5 Chapter 5

Technical Regulation

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In this report, the term "technical regulation" is used to refer to several important types of regulation related to the physical facilities and equipment that telecommunications service providers require in order to operate telecommunications networks and to manage scarce resources such as spectrum and numbers.

Technical regulation activities currently include regulation of:

- use of radio spectrum, technical standards and equipment by Industry Canada
- access to telecommunications infrastructure such as towers, poles, conduits, rights-of-way and wiring in multi-unit buildings
- interconnection and numbering resources by the CRTC and industry organizations to which it has delegated responsibility.

These various kinds of technical regulation affect who can provide telecommunications services as well as the efficiency and competitiveness of those services.

The general objectives of technical regulation are to efficiently allocate scarce resources (e.g. numbers, spectrum), correct for externalities (e.g. the harmful effects of radio-frequency interference) and improve access to bottlenecks facilities (e.g. support structures, in-building wiring). In line with its general principles, the Panel believes technical regulation is justified when market forces alone are unlikely to achieve these objectives.

The specific purposes of technical regulation include:

- ensuring efficient network interconnection and interoperability between telecommunications service providers
- ensuring that telecommunications service providers have efficient, timely access to support structures, rights-of-way, in-building wiring and other facilities that are essential for the efficient rollout of telecommunications networks to all Canadians
- ensuring effective and efficient licensing of spectrum and radiocommunication transmitters in order to promote achievement of the telecommunications policy objectives recommended in Chapter 2, as well as provision of licence-exempt spectrum where appropriate
- preventing network harm and other harm through radio-spectrum interference, securing public health and safety, and ensuring that Canadians continue to have access to essential telecommunications services in emergencies
- ensuring efficient access to and use of numbering and addressing resources.

In line with the overall approach to telecommunications regulation recommended in this report, the Panel believes technical regulation should be efficient, effective and proportionate to its purposes. It should be designed so that it is competitively neutral and does not discourage investment.

Support Structures, Rights-of-way, Building Access and In-building Wire

Telecommunications and other information and communications technologies or ICTs (see Chapter 7 of this report for a detailed discussion) play an increasingly important role in improving the economic and social welfare of Canadians. In order to deploy Canada's ICT infrastructure, improve Canadians' connectedness and ensure that customers can choose among competing networks and services, telecommunications service providers and distribution undertakings[1] (e.g. cable companies) must be able to access the infrastructure elements they need to build and maintain their networks.

Wireline and wireless carriers require access to rights-of-way and support structures (e.g. poles, towers, conduit). In addition, telecommunications service providers generally require access to in-building wiring in multi-unit buildings in order to supply services to customers. These elements are essential facilities. Without access to them, telecommunications service providers are unable to provision their networks or provide service to their end customers (see the review of essential facilities in Chapter 3). Furthermore, duplication of these facilities is uneconomic or undesirable. There has been increasing resistance from municipalities to the duplication of support structures. It is not in the public interest to have multiple sets of poles on streets or to have roads being dug up continually to accommodate multiple sets of underground ducts. It is also more economically efficient to share the costs of existing support structures than to duplicate this investment. Hence, these infrastructure elements are essential components of Canada's national telecommunications system.

The Panel believes all barriers to competition should be removed, including limitations on access to these critical infrastructure elements. Removal of these barriers will ensure that access is available to all telecommunications service providers on reasonable terms and conditions. Access needs to be timely, and any disputes regarding the terms of access must be resolved expeditiously. Denial or delays in obtaining access can lead to delays in the construction of networks and the provision of services. In the Panel's view, the timely resolution of disputes over access to these infrastructure elements is crucial to the timely rollout of communications networks, as well as to the ability of customers to exercise their choice of competing service providers and services.

In the past, network interconnection was of concern only to carriers who owned and operated their own networks. However, it has become increasingly important to telecommunications service providers who lease network elements from other carriers. Over the past decade, these "resellers" have gradually achieved limited interconnection rights. Consistent with the approach recommended in Chapter 3 to treat all telecommunications service providers equally, the Panel proposes to extend interconnection and access rights to all telecommunications service providers.

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[1] In ss. 2. (1) of the *Broadcasting Act*, "distribution undertaking" means an undertaking for the reception of broadcasting and the retransmission thereof by radio waves or other means of telecommunications to more than one permanent or temporary residence or dwelling unit or to another such undertaking.

Historically, access by telephone companies to support structures such as poles and ducts or to in-building wiring, ducts and risers in multi-unit buildings was not a significant concern. In order to avoid duplicating the cost of erecting and maintaining poles, it served the interests of electrical utilities and local telephone companies, both of which had local distribution monopolies, to pool their support structures or to grant each other reciprocal access rights. Similarly, in a monopoly environment, building owners had an interest in ensuring that their tenants had access to telecommunications services from the monopoly supplier, and municipalities had an interest in granting public utilities rights-of-way to construct their facilities.

