Response to Industry Canada Paper Entitled:

Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum

as published in the
Canada Gazette, Part I (SMSE-018-10),
on November 30, 2010.

Attention: Manager, Mobile Technology and Services, DGEPS,
Industry Canada
300 Slater Street
Ottawa, Ontario K1A 0C8

February 28, 2011

Prepared by
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(CACTUS)

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EXECUTIVE SUMMARY

Radio spectrum is a scarce public resource. Given that:

- the 700 MHz band was previously devoted to broadcasting, and was subject to monitoring and scrutiny to ensure that public benefit accrued to the assignment of spectrum for use by commercial entities (via the CRTC licence application process), and

- given spectrum auctions generally involve assigning the same scarce public resource to the highest bidder for commercial gain,

our main recommendations are to reserve some of the spectrum from auction for non-emergency public use, and that some of the proceeds of the auction be used to promote digital literacy, so that all Canadians can participate equally in the opportunities of the evolving digital economy.

We make six key recommendations:

- Reserve from auction a band of no less than 2 contiguous 5 MHz in the 700 MHz band for Public Innovation.

- Set aside one-quarter of the available spectrum for carriers with less than 5% of market share to enable the development of more carriers and more consumer choice.

- Set a lease term of no more than 10 years on the spectrum to be auctioned, and pay a portion of the lease yearly.

- Establish usage-based criteria for the auction, so that would-be spectrum users must make both a business case that clearly demonstrates the public-service value of the services that will be offered with the spectrum, as well as meet a minimum dollar bid.

- Impose a use-it-or-lose-it clause that requires the successful bidder to launch the planned service within two years, or give up the spectrum.

- To ensure that Canadians can participate fully as citizens, producers and entrepreneurs in the digital information society that is being ushered in by new uses of radio spectrum, we ask that a portion of the proceeds of the spectrum auction be used to establish digital skills training centres within reach of all Canadians.

IDENTIFICATION OF PARTIES PREPARING THESE COMMENTS

1) The Canadian Association for Community Television Users and Stations (CACTUS) was created to help ensure that ordinary Canadians have a voice within their broadcasting system. We represent independent non-profit community TV broadcasters and producing corporations, and the Canadians that use and watch them.[1]

   We consider that our mandate refers to all video and multi-media produced by community non-profit corporations and distributed by any means, including new media and wireless networks.

2) Randy Bruce was a founding member of the Inukshuk Learning Advisory Committee for British Columbia. The Learning Advisory Committees provided advice to Inukshuk Wireless (a partnership between Bell and Rogers) regarding the Learning Plan, which required Inukshuk to return a percentage of revenues to benefit learning communities as compensation for the use of the 2500 Mhz to 2599 Mhz frequencies. This band historically had been allocated for educational use.

3) E-Novations is a City of Fredericton utility focused on telecommunications and is a registered non-dominate carrier with the CRTC. E-Novations owns and operates one of the country's largest customer-managed fiber-optic networks and also provides free WiFi based wireless Internet to the public[2].

4) Input from other public users of spectrum was sought in preparing this document, including non-profit, municipal, provincial, and co-op providers of wireless Internet, cell phone, broadcasting, and multi-media services.

SCOPE AND STRUCTURE OF COMMENTS

5) Since the main thrust of our response is to draw attention to the needs of a sector that is barely mentioned in the IC consultation paper (non-emergency public users), we have structured our response in two parts:

   - as a discussion paper and set of recommendations to serve this sector.

   - followed by responses to a subsection of the specific questions posed by the IC consultation paper, those that impinge on public and non-commercial users of spectrum. Some ideas are restated in this section.

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[1] For more information about CACTUS, see **cactus**.independentmedia.ca.

[2] For more information about e-Novations and the City of Fredericton's public wireless Internet infrastructure, please see: http://www.fred-ezone.ca/

INTRODUCTION

Spectrum is a Public Resource

6) Radio frequency spectrum is first and foremost a public resource, and it is finite. It has a growing number of commercial and social uses, notably increasing peoples' access to digital communications and content.

7) The 700 MHz band of spectrum has been called the "gold standard." We recognize that this spectrum is a valuable resource both to telecommunications companies wanting to expand or launch their wireless businesses in Canada and to the federal government as a source of auction revenue.

8) In addition, this spectrum is a valuable resource for citizen communications and new media innovation. Like the water we drink, spectrum is a public good that can either be bottled and sold to us for commercial gain or offered as a public service on a cost-recovery basis in our taps.

