



Canadian Telecommunications: A Wireless Future

***Recommendations to strengthen Canada's
Telecommunications Policy***

Submission by the

CWTA
to the

Telecommunications Review Panel,

Industry Canada

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For further information about this submission, please contact:

Kasia Majewski
 Director, Government Affairs
 CWTA
 130 Albert St, Suite 1110
 Ottawa, ON
 K1P 5G4
 Tel: (613) 233-4888 x 102

Executive Summary

Wireless technologies will form an integral part of the future telecommunications landscape. Mobile phones represent nearly 50% of all connections to the PSTN and generate one-quarter of all telecommunications revenue in Canada. More than one in two Canadians has a mobile phone, and the number of subscribers using wireless services continues to grow at more than 10% a year. As they innovate and develop, wireless products and services will transform Canadian society, enabling new ways of collaborating, communicating and cooperating both in our personal and professional lives. Fundamentally, wireless technologies will reshape the future economy, enhancing our standard of living and driving productivity.

In the face of this future transformation, Canada's telecommunications regime should become increasingly flexible. Given that it cannot predict technology, policy must facilitate innovation by promoting growth and supporting technological change in response to customer demand. Such a policy is technologically neutral: it accepts market failure, rather than pre-emptively legislating in an effort to anticipate technological change and it concentrates on the main policy goal, namely ensuring Canadians can benefit from world-class communications services.

The CWTA believes Canadian telecommunications policy must achieve the following four objectives in order to facilitate innovation in the wireless sector:

1) Take a "holistic" approach ...

Recognising the value of wireless technologies as productivity enhancing, as important communications tools, and as technologies able to meet social objectives, governments at all levels must work to take a holistic view of the fees and costs faced by Canada's wireless service providers. Wireless providers face a variety of fees and levies, not only at spectrum auction, but in association with new policy initiatives from various levels of government. In a highly competitive market, where all costs are



eventually reflected in customer prices, policy must remain cognizant of market realities and the cumulative effect of government decisions.

2) Commit to “smart” regulation...

In keeping with the federal ‘smart regulation’ initiative, there must be a reduction by government of the regulatory burden imposed on wireless carriers, through greater coordination between regulatory bodies. Currently, the sector is in the position of dealing with two regulatory agencies at the federal level: Industry Canada and the CRTC. In addition, especially in the area of social regulation, varieties of other federal, as well as provincial government bodies often become involved. Not only does this increase the cost, and create unnecessary regulatory overlap for providers; it significantly delays the rollout of the new and innovative services Canadians want.

3) An efficient spectrum allocation process...

Over the last several years, the government of Canada has done a good job of improving the spectrum licensing and allocation process to create a system that largely works today. The government should strive for the continued improvement in efficiency and timeliness of the spectrum allocation and licensing process. Spectrum should not be withheld, but should be released in a timely fashion, recognising the needs of the industry to introduce innovative services requiring greater bandwidth.

Improvements are also needed to the allocation process itself. Successful bidders are required to submit payment immediately at the conclusion of the auction, yet access to the spectrum is delayed for an average of four to twelve months until the qualification process concludes and the licences are issued. This runs contrary to one of the key reasons for moving to spectrum auctions : namely, to accelerate the pace of spectrum utilization. To speed the process, CWTA suggests that the ownership and control determination take place in advance of the auction. We further recommend that provisional winners only be required to pay 50% of the outstanding high bids



within 30 days of the close of the auction, with the remaining 50% paid at the completion of the allocation process.

4) Set Fees at appropriate economic levels...

The reduction of mobile spectrum licence fees to appropriate economic levels must continue. The goal of spectrum fees should not be to collect economic rents, but to administer the fair allocation of a valuable public resource. CWTA members contribute to Canadian society by turning this resource into a valued service, and as employers, who contribute to such funds as the income tax, EI and CPP. As such, it is not appropriate to utilise spectrum fees to fund initiatives apart from expenses related to the cost of spectrum allocation and auction activities.



Introduction

The Canadian Wireless Telecommunications Association (CWTA) is pleased to provide comments to the Telecommunications Policy Review Panel in response to its consultation paper.

The CWTA is the industry authority on wireless issues, developments and trends in Canada. It represents cellular, personal communications service (PCS), paging, mobile radio, fixed wireless and mobile satellite carriers as well as companies that develop and produce products and services for the industry.¹

To provide value for the review panel, the CWTA will limit its response to its area of expertise, by addressing only the specific questions pertaining to the wireless industry.²

General Comments

1. The CWTA believes wireless should not be simply an adjunct when considering Canadian telecommunications policy. Today mobile phones represent nearly 50% of all connections to the PSTN and generate one-quarter of all telecommunications revenue in Canada, while the projected growth rates will see them exceed wireline connections in the near future. The equivalent of more than one in two Canadians has a mobile phone, and the number of subscribers continues to grow at more than 10 per cent a year. Wireless services have fundamentally changed the way people live, work, and play.

¹ More information on the CWTA and its members can be found on the association's web site at: <http://www.cwta.ca>.

² Please note: the views of SaskTel Mobility are not represented in this submission as they have chosen to have their views presented in a separate submission



CWTA submits that this is not only a result of the utility of mobility, but also a result of good public policy decisions that placed power in the hands of customers.

2. The CWTA believes that to facilitate innovation in telecommunications, the government must avoid trying to prescribe the form that innovation takes. Rather, government policy can help by establishing an environment that frees up more resources to dedicate to investment in innovation.
3. Currently, the wireless sector faces many regulatory challenges. To build a progressive telecommunications policy, the CWTA would recommend a focus on the following:
 - o ensuring that governments at all levels take a holistic view of the fees and costs faced by Canada's wireless service providers
 - o reduction by government of the regulatory burden imposed on wireless carriers
 - o the continued improvement of the efficiency and timeliness of the spectrum allocation and licensing process
 - o reducing mobile spectrum licence fees to appropriate economic levels.

Responses to Specific Questions

A.1 Comment on the technological developments described above and provide your views on how telecommunications and ICT will change over the next 10 years.