However, disputes about access to electrical utility support structures and access to multi-unit buildings have increased over time, beginning with the licensing of cable television companies in the 1960s and escalating in recent years with the emergence of competition among multiple telecommunications carriers. The situation has been exacerbated by the fact that in some cases electrical utilities are themselves entering the telecommunications marketplace. Similarly, some municipalities have started to view the provision of rights-of-way as a revenue-generating opportunity and have sought to extract higher fees from telecommunications carriers to access their rights-of-way. In a few cases, municipalities have developed plans to build their own infrastructure to compete with telecommunications carriers. In such cases, municipalities would have the incentive and opportunity to favour their own infrastructure builds over those of other telecommunications carriers in the granting of access to rights-of-way.

It was evident from the Panel's consultation process that access to these critical infrastructure elements will continue to be an important issue as long as there is the potential for significant delays in obtaining access or for imposing inconsistent and possibly onerous charges and conditions for access by the owners of these essential infrastructure elements.

The CRTC has the authority under the *Telecommunications Act* (s. 43 and 67, respectively) to grant Canadian carriers and distribution undertakings access to public rights-of-way in order to construct transmission lines, and to make regulations setting standards for the height of those transmission lines. The CRTC also has the power to order a Canadian carrier who owns support structures to grant access to those structures to another service provider (ss. 43(5) of the Act). However, in some circumstances, a telecommunications carrier may have to apply to another authority (e.g. the Canadian Transportation Agency or a provincial public utility board) to obtain access to rights-of-way or support structures that are not owned by other telecommunications carriers.

The CRTC does not have any express authority over access to buildings. However, the CRTC has established a framework[2] of regulatory principles governing access to multi-unit buildings and in-building wiring. This framework relies to a large extent on negotiation between building

[2] Decision 2003-45, Provision of Telecommunications Services To Customers In Multi-Dwelling Units, Ottawa, June 30, 2003. Available online at: **http://www.crtc.gc.ca/archive/ENG/Decisions/2003/dt2003-45.htm**

owners and telecommunications carriers, with the CRTC acting as the arbitrator of disputes. The CRTC enforces this regime by means of rules applicable to the telecommunications carriers who either own or use such wiring. It has also stated its intention to rely on s. 42 of the *Telecommunications Act* to enforce building access codes against building owners.[3]

Support Structures

In Canada, poles and ducts are used extensively to support telecommunications transmission lines. Telephone companies and electricity distribution companies own most of the poles that are used for these purposes. Historically, they have shared these resources, granting each other reciprocal rights to use these poles. Regulations are in place governing the height of poles and the portion of the poles that are dedicated to electricity distribution and telecommunications functions. In urban centres, telecommunications service providers also make extensive use of ducts. These are owned by carriers, municipalities, public utilities and other entities.

When support structures are owned by telecommunications carriers, the CRTC has clear jurisdiction to order access by third-party carriers for telecommunications purposes on terms and conditions it considers reasonable. However, when support structures are owned by third parties who are not also telecommunications carriers, the courts have ruled that, under the existing legislative framework, the CRTC lacks jurisdiction to order use by telecommunications carriers.

A 2003 decision[4] of the Supreme Court of Canada held that the words "transmission line" in ss. 43(5) of the *Telecommunications Act* could not be interpreted to extend to electrical distribution lines. Nor could ss. 43(5) be interpreted to extend to private property, including private easements where some of the electrical poles were located. The effect of this decision was to place resolution of disputes over access to support structures owned by electrical utilities outside the CRTC's jurisdiction and to prevent it from regulating access to such poles pursuant to ss. 43(5) of the Act.

Some provincial regulators, such as those in Alberta, Nova Scotia and Ontario, have exercised jurisdiction over the rates and terms and conditions of access to support structures owned by electricity distribution undertakings. The Public Utilities Commission in New Brunswick has also recently asserted jurisdiction to review the power company's support structure rates in that province. However, it is not clear that all provincial regulators will assume this jurisdiction or that they will adequately fulfil this regulatory role in all provinces and territories. Furthermore, their jurisdiction is limited to the companies they regulate, and does not extend to other entities. An equally important consideration is the fact that they are not regulating access pursuant to the policy objectives embodied in the *Telecommunications Act*, and they do not have a mandate to ensure fulfilment of these policy objectives. In addition, even in those jurisdictions in which provincial public utility boards have acted, there is a significant variance in both the methodology used to set rates and in the magnitude of the charges for third-party access to support structures.

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3 Section 42 grants the CRTC very broad powers to order construction and provision of telecommunications facilities under conditions set out by the CRTC. It has yet to issue an access order against a building owner.