9) Canadian laws that govern the use of our radio frequencies spell out this public policy imperative. Section 7 of the *Telecommunications Act* affirms that "telecommunications performs an essential role in the maintenance of Canada's identity and sovereignty." Among the policy objectives include the intent that radio frequencies be used:

   (a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;
   (b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;
   (…)
   (g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;
   (h) to respond to the economic and social requirements of users of telecommunications services.

10) Section 3 of the *Broadcasting Act* states that "the Canadian broadcasting system … makes use of radio frequencies that are public property and provides, through its programming, a public service essential to the maintenance and enhancement of national identity and cultural sovereignty."

The Question of "Efficiency"

11) We understand that the primary worldwide goal of spectrum management is to ensure the most efficient use possible of this scarce resource. In this context, we dispute the widely held assumption that broadcasting (a one-to-many application) is less efficient than other wireless operations. Broadcasting may be a relatively inefficient use of spectrum if few people watch a particular broadcast channel regionally or nationally at a given time (which ties up roughly 6 MHz under the old analog system, or between about 1 and 6 MHz under digital, depending on whether the signal is SD or HD). Many more users might have placed cell phone calls or downloaded information on the Internet using the same spectrum for multiple one-to-one transactions.

12) On the other hand, broadcasting is a *more* efficient use of spectrum for the live sharing of events of national and regional cultural signficance, such as newscasts, live cultural events, political rallies, public debates, and so on, when everyone can tune in at the same time using the same 1-6 MHz of spectrum. It would be spectrum-wasteful for millions of people to tune to those same events by downloading simultaneous copies of the same thing.

13) It's worth questioning this assumption given that it is anticipated that there may be more spectrum auctions in future of what is now considered broadcast spectrum, even of the "white spaces" between broadcast channels. The question becomes doubly relevant when we recall that much of the pressure for more "wireless broadband" is driven by the desire for video-based applications for distribution to wireless devices such as phones and laptops. It's going to be TV with a different delivery format... on the move, rather than plugged in at home by antenna, cable, or satellite. We also know (because the trends are already developing) that much of this content will be foreign, consist of light entertainment, and constitute millions of copies of the same thing, which could just as easily be downloaded by users using land lines at home, the office, or places of study.

14) We note comments by Industry Canada representatives at the International Institute of Communications (IIC) conference in November of 2010, that however the 700 MHz spectrum band will be used, radio spectrum is ultimately finite. If there is genuinely a need for the consumption of vast new volumes of rich data (principally video) while Canadians are on the move as opposed to sitting at fixed terminals, the majority of that volume must be met by technologicaly development: better methods for compression and multiplexing.

Implications for Content

15) This being said, we believe the priorities for the allocation of the 700 MHz spectrum band should be as follows:

a) first and foremost, that there is adequate space for applications that genuinely must be used while on the move: data-rich graphic applications for sharing by public safety personnel converging in real time in emergencies. We note that the narrow definition of the "public safety" sector as consisting of fire, police, and paramedics doesn't recognize many kinds of emergencies public entities have and will continue to face in our cities and communities. For example, public works departments respond to flooding, which threatens both life and property. Snow removal is implicated in large storms, which can threaten both life and property. The power provider is affected in power outages, which can compromise both life and property, and so on.

   We therefore endorse the consultation document's recognition of three categories of "public safety users".

b) secondarily, that if the majority of the commercial use of the 700 MHz band is likely to be consumed by rich-data, unregulated, light entertainment coming from foreign sources, that there be space for local, Canadian, educational, and publicly generated content side-by-side, simply because the availability of such devices in the market will continue to shape and drive the habit of consumption of entertainment while on the move.

   We reiterate that this spectrum is first and foremost a public resource. Public entities that create the public fora for the educational, political, and cultural discourses that *"enrich and strenghthen the social fabric"* (the Telecommunication Act) and *"maintain and enhance national identity and cultural sovereignty"* (the Broadcasting Act) should not have to "buy back" spectrum from private entities that have no mandate to design distribution infrastructures that includes every last Canadian nor to create such public spaces. Some spectrum must be reserved to stimulate alternative approaches to technological innovation: those that approach Canadians as citizens of a collective that need to share information as a collective, rather than solely as consumers who can be served individually.