4. In the wireless sector, the next ten years will be marked by continued innovation to meet customer demand for new products and services. The CWTA believes that developments in wireless can and will fundamentally change how Canadians interact with their environment – whether it is through secure mobile payments that obviate the need for carrying cash and multiple credit cards, or through the automated home, that interacts with users via their mobile device. Apart from convenience enhancing customer technologies, the growth of mobile commerce also offers many productivity enhancing applications and services for business.
5. Working Party 8F³ of the International Telecommunications Union – Radio's Study Group 8, along with other groups, is currently studying the ten-to-fifteen year trends in wireless services and market characteristics. The work has not been completed, but some of it so far predicts a raft of other, productivity and convenience-enhancing wireless technologies.⁴
6. For example, the Working Party predicts that by 2010, handsets will have specialized readers to identify items tagged with barcodes, radio frequency identification (RFID) or other identifiers and products, and will contain printed handset-readable information in multiple formats.

³ Within the Radiocommunication Sector of the International Telecommunications Union, Study Group 8 is responsible for all technical aspects of mobile wireless radio systems on a global basis, Working Party 8F is responsible for the overall radio system aspects of IMT-2000 and beyond. International Mobile Telecommunications-2000 (IMT-2000), also known as the Third Generation Mobile Systems, fulfils the goal of making anywhere, anytime communications a reality and provides a framework for world-wide wireless access.

⁴ See ITU WP8F, World Mobile Telecommunications Market Forecast, under development.

7. These capabilities will be used for accessing Web information about products and locations, and for comparison shopping between various real-world and online outlets. They will be used in conjunction with geo-coding (GeoURLs), which add location information to web information .
8. Looking beyond RFID, by 2020, sensor nodes together with miniaturization made possible through nanotechnology will enable both living and inanimate objects to be tagged, furthering allowing for a seamless flow of information and driving use and sales of sensor networks. While such developments clearly hold promise in enhancing human health and safety, they will also enhance the need for industry to continue to take a proactive approach to preserving customers' privacy.
9. Location information will become more sophisticated. Wireless beacons may provide not only location but identifying contextual information about an object or place. Current systems such as the Global Positioning System (GPS) and Galileo are expected to reach greater levels of accuracy, for example: general accuracy around 1 metre; near field wireless or RFID tags, a few centimetres; and in 2.5G or 3G network-based systems such as triangulation, tenths to hundredths of a metre accuracy.
10. On the corporate side, corporate blogs and mobile instant messaging will vastly improve worker communication. Supply chain management will become more efficient as corporations are able to access diverse corporate data bases remotely. In addition, mobile technologies like virtual private networks (VPNs) or M2M⁵ services will enable employees to effectively manage their personal life from a remote work location, leading to a better work-life balance and more flexible working hours.

⁵ M2M involves enabling machines, including wireless devices, appliances and other, the ability to share information with back-office control and data base systems and with the people that use these. Stands for: machine-to-machine, machine-to-man, man-to-machine, machine-to-mobile, and mobile-to-machine communication.

A.2 Comment on the potential for different networks (i.e., wireline telephone and cable networks, terrestrial wireless, satellite and hybrid networks) to carry existing and new ICT applications. Provide any relevant information on the infrastructure costs, bandwidth, security, reliability, and other features of such networks. Comment on the potential for different networks (i.e., wireline telephone and cable networks, terrestrial wireless, satellite and hybrid networks) to carry existing and new ICT applications. Provide any relevant information on the infrastructure costs, bandwidth, security, reliability, and other features of such networks.

11. In the telecommunications sector, new services and applications are increasingly wireless. For example, enhancements and evolution of existing wireless technologies/services such as cellular, PCS, ESMR and the realization of new technologies such as Wireless Fidelity (WiFi), WiMAX⁶, ITS⁷, multi-media messaging (MMS), short messaging service (SMS) and MobileTV, have the potential to deliver multimedia services over wireless networks. The advances in wireless technology together with the completion of the PCS, Fixed Wireless Access (24/38 GHZ) and 2.3/3.5 GHz spectrum auctions, means that rollout of these services by multiple wireless service providers can begin. Over time, however, it must be recognised that existing and new services will require increased bandwidth, necessitating improvements to the spectrum allocation and licensing process. Further, as the capabilities and bandwidth of “last mile” wireless networks advance, the capacity of backhaul and transport networks must keep pace. Fixed wireless links, particularly in the microwave bands, will continue to play a key role in these networks, accordingly adequate spectrum must also be made available for fixed links.

⁶ WiMAX stands for Worldwide Interoperability for Microwave Access. WiMAX is a technology based on the IEEE 802.16 and ETSI HiperMAN wireless MAN standards allows for last mile wireless broadband access as an alternative to cable and DSL.

⁷ An electronic communications network that links the trading floors of seven registered stock exchanges

12. To address these important issues, the CWTA and its individual members are responding to the Industry Canada Gazette Notice DGTP-001-05, *Consultation on a Renewed Spectrum Policy Framework for Canada and Continued Advancements in Spectrum Management*. Many of our detailed recommendations will be found in the response to this Gazette Notice. The CWTA would like to commend the Minister of Industry for removing the spectrum cap for mobile wireless spectrum, and looks forward to the Department continuing this trend of responding to industry and customer needs.
13. Indeed, as new services open the market to potential greater competition, and necessitate new and greater bandwidths, it is crucial that spectrum licence fees continue to be reduced to appropriate economic levels. The goal of spectrum fees should not be to collect economic rents, but to administer the fair allocation of a valuable public resource. CWTA members contribute to Canadian society by turning this resource into a valued service, and as employers, who contribute not only through income and corporate taxes, but through payments to such funds as the EI and CPP. As such, it is not appropriate to utilise spectrum fees to fund initiatives over and beyond the cost of spectrum allocation.