4 Barrie Public Utilities v. Canadian Cable Television Association, [2003], 1 SCC 28 (16 May 2003). Available online at: **http://www.lexum.umontreal.ca/csc-scc/en/pub/2003/vol1/html/2003scr1_0476.html**

In the Panel's view, this is a serious issue that should be addressed. Support structures comprise an important element in the construction and expansion of telecommunications networks in Canada. Failure to ensure access to such structures in a timely manner and on reasonable terms could jeopardize the competitive telecommunications infrastructure envisaged in this report, upon which so many of the other proposed policy reforms rely.

There is a generally recognized public interest in encouraging shared use of support structures. This policy originated in the 20th century public utility environment where there were monopoly suppliers of telephone or electricity services for the public's benefit. In addition, there are sound environmental and public convenience reasons to restrict the duplication of poles on public roads and the number of times that city streets are excavated to install new conduits. Furthermore, a requirement for new entrants to build their own support structures would act as a significant economic barrier to new entry into the telecommunications market, a barrier that would undermine other reforms recommended in the report.

The recent Ontario Energy Board (OEB) decision[5] regarding access to support structures owned by electricity distribution utilities illustrates some of the difficulties cable television companies encounter. As noted in that decision, the electricity distributors have monopoly power based on the fact that, in the absence of regulation, they can control access to their poles. This point was underscored by the fact that the parties had failed to reach agreement on support structure access by a local cable television company for more than a decade. The OEB noted that this degree of uncertainty is not in the public interest.

Another example of how unregulated control over access to the electricity support structures can thwart or delay a telecommunications service provider's build-out and upgrade of telecommunications infrastructure occurred in Atlantic Canada. In that instance, a municipally owned electrical utility with plans to create its own fibre network prevented the local cable television company from accessing its poles for purposes of upgrading its cable distribution plant to offer high-speed Internet and telephone service. The cable company had to resort to using the local telephone company's unbundled local loops to provide telephone service in the area.

In another instance, a municipally owned electrical utility in Ontario with a municipally owned telephone company affiliate, refused a cable television company access to support structures for the purpose of installing facilities, when the cable company could not reach agreement on the terms and conditions of access. The refusal jeopardized the cable television company's ability to provide high-speed Internet services in competition with the municipally owned telephone company.

The growing involvement of electrical utilities in the telecommunications industry as competitive telecommunications service providers raises the possibility that access-related issues may increase in the future, since these utilities control access to an essential facility and may gain a competitive advantage by providing preferential access to their telecommunications affiliates.

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5 Ontario Energy Board Decision and Order on CCTA Application (RP-2003-0249), March 2005. Available online at: **http://www.oeb.gov.on.ca/documents/communications/pressreleases/2005/press_release_ccta_decision_080305.pdf**

While telecommunications carriers and electricity distribution utilities are the principal owners of support structures in Canada, they are not the only owners. Ducts, poles and other structures capable of supporting telecommunications transmission lines are also owned by other entities including municipalities, other utilities, railways and private entities. For this reason, the Panel believes a broadening of CRTC jurisdiction over access to such structures for telecommunications purposes is required, including the power to provide timely resolution of access disputes.

Section 43.(5) of the *Telecommunications Act* is too narrow in its current form to fulfil the policy objectives in the Act. In addition to the problems associated with a narrow definition of "transmission line," the current wording of the subsection refers only to support structures "constructed on a highway or other public place" and only confers "a right of access to the supporting structure" on such conditions as the CRTC may grant. This has opened the door to arguments before the courts that the CRTC lacks jurisdiction to order access to support structures located on public lands that are not in the nature of public highways, or that are publicly owned — but not generally accessible by the public at large. It has also been argued that the power of the CRTC to order "access to the supporting structure" does not include the right to order ongoing maintenance, repair and operation of the transmission facilities being supported, and that the reference in ss. 43.(5) to support structures being constructed "on a highway or other public place," precludes access to structures that are underground or that run over public places. The Supreme Court of Canada has confirmed that this section does not extend to support structures located on privately owned land.

In the Panel's view, all of these restrictions can lead to unacceptable delays in the expansion of new telecommunications infrastructure to Canadians. While the Panel does not recommend extending CRTC jurisdiction to require owners of private property to permit new support structures to be constructed on their land, where such structures already exist (through the grant of easements or otherwise), the rights of competitive telecommunications service providers to access such structures should be enforceable by the CRTC.

Recommendation 5-1

The wording of subsection 43.(5) of the *Telecommunications Act* should be expanded to ensure that the CRTC has a clear power to resolve disputes and order access to support structures constructed on, over, along or under public or private property of all descriptions. These access rights should be defined to include the right to install, maintain, repair and operate transmission facilities as defined in the Act. Subsection 43.(5) should be amended to ensure that it applies to support structures owned by electricity utilities, municipalities and other parties.