16) We also raise our concern that as "TV" (video delivered using the 700 MHz band) shifts from licenced spectrum overseen by the CRTC with public processes that scrutinize such use for the greatest public benefit (the broadcast licence application process) to unlicenced spectrum (the same 700 MHz band will be used to transmit video images with no such scrutiny), that we have no public process for such scrutiny. The idea of an auction as a means of assigning spectrum implies turning it over for use by the highest bidder, based on neither a business plan nor on proposals for public benefit.

17) As audiences for culturally significant categories of content (especially video) are increasingly fractured and managed by commercial entities— to the point of eroding broadcasting as a one-to-many use of scarce spectrum—opportunities for Canadians to participate and exchange communications with one another in public and shared spaces must be preserved.

The Question of Public Mandate

18) Given the movement of the 700 MHz spectrum from a licenced and publicly scrutinized environment of broadcasting to an unlicenced highest-bidder environment, to ensure that the public's need and good be recognized, we recommend that part of this bandwidth be reserved from the proposed auction to encourage innovation by educational, community-based, and public entities. We call it a reserve for "Public Innovation". Such a reserve will achieve two goals:

- **The Creation of Public and Community Content, Models and Applications:**

  The applications envisioned by public and community entities are different than those generated by the private sector. They are necessary for the healthy cultural life of communities, and also provide an alternative and much-needed form of content competition for the private sector. Examples include public-safety applications, educational content and community media. We note that the Internet's masterful one-to-one data sharing structure (where no one user or entity is in control) was developed by academics, not the commercial sector, which was at that time still fully invested in the one-to-many hierarchical model of "broadcasting", in which single owners control and shape content. Wikipedia is another. Non-commercial entities need to have a stake in how the distribution infrastructure develops, because the infrastructure shapes the content. As Canadians, we know that "the medium is the message".

- **A Level Playing Field for Service**

  Commercial entities are bound by their shareholder structures to offer service only where economies of scale warrant. In a geographically disparate and challenging country like Canada, bandwidth needs to be retained so that public entities can offer broadband services in localities where private entities are not interested to do so, or are not motivated to do so at competitive rates.

A Reserve for Public Innovation Probably Implies Local Administration

19) We note that both goals for a "Public Innovation" reserve are locality-based:

Local Content: For example, while Canada's total population tends to be sufficient to guarantee that content of national interest can be generated by public and private bodies (e.g. coverage of national elections, the Olympics, or the development of educational or public-safety software and "apps"), this is most often not true on a local level. Private entities have been particularly poor at generating local television except in pockets or without government subsidy, or at adapting localized versions of infrastructure for wireless or Internet services, or localized versions of educational media, virtual town halls, and so on. It is almost always up to local residents, planning authorities, and community non-profits to fill these gaps. We want to ensure that these groups have the tools to do it, and are not ham-strung because spectrum has been auctioned according to regional and national tiers to the highest commercial bidder. We note that in order to offer a municipal wireless infrastructure (which has generated many spin-off communications projects and services), cities like Timmins have had to seek government grants and engage in extensive fund-raising to 'buy back' spectrum from Bell and other service providers. Once this infrastructure was in place, local applications adapted to civic needs became possible; for example seniors' computer centres, virtual town squares, college videoconferencing, and so on.[3]

Local Service: Similarly, it's not that Canadians as a whole can't expect to enjoy lead-edge telecommunications technologies such as high-speed Internet, it is at the local level that some rural communities lose out and cannot enjoy the same level of infrastructure as those in urban areas.

20) We note that even national public entities such as the CBC that may wish to develop national wireless applications and content over the long term will nonetheless rely on local infrastructure. For example, even though there are CBC nationally broadcast television channels, they are distributed using different parts of the radio spectrum (channels) from individual broadcast towers in each community, depending on local geography. This is the same for wireless and cellular service. Therefore, even national would-be public users of broadband will be reliant on local distribution infrastructure. So we assume that the administration of a spectrum reserve for Public Innovation would have to be administered by local or regional bodies, even if a specific application, user, or item of content were national in scope.

21) Therefore, the call for public reservation of some spectrum in the 700 MHz band is also a call for LOCAL administration and planning for some of that spectrum.

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[3] For more information, see the web site for Neonet at http://www.neonet.on.ca/

22) In preparing our response to this notice of public consultation, we identified and consulted with the following categories of public users that need access to broadband spectrum:

- The public safety community as identified in the consultation document.