A.5 Is the Canadian competitive environment in telecommunications likely to evolve into a form of duopoly (i.e., incumbent local exchange carriers (ILECs) versus cable companies)? If so, what would be the implications for the telecommunications and ICT markets? What would be the implications for the regulatory framework? Is vigorous inter-regional competition by ILECs and cable companies likely? Please explain the basis for your views.

14. The Canadian competitive environment in telecommunications is unlikely to evolve into a duopoly. As mentioned earlier, new services and applications are increasingly wireless. These technologies include WiFi, WiMAX, ITS, MMS, SMS and mobile TV. These new services will provide competitive choices for Canadian customers for both voice and broadband data services. Such developments are also attracting new entrants to the wireless sector, further increasing customer choice. For example, during the recent 2.3/3.5 GHz spectrum auction, thirty-two different organizations obtained spectrum with a minimum of three different entities in each region. Therefore, new developments in wireless technology coupled with the wireless industry's competitive landscape will provide options outside of ILECs and cable companies.

A.7 Assuming a "one pipe, multiple applications" environment does evolve, describe the effect of this environment on the market position of existing service providers (e.g., ILECs, cable companies, wireless service providers, Internet Service Providers, etcetera) and any new entrants. Provide market share projections, if possible.

15. If the one pipe, multiple applications environment means one facility, multiple service providers, CWTA does not support this concept as a desirable or likely outcome of the future of telecom in Canada. There are already 3 wireless pipes, one operated by each of the wireless carriers in Canada reaching almost 94% of Canadians.



A.10 Comment on the development of wireless services in Canada over the next 10 years and the implications for Canadian productivity, competitiveness and social benefits.

16. The wireless industry is a highly competitive industry that continues to innovate in response to customer demand for new products and services. Indeed, in the telecommunications sector, new services and applications are increasingly wireless. For example, new technologies including WiFi, WiMAX, RFID, ITS, MMS, SMS and Mobile-TV, have the potential to deliver new and innovative services over wireless networks. These services both increase productivity and produce social benefits. As Minister Emerson noted in a recent speech, wireless technologies have fundamentally transformed business operations:

Think of the enabling nature of wireless telephony. Everybody does business today in a different way than they did 20 years ago. How did we ever conduct business at a time when we could not contact our suppliers, our customers or our own personnel, or download today's stock quotes or business news with just a click of a cell phone?

How would we manage today's international supply chains without the convenience of wireless telephony? Competitiveness requires fast response. It requires easy access to decision makers. It requires the ability to download information on a hand-held device like a BlackBerry. Indeed, my BlackBerry was the final nail in the coffin for my "in basket" and wiped out the need for weekends at the office getting caught up on paperwork. Communications became largely real time, decisions were made more quickly, and I was liberated to be pretty much wherever I wanted to be and still not neglect the core business.⁸

17. New wireless technologies can meet the government of Canada's goals to provide essential social programs and services to Canadians in rural and/or remote communities by providing a lower cost and easier-to-deploy alternative to traditional wireline infrastructure.

⁸Excerpt from an address made by the Hon. David Emerson, Minister of Industry, June 8, 2004 to the Canadian Wireless Telecommunications Association. See: www.ic.gc.ca



A.11 Please add any comments on the evolution of telecommunications networks or the telecommunications industry structure over the next 10 years that the Panel should take into account in developing its recommendations.

18. CWTA recommends that caution be exercised in forecasting the evolution of the telecommunications sector over the next ten years. Telecommunications is marked by its incredible pace of change. Over the last decade, while the wireless telecommunications sector – driven by sound fundamentals – experienced constant growth, the “internet bubble” showed that often vaunted technologies fail to live up to their promises, while inconspicuous ones flourished. As customer demand and technology drive the direction of the entire industry, it is nearly impossible to gauge what will happen over the next ten years. As such, the Panel should use a technologically neutral approach in creating Canada’s telecommunications policy and concentrate on its main policy goals, namely ensuring Canadians can benefit from world-class communications services.

Economic Regulation

B.11 Are changes required to the present regulatory regime to provide economic incentives for ILECs, cable companies wireless service providers and others to expand, upgrade and maintain the capabilities of Canada's basic access networks? If so, what specific changes should be introduced?

19. In urban areas, mobile wireless service providers do not require any incentives due to regulatory forbearance by the CRTC and a competitive industry structure. While Industry Canada has gone part way with its population-based licensing regime, changes are, however, required to the present regulatory regime to provide wireless carriers with the economic incentives to expand, upgrade and maintain their basic access networks in rural and remote areas .

20. CWTA members contribute significant amounts to the CRTC Contribution Regime to fund local phone service in high-cost serving areas, but cannot access these funds without taking on CLEC obligations. While some CWTA members would prefer to eliminate the contribution regime entirely others would prefer to have access to these funds. The CWTA submits that accessibility for high cost rural and remote areas would be better served by, as perhaps one option among others, a more flexible, approach to contribution fund access that would accommodate wireless providers.

21. Another issue relates to Industry Canada's spectrum policy in rural and remote areas. When Industry Canada harmonized the cellular/PCS licensing regime in 2004, they maintained Radio Systems Policy - 019, *Policy for the Provision of Cellular Services by New Parties* (RP-019) unchanged, despite its potential distorting effects on the market. RP-019 allows potential new service providers to approach the department directly and to gain access to cellular spectrum within a geographic area that is either not being served by any cellular service provider or that is being served by only one cellular service provider, even when

such spectrum had already been licensed, and the license fees paid, by an existing carrier.

22. Unlike the previous cellular/PCS licensing regime, under which carriers paid licence fees only for that cellular/PCS spectrum which was actually in use, the new harmonized licensing regime is based on geographic spectrum licensing, such that carriers pay for all cellular spectrum they hold, regardless of whether or not it is in use throughout the country.
23. In CWTA's view, it is incongruous for new entrants to be able to effectively "expropriate" a licence that is subject to ongoing payments. It is also difficult to imagine how a licensee could fairly negotiate the terms of a licence transfer or division with a third-party, when that same third-party has the option to request direct access to the spectrum from Industry Canada. This Policy should have been revoked at the same time as the old licensing regime, for which it was designed.