As discussed above, separate parts of poles are normally used for telecommunications and electricity distribution, with electricity distribution occupying the top portion and telecommunications carriers making use of the mid-section. In these circumstances, it appears reasonable in the case of joint-use poles to accord provincial regulators jurisdiction over access to the electricity distribution space on the poles, and to accord the CRTC jurisdiction over access to the communications space. Although disputes could arise between the regulators, the Panel believes such

disputes will not be frequent and can be resolved through consultation between the regulators. In the Panel's view, the issue of access to support structures owned by electrical utilities is similar from a jurisdictional perspective to the issue of access to municipal rights-of-way that Parliament addressed in s. 43 of the *Telecommunications Act*. This section of the Act requires telecommunications carriers wishing access to highways or other public places to obtain the consent of the municipality or other public authority having jurisdiction over the property in question. When consent cannot be obtained on terms acceptable to the telecommunications carrier or broadcasting distribution undertaking, ss. 43(4) empowers the CRTC to resolve the dispute and to set terms and conditions of access.

In the Panel's view, a similar approach should be taken to support structures owned by provincially regulated electrical utilities, municipalities and others. The parties should be required to attempt negotiations on a commercial basis, and the CRTC should be empowered to resolve access disputes and to establish terms and conditions of access to the telecommunications space on or in support structures when the parties are unable to reach agreement.

Recommendation 5-2

The CRTC should be empowered to resolve disputes over the terms and conditions of access between telecommunications service providers or broadcasting distribution undertakings and third-party owners of support structures, including, but not limited to, support structures owned by electricity utilities, municipalities or other parties. Under this new regime, parties should be required to attempt to reach agreement on access, failing which the CRTC should be empowered to resolve any disputes and order access on terms and conditions, including rates, that are binding on both parties.

Where the purpose of the CRTC's ruling is to regulate the ability of Canadian telecommunications works and undertakings to operate effectively, the CRTC should have a pre-emptive jurisdiction over telecommunications use of support structures.

At the same time, the Panel recognizes that provincial regulatory authorities have a valid interest in ensuring that all electrical safety issues are addressed and that the rate set for access to electricity distribution poles compensates the utility and does not adversely affect electricity rates. Therefore, in those instances in which a provincial regulatory body has already established a right to access support structures owned by a utility within its jurisdiction, it is appropriate for the CRTC to take into account the interest of the provincial regulator in setting compensatory rates, and to consult with that regulator before ruling on a support structure rate or terms and conditions of access. In addition, the CRTC should not interfere with terms and conditions that address electricity standards or safety issues.

Recommendation 5-3

The CRTC, prior to making an order to resolve a dispute involving access to support structures owned by an entity that is provincially regulated, should be required to consult with any provincial regulator that has ruled on the relevant terms and conditions of access.

Rights-of-way

Access to rights-of-way over publicly owned property has long been important to the development of telecommunications infrastructure in Canada. The principle that Canadian carriers should be able to obtain access to publicly owned lands for the purpose of extending their networks and providing telecommunications services to the public was enshrined in ss. 43.(2) of the *Telecommunications Act*. Reasonable access to rights-of-way is particularly important in a competitive environment, since new entrants were not able to construct their facilities in the more cooperative environment that existed in earlier days of monopoly service, when municipalities had an incentive to encourage telephone utilities to extend their networks and provide services to the public.

In recent years, with the proliferation of new carriers, municipalities have become more reticent about permitting access rights to multiple carriers, and some have sought to turn their control of local lands into a revenue opportunity. Access restrictions and unreasonable terms of access have been identified by new entrants as a significant barrier to new entry and an inhibitor of network expansion.

While ss. 43.(2) to (4) of the *Telecommunications Act* establish a workable process for the CRTC to resolve disputes between Canadian carriers or broadcast distribution undertakings (BDUs) and municipal or other public authorities, the wording of those provisions has been subject to some of the same criticisms advanced in respect of ss. 43.(5) discussed above.

As is the case of ss. 43.(5), the reference in ss. 43.(2) and (3) to any "highway or other public place" has led to disputes over whether all publicly owned or controlled property is subject to this regime, or just some subset of public property.[6] As previously discussed in respect of ss. 43(5), the Panel is of the view that the CRTC's jurisdiction should be clarified to ensure it extends to all publicly owned or controlled lands.

The Panel believes ss. 43.(4) is also in need of clarification. The current wording of this subsection leaves some doubt about the scope of disputes that the CRTC can entertain regarding access to rights-of-way. Unlike ss. 43.(2), which contemplates entry onto public lands for the purpose of "constructing, maintaining or operating its transmission lines," the powers of the CRTC are described in ss. 43.(4) as pertaining only to the "construction" of such transmission lines. This had led some parties to claim that the CRTC cannot ensure that telecommunications service providers have access for purposes of maintaining, repairing or operating transmission lines once they are installed. Again, the Panel believes this subsection should be amended to make clear the CRTC's power to resolve all facets of such access disputes.