- Publicly owned telecommunications companies (historically telephone exchanges, but now offering a range of services). These may be municipally, provincially, or co-operatively owned, with a variety of historical reasons for their existence. Most persist because no commercial entities serve the remote areas these public entities do. Some may be in a position to compete in a spectrum auction within a set-aside for smaller players provided tiers are made small enough (although we question whether they should have to do so, since the spectrum is public to begin with and they are attempting to provide service in areas where there is no business case). Others may not. Entities in this category include members of the Canadian Alliance of Publicly-owned Telecommunications Systems (CAPTS), the Ontario Telecommunication Association (OTA), and the Association des compagnies de téléphone du Québec (ACTQ), as mentioned in the consultation document. They typically serve smaller and more remote communities such as Prince Rupert, Thunder Bay, and Kenora.

- Municipally owned wireless Internet providers such as the City of Fredericton, which want a stake in how the intellectual and entrepreneurial environment of the city develops, as well as influence over prices residents pay. Such entities regard broadband as the information highway in the same way as they regard their bricks-and-mortar infrastructure. They want to ensure fair access for residents to maximize the educational, recreational, and entrepreneurial potential of their communities. The City of Fredericton currently uses wireless spectrum within the 802.11 standard and reports that these frequencies are congested beyond their useful limits in urban areas with the proliferation of consumer WiFi devices.

  Other municipalities have responded to this challenge by raising federal and provincial funding to incent private companies that have acquired high quality spectrum in previous auctions to serve remote areas. These are examples of public entities having to "buy back" spectrum from the private sector (using tax dollars) to serve Canadians left behind by the commercial system. A few Ontario examples include Neonet, Adnet, and Blue Sky Net, serving communities such as Timmins, Sudbury, and First Nations communities. In each case, these projects have generated not just a minimal level of access to broadband in rural areas, but a range of local content and applications, including library portals and municipal GIS systems.

- Community-based media and content creators such as our own members, who want to ensure that local video content (e.g. digital townhalls, local political, cultural and

environmental programming) can be made available to wireless and mobile devices, in parallel to traditional broadcast platforms.

- Educational Institutions, including K-12, colleges, and universities that want either to offer wireless services on campuses and/or educational content via wireless services. Students as a community are among those most "on-the-move" with demand for such services. Educational users of spectrum now managed by Inukshuk Internet Inc. are examples from this group, and are particularly vulnerable now that the 2500-2690 MHz band is slated for auction. This band was traditionally reserved for use by the educational sector, and is still used by this sector in the US, notably to offer free wireless Internet throughout the US public school system[4]. Where this band is underutilized south of the border, the educational sector can sublease it to commercial entities. This means that the educational sector maintains long-term control and access to this spectrum, and can reinvest earnings generated by the spectrum into educational initatives. We draw attention to this precedent as an instance of reservation of spectrum for particular categories of public users, who maintain control over it over the long term. This principle was recognized here in Canada for the 2500-2690 MHz band until last year.

- Other municipal services, such as libraries, school bus dispatchers, snow removal and so on with a need to share information in real time with each other and with community members.

23) These are just a few of the users and applications that can be identified today. We note that the intent of reserving spectrum for "Public Innovation" is the same as allowing the private sector to bid on spectrum today to drive future innovation. An equivalent reserve for Public Innovation must be available to stimulate and generate new applications and innovation to serve public and social needs not addressed by the private sector.

[4] For more information about educational use of the 2500-2690 MHz band in the US, see http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-46A1.pdf.

KEY RECOMMENDATIONS

24) With these factors in mind, we make the following six recommendations for the 700 MHz spectrum auction (we expand on each one in subsequent sections):

- Reserve from auction a band of no less than 2 contiguous 5 MHz in the 700 MHz band for Public Innovation.

- Set aside one-quarter of the available spectrum for carriers with less than 5% of market share to enable the development of more carriers and more consumer choice.

- Set a lease term of no more than 10 years on the spectrum to be auctioned, and pay a portion of the lease yearly.

- Establish usage-based criteria for the auction, so that would-be spectrum users must make both a business case that clearly demonstrates the public-service value of the services that will be offered with the spectrum, as well as meet a minimum dollar bid.

- Impose a use-it-or-lose-it clause that requires the successful bidder to launch the planned service within two years, or give up the spectrum.

- To ensure that Canadians can participate fully as citizens, producers and entrepreneurs in the digital information society that is being ushered in by new uses of radio spectrum, we ask that a portion of the proceeds of the spectrum auction be used to establish digital skills training centres within reach of all Canadians.