B.13 Are changes required to the contribution regime or other aspects of the regulatory framework that subsidize delivery of telecommunications services in high cost areas?

24. In rural and remote areas – which are often high cost areas - new wireless technological developments have the potential to increase the provision of both basic and advanced telecommunications services to Canadians. For example new 3G services, and WiFi (802.11) and WiMAX (802.16) technologies can provide services that are easier to deploy to rural and remote areas and should be considered on an equal basis with wireline for any future requirements .
25. But, as noted in the response to question B 11, wireless companies currently pay for spectrum in rural and remote areas of Canada even if it is not being used rather than receiving a rebate for using spectrum in these areas in order to extend service. Further, rather than offering economic incentives for



development of wireless networks in such areas, direct government intervention in these markets has had distorting effects. In CWTA's view, there is a need for increased economic incentives for all carriers to encourage expansion, upgrading and maintenance of their basic access networks in rural and remote areas if universal service is still the goal. The CWTA further submits that whether service providers use wireline or wireless technologies to deliver service to rural or underserved areas, the total economic incentives should be the same, considering the sum of direct subsidies, tax incentives and spectrum fees adjustments.

Technical Regulation

Rights-of-way, Support Structures and Inside Wire

B.16 Should any other changes be made to the regulatory framework governing access to rights-of-way and support structures.

26. Yes. While this is not addressed in the consultation paper, the issue of radiocommunication antennas is a key concern for the wireless industry.
27. The radiocommunication antenna, its associated radio equipment and its structure is a fundamental piece of infrastructure enabling wireless communications. The challenge, as the demand among Canadians for wireless services grows, is to allow for growth while accommodating the land use concerns of communities. CWTA members have built a history of consulting and cooperating with municipalities and Land Use Authorities (LUAs) to address their concerns and will continue to do so in the future.
28. Recently, the CWTA has engaged in extensive consultations with the government of Canada on the issue of support structures, under the auspices of the National Antenna Tower Policy Review. This consultation has now been completed, with the tabling of the Report on the National Antenna Tower Policy, by Professor Townsend. The CWTA agrees strongly with recommendation 1 of

the Report, that the government of Canada should retain its authority over the placement of radiocommunication antennas and their support structures:

Recommendation 1: That the legislative authority to regulate the siting of radiocommunication antennas and their supporting structures should remain exclusively with the Government of Canada.⁹

29. Further, the CWTA believes that this authority should be retained in Industry Canada, which currently authorizes the location of radiocommunication facilities, as provided in the *Radiocommunication Act*¹⁰. Central coordination of tower development is important to facilitate the rollout of wireless technology across Canada and requires the coordination of a government department.
30. In some cases, Industry Canada will not allow the building of a tower to go forward, even though the requirements for consultation with the community, and LUAs, have been demonstrated to have been met by the carrier. The CWTA would urge the department to act on its legislative authority once it is clear that the required criteria are met.
31. To that end, Industry Canada could play a more proactive role where wireless carriers have difficulty gaining access to certain types of properties. The wireless industry has a long history of negotiating and reaching workable terms with many different types landholders. In very rare instances the industry has faced determined obstruction, often with what seems to be the sole purpose of leveraging significant payments from the wireless carriers. Where such instances affect access to public property, Industry Canada should be able to provide support.
32. The CWTA would also urge the Department, having adopted Safety Code 6 as its standard, to take a more proactive role, in coordination with Health Canada,

⁹ Professor Townsend, *Report on: the National Antenna Tower Policy Review*, December 6, 2004.

¹⁰ *Radiocommunication Act R.S., 1985, c. R-2, s. 1; 1989, c. 17, s. 2. section.5(1).*



in acting as an expert and instructive source of factual and authoritative information for Canadians concerning the effects of radio frequency (RF) emissions on humans.

Network Interconnection and Access to Facilities of Dominant Carriers

B.18 Is CISC an efficient mechanism for developing interconnection standards? Should any changes be made to CISC's mandate and process?

33. While the CISC can play an important role, it is not always the only vehicle for developing standards. The CWTA notes that the wireless industry has a strong record of leadership on industry self-regulation. On E911, for example, the wireless industry has cooperated successfully outside the CISC process to implement phase one E911 wireless service across Canada. Further, the industry voluntarily responded to Minister Emerson's call for the prompt implementation of wireless number portability.

Spectrum

B.19 What steps, if any, should be taken to enhance the effectiveness of Canada's participation in international spectrum and standards organizations?

34. Canada and Canadian society benefit on many fronts from harmonizing its spectrum use and standards with those of our trading partners when appropriate. The CWTA, through its members, has long supported Industry Canada's role in this area, and will continue to do so.

B.20 Given the inevitable implications for Canada, should the Federal Government and industry groups participate more in the United States' spectrum and standards policy and regulatory processes?

35. The CWTA itself closely monitors and occasionally participates in the proceedings of the US Federal Communications Commission (FCC), as well as in those of other jurisdictions.



36. In the case of working with the United States specifically, the CWTA encourages the government to continue cooperating with the FCC on spectrum and standards policy and processes. Given the clear benefit, both to customers and the industry, from harmonisation of policies in this area, Canada should always seek to work proactively with the US as far as possible to develop mutually beneficial spectrum and standards policy.
37. Efforts by Canadian federal officials and industry groups should be directed towards participation in multilateral originations (in which the US also participates) so that consensus can be reached in these fora. This approach would obviate the need for major subsequent bilateral negotiations between Canada and the US on spectrum, standards & regulatory matters. In addition, given the cost of intervening directly in the United States spectrum standards policy and regulatory processes, increased Canadian participation in such fora as CITELE¹¹, a telecom body of the Organisation of American States, where the US is also represented, is more cost-effective.
38. The wireless industry already participates in the work of CITELE and the ITU. This participation includes attending meetings around the world, and occasionally hosting meetings in Canada¹². These activities require significant financial commitments from industry to advance and promote Canada's international radio spectrum interests. CWTA would encourage the government to continue to make sufficient funds available for these activities. Indeed, Canadian companies would be able to participate more in such fora if some of their current licence fee payments could be credited to help defray the costs of participation.