At least one municipality has also submitted that the current wording of ss. 43.(2) to (4) limits the CRTC's authority to order comprehensive arrangements for access to municipally owned property because of its requirement for the CRTC to balance the interests of other users with

[6] See, for example, Telecom Decision 2005-36, Part VII application by Allstream Corp. seeking access to Light Rail Transit Lands in the City of Edmonton, June 17, 2005. This decision is currently the subject of an appeal to the Federal Court of Appeal.

the interest of telecommunications service providers, as required by the provision. Proponents of this viewpoint have argued that each access request within a municipality must be handled as a separate matter. In the Panel's view, this "case by case" approach would be highly inefficient and would add significantly to the time and expense of obtaining the requisite consents or approvals. It would therefore increase barriers to entry and the efficient provision of telecommunications services to the public.

In the Panel's view, the CRTC is capable of balancing the interests of other users in deciding rights-of-way issues and should be empowered to make decisions with approaches that accommodate those interests generally. It is also in the public interest to limit the number of disputes brought before the regulator by establishing general policies, principles or guidelines that can be applied to a wide range of circumstances by the parties.

Recommendation 5-4

The wording of subsections 43.(2) and (3) of the *Telecommunications Act* should be expanded to ensure that the CRTC has the power to resolve disputes and order access to public property of all description. These access rights should be defined to encompass the right to install, maintain, repair and operate all "transmission facilities" as defined in the Act. The CRTC's power to order remedial action in subsection 43.(4) should include access for the purposes of maintaining, repairing or operating transmission facilities, as well as constructing or installing them. Subsection 43.(4) should also be clarified to empower the CRTC to establish and enforce principles of general application that can be used by parties to negotiate broad-based municipal access agreements, which can then be brought to the CRTC for review or dispute resolution if parties are unable to reach agreement.

Support Structures — Antenna Towers

Access to antenna towers, including rooftop antennas, is also critical to the expansion and operation of Canada's telecommunications and ICT infrastructure. Increasing demand for new wireless services and technologies requires the continuing development of fixed and mobile wireless infrastructure. As discussed in Chapter 1, the Panel is convinced that wireless technology is a promising avenue for increased competition in a number of telecommunications markets such as voice services and broadband access. The Panel therefore believes access to antenna towers to be essential for the development of a competitive telecommunications market.

During the Panel's consultation process, a number of parties expressed concerns about the current lack of antenna tower sharing and the difficulties they had encountered in trying to co-locate on existing towers. The Panel is also aware of instances in which a telecommunications carrier has been unable to install a rooftop antenna because another carrier has entered into an exclusive arrangement with a building owner. The Panel considers it essential for these kinds of barriers to market entry and network expansion to be removed, so competitive markets can offer customers a full choice of service providers and services and so the cost of network expansion can be reduced.

In addition to these concerns related to competition, as noted in Industry Canada's "Report on the National Antenna Tower Policy Review,"[7] the proliferation of antenna towers across Canada has raised public concerns regarding the visual impact of antenna structures in both urban and rural areas and the potential effect on human health of exposure to radio energy, as well as concerns about radio interference. These public interest concerns provide further justification for policies that encourage tower sharing and non-exclusive rooftop arrangements.

Because antenna towers are generally owned by wireless carriers rather than by third-party utilities, antenna tower access issues differ from the wireline support structure access issues discussed in the subsection above. However, there is a similar public interest in discouraging the duplication of unsightly towers. Unlike wireline support structures, which are mainly built on public rights-of-way along streets and highways, wireless support structures are often located on private property. In the wireless environment, a choice site is one that provides the optimal coverage of the areas that the carrier wishes to reach. Good site selection can save a carrier the expense of locating more than one transmitter in a given region. For this reason, there is considerable competition among wireless carriers for choice tower locations, or for locations on particular rooftops in urban areas. This competition for sites has led to a practice of obtaining exclusive rights to choice building rooftops in order to gain a competitive advantage.

The Minister of Industry, who currently has exclusive responsibility for regulating tower sitings, requires radiocommunication carriers to conduct meaningful consultations with all local municipalities or land use authorities to develop consensus solutions. The "Report on the National Antenna Tower Policy Review" recommends that Industry Canada should develop and implement policies designed to explicitly encourage the sharing of antenna towers and other support structures for mounting radio antennas. Given the importance of access to antenna towers, the Panel supports the recommendations made with respect to the sharing of antenna towers and encourages Industry Canada to act upon these recommendations.

In this report, the Panel recommends transferring Industry Canada's spectrum management and regulatory functions to the CRTC. This includes the responsibility for, and jurisdiction over, antenna tower sitings. Under Industry Canada's current authority, if a proposed or installed antenna is found not to comply with established antenna siting requirements, the department's primary enforcement tool is for the Minister to amend, suspend or revoke the radio authorization. Although the Minister has this power, it is seldom used, given the harshness of the penalty and potential disruption of service to customers. In transferring authority for regulation of telecommunications antennas to the CRTC, the Commission should be given clear powers to mandate tower sharing under the *Telecommunications Act*. It is expected that this authority will be used only when all other avenues for the parties to come to a reasonable agreement have been exhausted. The CRTC could then enforce antenna sharing through other tools available to it to deter non-compliance, including the new fining powers that the Panel recommends in Chapter 9 of this report.