Recommendation 1: Reserve Spectrum for Public Innovation

25) We propose that 10 MHz (a pair of continguous 5 MHz blocks) of the spectrum in the "gold standard" 700 MHz band be left out of the auction and reserved for communications and multi-media innovation by a variety of educational, civil, public, research-based and citizen-based initiatives that would not be in a position to compete in a spectrum auction. It would be grossly inefficient from a public and economic perspective to require such initiatives to "buy back" spectrum on a competitive basis from private entities.

26) Why the 700 MHz band? This band is well-suited to both broadcasting and wireless broadband applications since it travels well across distance and through buildings. It is also suited to ATSC standards and there will be a widespread availability of consumer devices compatible with it.

27) Why 10 MHz? Because currently most existing send-and-receive technologies depend on having at least 5 MHz for each direction. We envision that multiple public and local entities (equivalent to tier 4s) could manage and share spectrum within this Public Innovation reserve, and that the particular entities participating would vary from place to place across Canada, depending on differing economic, social, geographic and cultural contexts and needs. If the spectrum were underutilized in a particular community, it could be subleased to commercial carriers to maintain full and efficient use of spectrum, just as the education sector subleases the 2500-2699 MHz band in the United States.

28) While the particular 10 MHz need not be the same country-wide, a single Tier 1 national allocation for Public Innovation would simplify the sharing of innovative applications and technologies that are developed in one place with initiatives in other places.

Recommendation 2: Set Aside Spectrum for New Entrants and Small Carriers

29) We advocate setting aside 25% of the remaining available spectrum for an auction among new telecommunications service providers and to carriers with less than 5% of current market share. The current tri-opoly system (Bell, Rogers, Telus) in much of the country does not provide the competition necessary to lower commercial rates for telecommunications services. (We note that lack of commercial competition is one reason the City of Fredericton offers a municipal wireless service.) A set-aside for new entrants and small carriers, similar to the set-aside in the Advanced Wireless Services Auction, is therefore warranted for the auction of the 700 MHz band.

30) Successful bidders on the set-aside spectrum should not be allowed to lease, transfer, exchange or share this spectrum with an incumbent carrier during the lease term.

Recommendation 3: Limit Lease Terms to 10 Years, and Pay in Annual Increments

31) In the rapidly changing environment that is telecommunications, ten years is a life-time. There are likely to be technological changes that improve spectrum efficiency over the next decade, as well as new uses for radio frequencies that are impossible to envision today. We therefore recommend that lease terms be limited to 10 years, as they were in the Advanced Wireless Services Auction.

32) Furthermore, we recommend that the lease be paid in yearly increments, so that:

- revenue accrues to the federal government on a regular basis, not in a lump sum
- the same revenues accrue to successive governments. Due to the size of payments, motivating any one government to undertake spectrum auctions (i.e. sell a public

resource which is difficult to recall) as an exclusive means of raising revenue should be discouraged

- leasers are discouraged from sitting on idle spectrum, since it will cost them incrementally to do so year after year

- the government has greater power to adjust the market direction, if either the market or technological advances do not go in expected or desirable directions.

Recommendation 4: Establish Usage-Based Criteria for the Auction

33) To qualify, would-be bidders should present a business plan that demonstrates the public value of the services that will be offered with the spectrum, in addition to the minimum dollar bid. The auction should not simply grant spectrum to the highest bidder.

34) As aforementioned, this particular band of spectrum is being shifted from broadcasting— where content is regulated— to a system that rewards the highest bidder regardless of what that bidder plans to do with a scarce public resource. Given the current market and existing demand for video content, it is likely that a significant amount of "TV" service and consumption will shift from a regulated environment to an unregulated one. Given the telecommunications AND broadcasting policy objectives related to the use of spectrum, Canadians should know at the outset of the auction what we can expect in return (aside from funds for public coffers) for giving up regulated broadcast spectrum.

Recommendation 5: Impose a Use-It-or-Lose-it Clause

35) Bell, Rogers and Telus— the largest wireless service providers in Canada— hold a combined total of 55% of the Advanced Wireless Spectrum. However, at the time of writing they have not launched any consumer services using that spectrum. It is not an efficient use of spectrum for companies with deep pockets to buy access to spectrum in order to prevent others from using it.

36) We therefore propose that successful bidders must launch services according to the business plan presented at auction within two years (or three years for a new entrant/small carrier) of acquiring the spectrum. Bidders who miss this deadline would return spectrum, at which time their annual lease payments would be taken over by whoever bids for the returned spectrum.