¹¹ The Inter-American Telecommunications Commission

¹² For example, CWTA recently hosted a meeting of ITU-R WP8F, the group that has primary responsibility for the standards related to International Mobile Telecommunications. 250 delegates representing carriers, manufacturers and administrations from more than 25 countries attended the 10 day meeting.

39. Another avenue that may be valuable to begin greater dialogue on such issues would be through the Security and Prosperity Partnership (SPP) working groups. Already, the SPP Negotiating Group on ICT and Electronic Commerce is discussing common standards for recognising testing of telecommunications equipment, and has reached some agreements on spectrum use for emergency purposes.

B.21 Should regulation of spectrum, technical standards, interconnection, numbering and other technical matters be unified under a single regulatory authority? If so, which authority, and under what conditions?

40. Canada's wireless industry is unique in that it must report to two main regulators at the federal government level – Industry Canada and the CRTC. The challenge is not so much in dealing with two separate regulatory bodies, but rather that there is no formal linkage between the two groups' decisions. Both regulators have significant impact on the total fees and taxes the industry must pay to government. This is clearly illustrated by the \$50 million wireless carriers must now pay annually as part of the CRTC's contribution regime. This is in addition to the annual \$140 million paid to Industry Canada in licence fees.
41. The industry proposes that, in setting policy in the telecommunications sector, the government should build on its commitment to smart regulation. In its report, the External Advisory Committee on Smart Regulation recommended that:

Overarching regulatory policy frameworks should be developed that spell out the government's objectives in a sector or area of regulation. These frameworks would provide overall guidance to the various regulatory authorities and ensure that regulatory action is coherent and integrated.¹³

42. The Minister should establish policy and then allow the Commission to regulate according to the preset policies of the government. This would allow the

¹³ Recommendation 13. *Smart Regulation – A Regulatory Strategy for Canada*, External Advisory Committee on Smart Regulation, September 2004.



wireless industry to receive full consideration when two separate regulators are determining the financial obligations of the industry. It is then further essential that the two federal bodies coordinate their policy positions and regulatory decisions. In this context and as noted in the response to Question C10 below, it is the CWTA position that Industry Canada does an excellent job of managing Canada's spectrum and CWTA recommends that matters related to spectrum management continue to remain solely under the purview of Industry Canada.

Telecommunications Equipment

B.25 Should the regulatory framework for numbering be changed? If so, how and by whom should telephone numbers be administered?

43. The Canadian Numbering Administration Consortium Inc. (CNAC) is an independent, third party corporation owned and operated by the telecom industry which has administered Canada's numbering resources since 1999. The CNA (Canadian Number Administrator) provides numbering services to the Canadian telecommunications industry under contract to CNAC. The administration of Canadian numbering resources are under the regulatory oversight of the CRTC. CNA functions include central office code administration, the processing of applications for North American Numbering Plan (NANP) resources and other telecommunications numbering resources.
44. CNAC's annual budget is approximately \$1.8M (fully paid by the telecom industry, including wireless carriers). The wireless industry is satisfied by the role and functions provided currently by CNAC and does not recommend any change.
45. In the wireless industry, the specific issue of number portability, allowing a customer to retain the same telephone number when switching phones or providers, has recently emerged as an area of interest. Responding to the Minister of Industry's challenge, and to the needs of Canadian customers, the



industry has begun planning efforts to voluntarily implement wireless number portability in Canada. As this is a major undertaking, the CWTA has contracted Price Waterhouse Coopers to assist the industry in preparing a plan, to be completed in September 2005, with a view to implement number portability as soon as is technically feasible.

B.26 Over the next ten years, is there likely to be a new method of assigning addresses to telecommunications devices which would replace traditional numbering? If so, what might that method be, who should administer it, and how?

46. No, it is quite unlikely that the current system of telephone numbering will be replaced with an alternate mechanism over the next ten years. The current telephone numbering system will be supplemented by auto-diallers, voice controlled dialling, improved operator services, and Internet-based directories. But, telephone numbers based on decimal digits are used throughout the world. A change to a new addressing system, for instance one using 10 character strings of letters and numbers, would require global changes, substantial expense, and would provide few benefits.
47. Admittedly, the use of ten digit numbers to identify the desired destination of a telephone call reflects the technology of half a century ago and is hardly a user-friendly mechanism. Consequently, many users employ systems, such as auto diallers and voice-recognition-driven diallers, that provide a more convenient interface. Being able to dial one's answering service by saying "office voice mail" is far more user-friendly than dialling the ten digits number of one's voice mail system. It may well be the case that a person placing a telephone call twenty years from now would regard the use of a telephone number as quaint; a charming old-fashioned practice of dubious practical utility.
48. Number portability has made the North American Numbering Plan (NANP) a strange hybrid of physical addresses and symbolic pointers to physical addresses. Conventional telephone numbers still convey location information in

the area code and exchange prefix that is used to rate calls. But, the dialled telephone number often must be looked up in a database that supplies the real telephone number. Ultimately the numbering system may evolve to a situation in which the telephone numbers known to users are symbolic, like internet domain names, and must always be mapped into real telephone numbers. Similarly, the Internet community is developing a standard¹⁴ that permits an ITU-standard telephone number to be used as a domain name. Using this standard one can associate a variety of destinations, including fax numbers, mobile numbers, VoIP addresses, and email address, with a telephone number.

49. Historically the telephone, local area network, and the various internet addressing systems, all designed by industry and academics with little or no regulatory review, have worked well. Currently, the telephone and Internet Protocol version 4 (IPv4)¹⁵ numbering systems are threatened by number exhaust, as the number of telephone numbers needed begins to exceed number availability, with exhaust a far more pressing problem in the IPv4 world than in the telephone world. That exhaust is a sign of the success of these addressing systems, not of their failure.
50. Although the address space for the current version of the internet protocol (IPv4) is nearing exhaust, there is a replacement, IPv6; but the transition to IPv6 is going slowly. The Canadian government, in its roles as both a customer and a public educator should act to speed the transition to IPv6. Specifically, the government should make its own networks and applications IPv6 conformant and should urge industry to do the same. Direct regulatory intervention to speed the transition is unnecessary and might well be counterproductive.