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

Recommendation 5-5

The CRTC should be empowered to regulate and promote the sharing of antenna towers used for telecommunications purposes, resolve disputes regarding tower access, and enforce its regulations in an effective and timely manner.

In addition to the recommendations made in the "Report on the National Antenna Tower Policy Review," the Panel believes specific recommendations should be made to address the issue of access to rooftops. In the Panel's view, the current ability of wireless carriers to enter into exclusive rooftop arrangements with building owners that prohibit other wireless carriers from gaining access to those rooftops could become a significant barrier to entry that could impact the development of competitive telecommunications markets and increase the cost of new entry. To prevent wireless carriers from limiting access to rooftop antenna locations, the Panel believes the CRTC should be empowered to prohibit wireless carriers from entering into exclusive agreements with building owners, as well as to resolve disputes involving rooftop access. This is consistent with the Panel's recommended approach to regulating building access, which is discussed in the next subsection.

Recommendation 5-6

The CRTC should be empowered to prohibit wireless carriers from entering into exclusive arrangements for locating telecommunications antennas on rooftops and, in those cases where building owners and wireless service providers are unable to agree on terms and conditions of access, should be empowered to resolve the dispute on such terms as it considers appropriate, with its rulings binding on the parties.

Access to Multi-unit Buildings

Telecommunications service providers need access to multi-unit buildings to provide owners and tenants with a choice of telecommunications services and suppliers. In-building wiring, risers and ducts in multi-unit buildings are all part of the "last mile" of telecommunications networks. Unless competing telecommunications service providers have access to these facilities, many of the regulatory reforms introduced by the CRTC over the past decade and many of the new reforms recommended in this report to promote competition may not benefit the large number of Canadian consumers and businesses that rent or own units in multi-unit buildings.

Some building owners have taken advantage of the opportunity presented by the emergence of competing telecommunications service providers wishing to serve multi-unit buildings to restrict access in a selective manner, or to impose onerous terms and conditions for access. These practices have the potential to restrict consumer and business choice of telecommunications service providers, thereby thwarting a key objective of Canadian telecommunications policy.

The CRTC has responded to this problem by developing a framework of regulatory principles governing access to multi-unit buildings and in-building wiring, guidelines for contractual arrangements between building owners and telecommunications carriers, and rules respecting

the use of equipment rooms, risers, ducts and in-building wiring.[8] The framework sets out the terms and conditions that should govern the use of these in-building facilities by Canadian carriers. Parties are expected to negotiate access arrangements in accordance with those principles and apply to the CRTC for relief where agreement is not possible.

The CRTC has indicated that it intends to use the powers set out in s. 42 of the *Telecommunications Act* to enforce these guidelines against building owners who seek to impede access to multi-unit buildings, or who otherwise disregard the guidelines.[9] However, the Commission's jurisdiction under this section of the Act has been challenged in the courts.[10] It is not unreasonable to expect that further legal challenges will be made if the Commission issues this type of order in the future.

The Panel is concerned that a key objective of Canadian telecommunications policy could be thwarted unless competing telecommunications service providers can obtain access to multi-unit buildings and to the equipment rooms, in-building wiring and risers that are required to serve the occupants of such buildings. For this reason, the Panel believes it is critically important for the CRTC to be empowered to establish terms and conditions of access to multi-unit buildings as well as to resolve access disputes.

In the Panel's view, this is too important an issue to be settled by litigation. While the issue of access to multi-unit buildings raises constitutional issues respecting property and civil rights, it is not dissimilar to the issue of access to municipal property and rights-of-way that Parliament has already addressed in s. 43 of the *Telecommunications Act*. The Panel believes there is an equally strong case to be made for the CRTC to be granted the power to establish terms and conditions governing access to multi-unit buildings and to resolve disputes when the parties are unable to reach agreement in accordance with these regulations.

The Panel believes the CRTC's jurisdiction over access to multi-unit buildings should extend from a building's property line to the telecommunications entry point and into the building itself. It should include access to equipment rooms, risers, ducts and in-building wiring located within the building. Since access to the latter facilities will be meaningless unless telecommunications service providers also have access over or under the property on which the building is located, the CRTC's jurisdiction should also include access to support structures on the property that provide access to the building (e.g. poles, ducts or trenches).

Recommendation 5-7

The CRTC should be empowered to establish guidelines for access to multi-unit buildings, including guidelines for the pricing and terms and conditions of access. Telecommunications service providers and building owners should be required to negotiate access arrangements in accordance with such guidelines.