37) We recommend that annual reports be required from successful bidders on their spectrum utilization.

Recommendation 6: Use Proceeds to Promote Digital Literacy

38) To ensure that Canadians can participate fully as citizens, producers and entrepreneurs in the digital information society that is being ushered in by new uses of radio spectrum, we ask that a portion of the proceeds of the spectrum auction be used to establish digital skills training centres within reach of all Canadians.

39) As CACTUS proposed at the CRTC's community television policy review in April of 2010 (2009-661), many community-based organizations already exist in Canadian communities that are doing part of the job of full multi-media digital access, training and production centres, but they need more resources to bring such access and skills training within reach of all Canadians. Examples include:

- independent community TV channels, that can function as digital town halls on all platforms including cable, satellite, over-the-air television, the Internet, and new mobile TV platforms.

- CAP (Community Access Program) sites, as elaborated in the submission to this consultation by Telecommunities Canada. Many of these sites are already collocated with hot spots and points where the public can access the Internet for free, either via land lines or wireless networks.

- public, college, and university libraries (many of which are collocated with CAP sites and/or with campus TV and radio facilities)

- other existing community media hubs where media skills are disseminated, including community radio channels and film and video co-operatives.

- the high-tech hubs that are members of the Canadian Digital Media Network.

40) These digital skills training centres would be one of the users of the spectrum reserve for Public Innovation, and could take the lead in small communities if no other party (municipality, public telco and so on) is in a position to do so.

41) In the CACTUS proposal presented at the community TV policy review in 2010, it was established that 250 such centres (building on existing resources) could reach 90% of Canadians (all communities over 10,000 residents) as well as 70 additional regional centres to serve less densely populated areas, and could be made operational with annual funding of approximately $113,000,000. We provide more details about this proposal in Appendix A.

42) If Industry Canada adopts the recommendation to collect yearly lease payments from spectrum leasees, a portion could be directed to these digital skills training centres, assuring steady funding for them.

43) We note that the full "Digital Dividend" can only be realized if all Canadians are given the opportunity to participate fully in the new digital economy. It is appropriate that taxpayers see direct and on-going benefit of their lease of scarce radio spectrum to the private sector, rather than it being dispersed on a glut of general program spending in a single year that can't be sustained.

44) Finally we note that the establishment of such centres was recommended in the recent report by the Standing Committee on Canadian Heritage entitled *Emergency and Digital Media: Opportunities and Challenges*. Recommendation 8 was:

> *8. Examine the proposal of the Canadian Association of Community Television Users and Stations (CACTUS) for the establishment of community operated multimedia centres and access to its material online as a way of encouraging people to develop digital skills.*

Recommendations 9, 12, 14, and 17 also endorse this proposal:

> *9. The Department of Human Resources and Skills Development [should] review its policies and programs in order to ensure that priority is given to training in digital skills.*
>
> *12. Examine ways of supporting new digital enterprises (start-ups) as they develop their business models.*
>
> *14. Review the system of grants and contributions in order to encourage innovation in the digital media sector.*
>
> *17. Reinvest some of the money it receives from the next spectrum auction in a digital strategy.*

ANSWERS TO SELECTED QUESTIONS POSED IN SMSE-018010

45) In this section, we answer selected questions posed in SMSE-01810 that a) we are qualified to comment upon and b) which are relevant to the arguments presented above for spectrum to be removed from the auction and reserved for Public Innovation. In some cases, our comments repeat or reinforce opinions presented in the foregoing discussion.

5.3-5.5

46) As presented in the foregoing discussion, we have identified several categories of public, non-commercial, co-op and non-profit user groups (including our own members) that have legitimate needs for spectrum in the 700 MHz band, yet who do not fall within the definition of "public safety" users (whose actions directly impact life or property) and could not compete in a spectrum auction. We urge Industry Canada to consider these users as a separate category and to remember that radio spectrum is first and foremost a public resource, with expecations under both the Telecommunications and Broadcasting Acts that it be used to serve the public interest. In our discussion, we describe some of those interests and how they cannot be met through exclusive commercial management of such spectrum.

5.6-5.8

47) As presented in the foregoing discussion, non-emergency public users need dedicated regional-local networks to ensure equality of service to all Canadians and that applications and content can be developed for those networks that meet public-interest objectives. Such entities can rarely afford to "buy back" spectrum from the private sector once auctioned, nor should they have to.