¹⁴ See, Request for Comments: 2916 The Internet Society (2000) Network Working Group Category: Standards Track, E.164 number and DNS.

¹⁵ Internet Protocol version 4: the current version of internet protocol, used to number data packets, allowing for the transfer of data, whether voice or not, through the internet. Version 4 will be replaced by version 6, currently under development.



Social Regulation

B.30 What should be the roles of the CRTC, Industry Canada, the Competition Bureau and consumer protection agencies in dealing with consumer protection and other social regulation issues?

51. In the specific area of consumer regulation, the CWTA is concerned about the current practice of regulation by multiple bodies, which creates additional cost and unnecessary regulatory burden in service implementation and delivery. The implementation process for new services, for example, is often unduly lengthened by the fact a variety of bodies or agencies from different levels of government may each attach various and additional requirements to the service, even when another body has already considered the same issue or criteria.
52. By way of example, on any particular issue, a wireless carrier may have to deal with:
 - o Industry Canada
 - o CRTC
 - o The Privacy Commissioner
 - o Competition Bureau
 - o A provincial consumer affairs bureau
53. Industry Canada, the CRTC, the Competition Bureau and the provinces all have policies and make decisions and regulations related to various, overlapping, aspects of competition and consumer issues. The CRTC and the Privacy Commissioner have specific rules regarding privacy and the confidentiality of customer information. Both Industry Canada and the CRTC implement policies to promote telecommunications in rural and remote areas (pursuant to Section 7 of the *Telecommunications Act*).



54. The CWTA is *not* advocating for a single regulatory body to oversee the telecommunications and radiocommunications aspects of the industry. Rather, the CWTA has long advocated a holistic – or “smart regulation” - approach to the regulation of the industry. [Fairness dictates that the regulatory obligations established in the pursuit of government policy objectives cannot - and must not - be examined in isolation from other obligations. The entire “regulatory package”, meaning all obligations established by the government in pursuit of public policy objectives, must be examined in concert since the entire package is paid for by the wireless carrier and its subscribers.

Comment: Use text from other places

B.31 Are changes required to the regulatory approach to protection of privacy in relation to telecommunications services, as it is currently administered by the CRTC and the Privacy Commissioner?

55. The *Telecommunications Act* was passed almost 10 years prior to the federal privacy legislation (PIPEDA). The drafters of the *Telecommunications Act* included objectives related to privacy protection, which the CRTC has, to date, exercised. Today, many of these provisions have been superseded by the newer federal privacy legislation and the unique role of the CRTC in this area by the Office of the Federal Privacy Commissioner, who has been empowered to be the authority on privacy matters in Canada.

56. The CWTA believes that, as the CRTC has forborne from regulating the wireless industry, now with the advent of the Privacy Commissioner, the CRTC should equally have no involvement in regulating privacy-related issues in the wireless sector. Wireless carriers are already sufficiently regulated, with the Office of the Privacy Commissioner actively overseeing their privacy practices. The members of CWTA are therefore cognizant of and adhere to the legislative requirements respecting the privacy of both their customers and their employees and accept the administration of the Privacy Commissioner.

Regulatory Institutions

The Government Role in Telecommunications Markets

C.2 Should general competition law principles have a role in the regulation of the telecommunications sector? If so, to what extent should the provisions of the Competition Act apply and to what extent should sector specific regulation continue to be applied?

57. Yes, general competition principles have a role in the regulation of the telecommunications sector. Where specific sectors become sufficiently competitive, the role of the regulator ought to give way to a framework based on general competition law, as is true across the economy.

Policy making

C.4 How should policy-making powers be distributed among federal government institutions?

58. Canada's wireless industry is unique in that it must report to two main bodies at the federal government level – Industry Canada and the CRTC. The challenge is not so much in dealing with two separate regulatory bodies, but rather that there is no formal linkage between the two groups' decisions. Both regulators have significant impact on the total fees and taxes the industry must pay to government. This is clearly illustrated by the CWTA response to Question B21 above.
59. Currently, policy-making power is the purview of the Minister of Industry, not the CRTC. Clearly, this power should remain with the Minister. In addition, the industry proposes that, in keeping with the government's commitment to a smart regulation approach, there is a need for coordination between Industry Canada and the CRTC. In order for the wireless industry to receive full consideration when two separate regulators are determining the financial



obligations of the industry, it is essential that the two regulators recognize each other's impacts on the industry.

Rule-making

C.10 How should rule-making powers for the telecommunications sector be distributed among federal government institutions?

60. For Canadian wireless carriers, Industry Canada plays the predominant role in most aspects of spectrum management and regulation, including the related technical standards. The CRTC oversees matters related to interconnection, numbering and competitive access to the PSTN. The CWTA submits that this model works well. Industry Canada does an excellent job of managing Canada's spectrum and therefore CWTA recommends that matters related to spectrum management must continue to remain solely under the purview of Industry Canada.

The Implications of Convergence

C.22 Please provide comments on the nature and extent of convergence as a technological and industry trend and propose any changes to Canadian telecommunications regulatory framework that should be made to ensure this framework can cope adequately with technological changes.

61. The wireless industry in Canada experiences accelerated technological change and innovation in response to continued customer demand for new, multimedia services. Our customers increasingly demand (and use) their mobile device not only for voice communication but as an internet/emailing tool, as a camera, a personal organiser and an accessory that can be personalised through different ringtones or colours. On July 1, 2005, the industry launched multimedia messaging, which allows customers to send pictures along with their messages.



Canada's mobile wireless industry forecasts a continuing stream of more applications and service in the years ahead.

