the regulatory approach to essential facilities. See Wall Communications Inc., "An Examination of Issues Raised in the Telecommunications Policy Review Panel's March 2006 Report Regarding the Canadian Mobile Wireless Service Industry," Prepared for the CWTA (29 September 2006) (the "Wall Review of the TPR"), at page 29.

## Definition of service areas

60. In the Consultation, Industry Canada proposes using a mix of Tier 2, Tier 3 and Tier 4 service areas for licensing of the AWS spectrum. Industry Canada noted that AWS is amenable to both local and larger regional service areas.<sup>21</sup>
61. Shaw considers the definition of service area tiers and specifically the number of geographic licence service areas or tiers to be of central importance. In the past, Industry Canada (and its predecessors) has licensed spectrum on a national basis. To continue such a practice would oblige a regional carrier like Shaw to bid, either individually or in a partnership, for a national wireless licence. Shaw considers such an approach to be unworkable and as introducing considerable uncertainty and greater risk into any potential entry into the market.
62. The chances of finding a competitor willing to assume the risks of entering the market as a national carrier are slim. As such, the government's efforts are better directed at encouraging strong regional players who have a demonstrated history of success and innovation and who show strong potential for eventual evolution into successful competitors at the national level. By licensing the AWS spectrum in connection with Tier 2 service areas, the likelihood of new entry is only enhanced, as is the likelihood of longer-term success.
63. Shaw is of the view that Tier 2 service areas are most appropriate in respect of the AWS spectrum. These service areas reflect 8 provincial and 6 large regional service areas. In particular, Shaw's interests focus on the Tier 2 service areas represented by the provinces of Alberta and British Columbia, which cover its serving areas in Western Canada. Shaw is primarily motivated by the prospect of enhancing its position as a regional player and intends to focus upon its current operating territory at the outset. As opposed to issuing national licences to new carriers and forcing them to introduce services across the entire country upon entering the market, Shaw considers it advisable to use Tier 2 service areas,

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<sup>21</sup> See Sections 4.2.1 and 4.2.2.

as this structure will enable new competitors to strengthen their respective regional positions prior to or rather than being required to make the prohibitive investments required to establish oneself as a national carrier. This licensing process, and the resulting strengthening of regional communications companies, will also benefit consumers and business users, by providing them with a viable alternative to the incumbents and by enhancing competition in the market.

### **Bid Payment**

64. The Consultation seeks comment on the opening bids and pre-auction deposits for AWS licences. While Shaw is not concerned regarding these elements of the auction framework proposed by the Department, it is concerned with the Department's proposal for bid payment, in particular the requirement to make payment for the entire amount of the bid within 30 days of the auction's close.
  
65. As outlined above, the investments required to enter the wireless market on a facilities basis are substantial, and by no means limited to the cost of spectrum. Moreover, it is unlikely that a successful bidder will be in a position to deploy its network for at least a year following the auction. In this context, the requirement to make the entire capital expenditure in relation to spectrum so soon after auction and before there is any prospect of beginning to recover its capital investment through wireless revenues may present a significant additional barrier to new entry. Previous entrants into the Canadian mobile wireless market, which obtained spectrum pursuant to a competitive process, paid for that spectrum through licence fees, which were calibrated based on the spectrum actually being deployed by them. In Shaw's submission, the Department should consider a structure for bid payments that would mirror these payments, or at the very least, reflect in partial measure the need for new entrants to generate cash flow to help fund their substantial capital investments. One mechanism that might be considered would be a partial payment within 30 days of the auction close with further payments becoming due at the time of geographic rollout of the network.

## Conclusion

66. The availability of additional spectrum in the 2 GHz frequency band represents a one-time opportunity to enhance the adoption of next-generation mobile wireless services by Canadians and Canadian businesses, regain Canada's leadership position in the mobile wireless industry, and increase the productivity of the Canadian economy. This opportunity would be best realized through the facilitation of entry into the market by new facilities-based carriers. This entry will not result from an auction and licensing process designed solely to attract the highest bid, or from an auction that places this valuable spectrum into the hands of bidders regardless of their incentive to innovate or provide greater choice to consumers. If it is to be successful in attracting entry, the licensing framework established by the Department must embrace active measures to foster new entry and enhance competition.
67. Industry Canada must therefore take advantage of the present opportunity to further the government's policy objective of enhancing competition – and facilities-based competition in particular – and to increase reliance on market forces. In Shaw's view, the risk of further, irreversible concentration of the spectrum among the wireless incumbents far outweighs any risks associated with facilitating market entry by new competitors.
68. In light of these considerations, Shaw respectfully submits the Minister of Industry should exercise his licensing power in a manner that best serves the public interest, by setting aside 50 MHz of spectrum in the AWS band for new entrants and taking measures to mandate roaming and tower sharing. Only such a policy will ensure market forces can be successful in delivering tangible benefits to Canadians.