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8 Decision 2003-45

9 Decision 2003-45.

10 *Canadian Institute of Public and Private Real Estate Cos. v. Bell Canada et. al.*, 2004 FCA 243. Available online at: **http://www.crtc.gc.ca/eng/publications/reports/t_review05.htm**. The relief requested was denied on the basis that the legal challenge was premature — the CRTC not having actually exercised its powers pursuant to s. 42, but only having stated its intention to do so.

Recommendation 5-8

The CRTC should be empowered to resolve disputes between telecommunications service providers and building owners respecting access to multi-unit buildings, including access to the building itself from the property boundary, as well as in-building wiring, related ducts, risers and equipment rooms, for purposes of providing telecommunications services to tenants and other users in the building. When the CRTC exercises this jurisdiction, its ruling respecting terms and conditions of access should be binding on the parties.

Network Interconnection

Interconnection between the many different types of public telecommunications networks operating in Canada today is essential to their functioning. The proliferation of technologies based on Internet Protocols (IP) will likely increase the need for network interconnection, in order to provide Canadians with access to the wide range of new applications that can be delivered over IP-based platforms.

The CRTC has the power to regulate the terms of interconnection and access to the facilities of Canadian carriers under s. 29, 40 and 42 of the *Telecommunications Act*. Recommendations regarding the economic regulation of interconnection services are presented in Chapter 3. In addition, the Panel believes the CRTC should continue to address technical issues related to interconnection arrangements and to resolve disputes between parties.

The CRTC established the CRTC Interconnection Steering Committee (CISC) to assist in the development of interconnection standards and arrangements. CISC is an industry working group that includes among its members carriers, service providers, equipment manufacturers and interested members of the public. CISC studies interconnection-related issues at the request of the CRTC or its participants, and reports back to the Commission with recommendations. CISC also assists the CRTC in developing information, procedures and guidelines regarding various aspects of the CRTC's regulatory activities.

Interconnection issues can pose a barrier to entry in telecommunications markets by delaying or preventing the entry of competitors. In a competitive environment, it is critical for the CRTC to be able to address and resolve interconnection-related issues and disputes in a thorough and timely fashion through a working group such as CISC.

The past successes of CISC demonstrate that industry participants can produce timely and effective results by working together to resolve common issues in an open forum. However, during the Panel's consultation process, a number of concerns were raised regarding the current CISC process. The Panel believes that addressing these concerns will improve the effectiveness of CISC.

Concerns were raised regarding the reference of policy issues to CISC for resolution. The Panel believes policy issues should be addressed directly by the CRTC. CISC's role should be to address technical, operational, administrative, and implementation issues on the basis of clear direction from the CRTC.

Concerns were also raised regarding the current level of involvement in and supervision of CISC activities by CRTC staff. Inadequate CRTC staff involvement and lack of supervision can lead to delays in CISC activities and reduce the effectiveness of the CISC process. Ensuring that the CRTC provides appropriate staff resources and active management should improve the effectiveness and efficiency of the CISC mechanism.

In addition, concerns were raised about the length of time it takes CISC to address and resolve issues. Since many of the issues referred to CISC by the CRTC must be resolved in order to increase competition in telecommunications markets, timely resolution of these issues is essential to advancing implementation of the telecommunications regulatory framework envisaged by this report, and to increasing the effectiveness of the CISC process.

Spectrum Policy and Regulation

Industry Canada's spectrum regulation and management activities aim at supporting the orderly development of telecommunications infrastructure and services in Canada by obtaining and providing access to radio spectrum and regulating its use. The department's mandate for spectrum management and regulation derives from the Minister's responsibilities under s. 4, 5 and 6 of the *Department of Industry Act*, and in more specific terms from s. 5 and 6 of the *Radiocommunication Act*, s. 22 of the *Broadcasting Act* and s. 7, 8 and 10 of the *Telecommunications Act*. Its mandate also involves providing support to other federal departments and agencies under certain provisions of s. 7 of the *Emergency Preparedness Act*. Industry Canada's specific spectrum regulation and management functions include: development of spectrum management, regulatory and operational policies and procedures; spectrum authorizations (granting licences for satellite and radiocommunication systems); and enforcement of spectrum-related regulations.

In addition to these regulatory responsibilities, Industry Canada sets domestic spectrum policy, and coordinates spectrum usage and radiocommunication standards with other countries. International treaties and agreements developed by the International Telecommunication Union (ITU) govern the uses of the radio frequency spectrum and deployment of radiocommunication systems around the world, including the orbital positions of satellites in space. As a member of the ITU, Canada has assumed treaty obligations under the ITU Constitution and Convention and Radio Regulations with respect to the regulation of Canadian stations that are capable of causing harmful interference to radio services of other countries.

Through provisions developed under the *Emergency Preparedness Act*, Industry Canada is the lead department for ensuring the integrity and functionality of Canada's telecommunications infrastructure in times of emergency.