62. To facilitate such continued innovation, the wireless industry will continue to require greater access to spectrum. As such Industry Canada should continue to release spectrum in a timely and efficient manner, taking into consideration the needs of the industry.

Enhancing Regulatory Efficiency & Effectiveness

C.24 What steps, if any, should be taken to improve the efficiency and timeliness of CRTC and Industry Canada regulatory processes? Please identify specific measures which should apply to each type of regulatory process, such as tariff applications, carrier disputes, spectrum-related regulation, customer complaints, etc.

63. As noted above, (C.22) timely and efficient release of spectrum are crucial to the functioning of the wireless industry. Spectrum should not be withheld but rather, industry requirements and readiness – and customer demand for services - should be considered. Once spectrum is to be auctioned all stages of the licensing process should be conducted expeditiously, including the post-auction qualification process, which is often overly lengthy.
64. In each of the three Industry Canada spectrum auctions, the length of time for the qualification process to be completed has been unacceptably long despite the expectations of the Department for an “expeditious” process. In light of this experience, and given the expectation that delays in qualification will continue, the CWTA encourages the government to seek remedies to this situation.
65. The current qualification process is extremely problematic to the industry primarily, but not exclusively, because of the significant interest charges incurred by the auction winners on the monies borrowed in order to purchase



the licences.¹⁶ This interest must be paid while, at the same time, use of the spectrum is prohibited. Full payment is submitted, yet access to the spectrum is denied for an average of four to twelve months until the qualification process concludes and the licences are issued. The lengthy process also runs counter to sound spectrum management practices because it slows the speed at which the spectrum is made available and put to use - something with which the industry is also concerned. In fact, one of the key rationales for moving to spectrum auctions as an allocation process was to accelerate the pace at which spectrum is put into use.

66. To speed up the process, CWTA suggests that the ownership and control determination ought to take place in advance of the auction. Alternatively, the Department could dedicate more resources, including full-time legal counsel, to the post-auction determination process. The industry notes that the department is attempting to address this issue, but may require policy changes, such as those suggested here, in order to be fully effective. As an incentive to expeditiously complete the process, CWTA also recommends that provisional winners only be required to pay 50% of the outstanding high bids within 30 days of the close of the auction, with the remaining 50% paid at the completion of the determination process and the issuance of the spectrum licence. Further, carriers must re-file annually with the CRTC to renew their eligibility as Canadian carriers, and are also obliged to inform the Minister of any material change to their ownership and control status. CWTA would recommend that, rather than go through such a lengthy process, in the absence of any indication to the contrary, existing Canadian carriers should be automatically issued their licences.

¹⁶ A total of \$1.72 billion has been collected by Industry Canada through spectrum auctions. Of that, \$ 1.48 billion was collected for PCS spectrum



C.27 Would the outsourcing of specific tasks by the CRTC (e.g., alternative dispute resolution) or Industry Canada (e.g., spectrum monitoring and management) improve efficiency? If so, which tasks should be outsourced? How would the outsourced tasks be funded?

67. Industry Canada currently has a number of successful examples of working with industry and allowing external parties to perform certain functions previously retained by the Department. For example:
- Numerous standards documents are co-ordinated through the Radio Advisory Board of Canada
 - Equipment Certification is now performed by recognized Conformity Assessment Bodies
 - The Railway Association of Canada now manages spectrum on behalf of the railway industry, replacing 4900 discrete radio licences
 - The introduction of FRS and GMRS radios into the Canadian market were facilitated by industry groups that co-ordinated relocation of the incumbent licensees to different spectrum
 - Canadian Power and Sail Squadrons (CPS) conduct training, exams and issue Restricted Operator Certificates (Maritime).
68. The CWTA believes that such outsourcing can be an effective, efficient means of conducting the department's business. As these efficiencies are realized, CWTA would expect that the costs associated with spectrum management would go down and there would be a corresponding decrease in spectrum licence fees.

Canada's Connectivity Agenda

D.1 What is the current status of access to broadband and advanced ICTs in Canada? Is this situation likely to improve or deteriorate with the introduction of new technologies? Specifically what emerging technologies will increase or decrease the gap experienced by unserved and underserved communities, and in what time frame?

69. According to Industry Canada, broadband internet is available to eighty percent of Canadians.¹⁷ Through the Broadband for Rural and Northern Development (BRAND) pilot program, the government of Canada has worked to connect rural and remote communities to broadband. The CWTA would like to highlight the significant contribution new wireless technologies can make to furthering broadband development across Canada. For example cellular/PCS, WiFi (802.11), and WiMax (802.16) can provide services that are easier to deploy to rural and remote areas. New satellite broadband, launched by Telesat through Ka-band satellite, currently allows customers across Canada to receive high speed access at a reasonable cost.

D.2 Is government or regulatory intervention required to expand Canada's telecommunications network connectivity – or should this be left to the market? Given the level of competition in the broadband access market, as well as the fact that new access and IP technologies are reducing costs for consumers and improving the business case for service providers, is government or regulatory intervention still required?

70. Canada is one of the most connected nations in the world. According to the OECD, Canada places fourth in the world in terms of broadband penetration.¹⁸

¹⁷ BRAND Program. See <http://broadband.gc.ca/pub/faqs/faqscomplete.html>

¹⁸ OECD, Broadband statistics, December 2004.
See: http://www.oecd.org/document/60/0,2340,en_2649_34225_2496764_1_1_1_1.00.html



But as Industry Minister David Emerson recently stated in a speech to the CWTA, "...where we are is not where we have to be. We need to be the smartest deployer and user of technology among major economies of the world." The Minister further noted that "without high-speed Internet connections, vast numbers of people cannot hope to participate in the global or even the national economy."

71. For the most part, market forces will ensure high-speed networks are available in urban areas of Canada. However, it must be recognized that in rural and remote parts of the country economic realities will impact the construction and maintenance of high-bandwidth facilities, regardless of emerging technologies. To ensure the availability of modern high-speed networks for all Canadians from one end of the country to the other will require a concerted, collaborative effort on the part of all stakeholders – governments, the private sector and communities themselves.