48) We believe it is feasible for such public uses to be managed at a local-regional level by coalitions of local public and community stakeholders, possibly following the Tier 4 boundaries referred to in the IC consultation document, or possibly following municipal, county, or other existing geographical boundaries.

4.4-4.5

49) It makes logical sense to now comment on questions 4.4 and 4.5. We have discussed the need for spectrum by non-emergency public users with representatives of the public safety community who are also commenting in this consultation. Depending on the amount of additional spectrum that may be set aside for use by the public safety community as a result of this process (that is—spectrum that would be utilized primarily in emergency situations and which might be underutilized at other times), it's possible that public safety users and non-emergency public users might be able to share a spectrum allocation via local or regional governance structures. The non-emergency

users might use underutilized spectrum when the public safety community does not require it. In fact, such use:

- may be naturally complementary, in that members of a community engulfed in an emergency situation are probably less likely at those times to want to consume a community media multicast, access a public library portal, or participate in a digital townhall meeting.

- May represent a more efficient use of spectrum than either type of public use on its own.

50) As mentioned above, we envision 10 MHz as being adequate for a Public Innovation reserve for non-emergency users. Whether such users could share an allocation with public safety depends on whether any allocation for the latter that results from this process would include roughly 10 MHz that remains idle in non-emergency situations.

5.12-5.13

51) It is our view that a mix of tier sizes can best stimulate competition in the private sector, and accommodate public users in the Public Innovation reserve we propose. As described in the foregoing argument, such a Public Innovation reserve would likely be most efficiently allocated and managed in Tier 4 blocks (tailored to local populations and needs), with possible occasional Tier 3 blocks.

5.14

52) At the time of writing, none of the 7 over-the-air low-power community broadcasters in Canada is affected by this question. They either already occupy TV channels below 52 or have already obtained a digital allotment below 52 to move to on Aug. 31 of this year.

53) However, CACTUS does not agree that no new LPTV community licences should be permitted in the 700 MHz band in future if all three of the following conditions apply:

- a licencee in the current spectrum auction is not affected by its presence

- if no channel allotment below 52 can be found, and

- if the CRTC is not prepared to require incumbent broadcasters to multiplex with a community broadcaster at least with an SD signal.

54) We note that part of the "digital dividend" anticipated by the transition to digital over-the-air television was the availability of more broadcast television channel capacity. However, since incumbent broadcasters have been allotted a full 6 MHz digital channel

post-transition (the same amount of spectrum they enjoyed under analog), and channels 52-69 are slated for auction, it's not apparent that more channels for new broadcasters (including community broadcasters) will be available after the transition, especially in tight urban markets near the US border. It would appear that fewer channels will in fact be available.

55) We note that this is a policy choice in Canada that favours technological upgrade to HD (a highly inefficient use of spectrum) over increased diversity of OTA choices for Canadians. In other countries, including the US, multiplexing is being encouraged to offer as many as a dozen SD channels in the space of one old analog signal. Since this is a policy choice and not a technological necessity or limitation, we encourage Industry Canada to work with the CRTC to make sure that new entrant broadcasters (especially community TV broadcasters, which are underrepresented in almost all Canadian markets), can find spectrum.

6.2 – Spectrum Utilization Policy

56) Given our aforementioned observations that the auction of the 700 MHz band represents a shift from broadcasting uses in which content is regulated and mechanisms exist to support the development of Canadian content, to telecommunications uses that will include mobile TV—and in fact it is rich data like video that will drive the demand for more bandwidth—we would like clarification of the statement in the consultation paper:

Subject to technical compatibility considerations, there will be no restrictions on the services to be offered by licensees under MBS.

57) It's unclear to us whether "services" means a passive distribution service such as wireless Internet or cell service, or the actual applications (content) that are generally offered along with distribution services. Just as broadcast distribution undertakings have historically been required to offer a range of Canadian content services alongside non-Canadian services and to subsidize those services, we see no reason why broadband service providers should not also be required to offer Canadian services and to subsidize them. This expectation is clearly in line with the expectations in both the Telecommunications and Broadcasting Acts that use of spectrum should strenghten Canada's culture fabric. We recommend that this issue be dealt with in a separate consultation.

7.3

58) Canadians in most urban regions continue to have only three or four companies from which to purchase wireless services and Canadians in small towns and rural areas have fewer than that. An ideal competitive situation would require at least five competitors.

We therefore believe measures to increase and sustain commercial competition are necessary.