Making the Most of Technology

E.2 Does the relationship between ICT and productivity justify a Government policy supporting increased ICT investment? If so, what government measures would be appropriate?

72. Numerous studies show that productivity and competitiveness in today's economy is driven by investment in, and particularly use of, ICT. Recently, published work from key federal government departments underscores the link between ICT investment and growth in productivity and competitiveness. Industry Canada, for example, has concluded that:

The importance of ICT as an enabler of broad economic development has surpassed that of ICT as an economic sector in its own right....In this regard, it is important to facilitate ICT technology development and lever ICT skills capacity at the interface between the ICT sector and other sectors of the economy.¹⁹

¹⁹ Industry Canada, Strategies web-site.

73. Similarly, a recent report to the U.S. Chamber of Commerce stated that, “telecommunications and other information technology investments have been the principal drivers behind the extraordinary doubling of productivity growth of U.S. workers that has taken place since 1995 and that investments in information technology (ICT) may account for as much as three-fourths of overall labour productivity growth since 1995.”²⁰
74. *Canada's Innovation Strategy* underscores the need for Canada to increase its productivity in order to increase its standard of living. It portrays the issue starkly, stating, “[m]ost of Canada's standard of living shortfall with respect to the U.S. is due to our markedly lower level of productivity,”²¹ and more importantly for the present purposes notes that, “[m]uch of Canada's overall productivity gap with the U.S. is due to differences in the size and productivity growth of the information and communications technologies (ICT) sector.”²²
75. In short, the body of research linking ICT investment and productivity is substantive and well documented.
76. Most recently, Finance Minister Ralph Goodale has indicated that boosting the productivity of the Canadian economy is a major challenge for the 21st Century. In particular, that Canada needs to invest in the major national “drivers” of productivity - our physical capital, human capital and innovation. He also emphasized that the federal government “must ensure the economic and fiscal climate allows enterprise to flourish.”²³

²⁰ [Sending the Right Signals: Promoting Competition Through Telecommunications Reform, A Report to the U.S. Chamber of Commerce](#) by Thomas W. Hazlett, Coleman Bazelon, John Rutledge, Deborah Allen Hewitt, September 2004, pg. 108

²¹ Canada's Innovation Strategy, *Achieving Excellence: Investing in People, Knowledge and Innovation*, February 2002, page 14.

²² *Ibid.*, page 15.

²³ Notes for Remarks by the Honourable Ralph Goodale, Minister of Finance, to the Economic Club of Toronto, 21 June 2005.



77. The CWTA supports this national agenda - government policy should, wherever possible, encourage the growth of Canada's ICT sector. We hope to work closely together with the business community and governments to determine exactly what we each need to do to address productivity growth in order to give this country the most innovative, efficient and competitive economy in the world.

Investment by Telecommunications and other ICT Companies

E.9 The Federal Government's research and development tax credit program has been an important element in the Government's efforts to encourage research and development in the ICT industry. How well is this program working? Should changes be made to this or other tax measures to improve the competitiveness of Canada's ICT research and development capabilities?

78. Through continued research and innovation, wireless products and technologies continue to contribute to Canada's competitiveness. Wireless technologies have revolutionized business processes and increased productivity by allowing employees to more effectively communicate and multitask, as well as allowing for more flexible work schedules and locations. As even the Industry Minister recounted recently, the Blackberry has eliminated the need for working weekends at the office in order to clear out the inbox, fundamentally transforming the world of work.²⁴ In Canada, wireless carriers spend a minimum of 2 per cent of gross revenue towards research and development activities, in fact, the wireless industry invests substantial greater amounts in research and development activities.
79. Most of the wireless carriers have invested in Canadian universities for research. TELUS has endowed chairs in wireless research. Bell Mobility through the Bell University Laboratories (BUL) are investing significant money

²⁴ See The Honourable David L. Emerson, Minister of Industry, Speech given to the Canadian Wireless Telecommunications Association Conference, Ottawa, Ontario, June 8, 2005 at www.ic.gc.ca



in university research. BUL invests over \$6M a year in research across Canada in various technologies as well as in the social sciences. BUL also encourage inter-disciplinary research between faculties such as medical, law and computer science. Aliant Mobility has announced \$500K/year research through Aliant Wireless Innovation Fund to fund research through out the Atlantic provinces.

80. All three major carriers are members of International Institute of Telecommunications (IIT) in Montreal and work jointly in pre-competitive research. The CWTA is a partner of the IIT.
81. In western Canada, TELUS plays a major role in TR Labs. TR Labs have research facilities in four western provinces.
82. In Ontario, Rogers has worked closely with the University of Toronto to support the Edward Rogers Sr. Department of Computer and Electrical Engineering, a department that consistently ranks in the top 10 in the world in research in communications, computing and related areas. In addition, a \$3 million donation to university has seen the foundation of the Rogers AT&T Wireless Communications Laboratories, a collaborative research institute that studies key developments in the wireless field, such as wave electronics.



Conclusion

The future of telecommunications, and of ICT, is wireless. Innovative wireless technologies show unique potential to meet the very important social goals of Canadians: of connecting rural and remote communications, of providing tele-health or tele-education, of creating a better-work life balance, and overall, creating a more prosperous, more productive Canada. To realise the potential of wireless, the CWTA submits that the Telecommunications Policy Review panel must look to streamlining the current telecommunications regime. This would create a 'smarter' more flexible approach that combines strong departmental leadership and expertise by Industry Canada on key areas (spectrum) with greater communication between the CRTC and other key bodies – the Privacy Commissioner, provincial authorities – to decrease the regulatory overlap that stifles competition and creativity. In addition, telecommunications policy must see a decrease in rates and fees in key areas, such as spectrum and adopt a 'holistic' approach whereby all fees are considered.

The CWTA is pleased to have had the opportunity to address the issues raised in the consultation paper and looks forward to participating in the reply and consultation phases of the process.