59) Roaming with soft handover—allowing a call continue when the user travels between networks—must be enforced. In addition, infrastructure sharing among carriers must be enforced so that new entrants can establish networks quickly and efficiently.

60) As well, we believe that non-commercial entities that do not have the means to participate in an auction might also provide essential "competition" in terms of innovative and unique content and service that Canadians—especially those in smaller and remote communities—do not get from commercial operators. It is partly for this reason that we have proposed that a Spectrum Reserve for Public Innovation be created prior to announcing the auction for the remaining spectrum.

7.4 & 7.8

61) We do not believe that non-Canadian entities should hold leases to Canadian radio spectrum. As already discussed, radio spectrum is a scarce public resource that is used by Canadians to exchange a variety of kinds of information. This auction is in particular being driven by a desire to offer more data-rich and especially video-based applications. This being the case, it is our view that wireless broadband providers should be treated like broadcast distribution undertakings who may or may not elect to offer their own content and applications. The "information highway" should remain in Canadian hands to ensure that Canadian interests control decisions about the content and applications that can be accessed using the spectrum.

7.5

62) As aforementioned, we propose that Industry Canada set aside 25% of the spectrum to be auctioned for smaller players and new entrants, in 5 MHz blocks. If approximately 80 MHz are available for auction, this would mean setting aside two pairs of 5MHz blocks—20 MHz—for auction to new entrants. This would provide options for small bidders to enter the market; caps don't guarantee space for small entrants, only that no one large entrant can accumulate more than a certain amount.

63) In addition we propose that leases be limited to 10-year terms and that leases be terminated if the bidder has not launched its business on the acquired spectrum within two years (or three years for small entrants). This will ensure that deep-pocketed bidders are not able to accumulate spectrum they don't intend to use simply to keep competitors out.

7.6 b) i)

64) New entrants and small players should be allowed to bid on the set-aside blocks. New entrants are entities that don't currently provide commercial wireless services. Small players are those with less than 5% of commercial wireless market share.

ii)

65) As noted above, we recommend no less than 20 MHz be set aside in two paired blocks of 5 MHz each. It is not necessary for the two blocks to be contiguous.

7-7

66) As noted above, a Spectrum Reserve for Public Innovation should be created in advance of the auction. This mechanism would engender a non-commercial stream of uses that would provide competition to commercial providers in underserved markets.

8.1-8.3

67) The Spectrum Reserve for Public Innovation would ensure the possibility of non-commercial service provision in areas the market does not serve. These include the North and low-density rural areas. More initiatives are needed from the government (federal, provincial, and municipal) to encourage digital advancement and the uptake of digital skills; the Spectrum Reserve is one such public tool.

9.1

68) Since spectrum is a public resource, since it is scarce, and since relatively few companies will win any in this auction, we endorse the principle of open access on all platforms.

10.1

69) While we have no opinion about the timing of the 700 MHz spectrum auction vis-a-vis the 2500-2690 MHz auction, we note that the 2500-2690 MHz band was previously designated for educational use (and still is in the US). Until last year, commercial users of the 2500-2690 MHz band in Canada recognized this educational designation by funding a variety of educational initiatives and projects from the business proceeds of using the spectrum.

70) Since that funding has been cut off and all former recognition of the designation of the band for educational uses has ceased, we reiterate that a Spectrum Reserve for Public Innovation (including educational users) is necessary. We also endorse the former Inukshuk approach, in which commercial users of spectrum were expected to subsidize non-commercial and educational projects. This is why our sixth recommendation calls

for a part of the proceeds from the auction (paid in yearly increments, not in a lump sum) be directed toward digital skills training and content production for all Canadians.

CONCLUSION

71) Reservation of spectrum for both emergency and non-emergency public uses has long been recognized as both appropriate and necessary. We note current reservations for astronomy, public safety, broadcast spectrum allocations for provincial and national broadcasters, and current and former allocations for educational purposes. Community users of spectrum have also been recognized alongside the public and private sectors in the 1991 Broadcasting Act.

72) A spectrum reservation for Public Innovation before the current auction process for the 700 MHz band is necessary to ensure that there is both equitable service and use of spectrum for all Canadians and that there is a true marketplace and competition for ideas about future use of spectrum, appropriate technologies, and digital skills development. All sectors in Canadian society, including public, educational, commercial, community, and civil society organizations must be able to participate in and contribute fully to Canada's digital revolution.

73) Public spaces on the information highway must be ensured to fulfill the public-service, cultural, and economic objectives of both the Telecommunications and Broadcasting Acts.