Developments in Spectrum Policy and Management

Internationally, there has been a trend among spectrum managers to move away from the traditional prescriptive models of spectrum assignment toward more flexible and market-oriented approaches. This has been done in order to promote innovation, competition and the efficient use of spectrum. The United Kingdom, the United States and Australia are among the countries that have adopted more market-based approaches to spectrum regulation. These countries use auctions as a tool to assign spectrum to users when demand exceeds supply. They are also liberalizing spectrum use and promoting the development of "secondary markets" for spectrum by allowing spectrum trading and lease arrangements. Recently, the European Union's expert group on spectrum, the Radio Spectrum Policy Group, adopted an opinion calling for a more flexible approach to spectrum management.[11] This is seen as an important step forward in developing a market-oriented approach to spectrum management across the European Union.

A summary of the major developments in spectrum policy and management in the United States, the United Kingdom and Australia follows.

United States

In June 2002, the U.S. Federal Communications Commission (FCC) Chair Michael Powell established a Spectrum Policy Task Force[12] to explore improvements in spectrum management. Following consultations, the task force issued a report in October 2002 containing 39 specific recommendations. One of the key conclusions of the report was that problems with spectrum access go beyond the physical lack of spectrum. The traditional "command and control" model of spectrum management is a primary cause of regulatory failure due to the significant restrictions it imposes on spectrum use and users. The report also identified many technological advances, such as cognitive radio,[13] that will allow access to underutilized spectrum and enable more intensive and efficient spectrum use, as well as advances that will allow systems to be more tolerant of interference. The principal recommendations to the FCC were to:

- migrate from the current command and control model of spectrum regulation to market-oriented exclusive rights, unlicensed device and commons models
- implement ways to increase access to spectrum in all dimensions for users of both unlicensed devices and licensed spectrum
- implement a new paradigm for interference protection.

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11 Radio Spectrum Policy Group Opinion (European Union), *Wireless Access Policy for Electronic Communications Services (WAPECS), (A more flexible spectrum management approach)*, November 23, 2005 (RSPG05-102final). Available online at: **http://www.mtib.gov.pl/prezentacje/jednostki/1/dokumenty/rspg05-102_final_opinion_on_wapecs.pdf**

12 Federal Communications Commission, *Spectrum Policy Task Force Report*, United States, released December 22, 2002 (ET Docket No.02-135). Available online at: **http://www.tiaonline.org/policy/filings/02-135.pdf**

13 Cognitive radio is a radio or system that senses, and is aware of, its operational environment and can be trained to dynamically and autonomously adjust its radio operating parameters accordingly (Note: the definition of cognitive radio is under review in many fora).

Since the report was published, the FCC has been aggressively working toward implementing its recommendations through a number of wide-ranging and service-specific rule-making proceedings and inquiries. Examples include improving access to spectrum in rural areas, studying interference immunity performance standards for radio receivers, establishing an interference temperature metric, allocating additional spectrum for unlicensed devices, facilitating cognitive radio technologies, and eliminating barriers to secondary markets in spectrum (e.g. by giving licensees flexibility to lease or transfer their unused or underutilized spectrum rights).

United Kingdom

In November 2004, the Office of Communications (Ofcom) issued a *Spectrum Framework Review*[14] for consultation, with a final statement published in November 2005.[15] The main objective of the review was to develop proposals to enable radio spectrum licence holders to make more efficient use of their spectrum and to encourage innovation and investment in wireless communications services across the U.K.

The consultation recognized that the traditional "command and control" method of spectrum regulation, in which spectrum is centrally managed by the regulator, has become problematic. As demand for spectrum has started to exceed supply, centralized administration has resulted in an inefficient system that has limited innovation and the development of higher-value services. Ofcom concluded that, as a light-touch regulator, its preference should be to move away from central management, allow market forces to prevail and increase the use of licence-exemption. Licence-exemption is a key area for innovation and growth, in areas such as WiFi® and Bluetooth®.

Ofcom's spectrum management vision includes the following:

- Spectrum should be free of technology and usage constraints as far as possible. Policy constraints should be used only where they can be justified.
- It should be simple and transparent for licence holders to change the ownership and use of spectrum.
- Rights of spectrum users should be clearly defined, and users should feel comfortable that they will not be changed without good cause.

Ofcom intends to achieve this vision by:

- providing licence-exempt use as needed in around 6.9 percent of spectrum
- allowing market forces to prevail by introducing spectrum trading (e.g. buying, selling, aggregating or disaggregating spectrum holdings) and liberalizing spectrum use in around 71.5 percent of spectrum
- continuing to manage the remaining 21.6 percent of spectrum using current approaches.

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14 Ofcom, "Spectrum Framework Review," United Kingdom, November 23, 2004. Available online at: **http://www.ofcom.org.uk/consult/condocs/sfr/sfr2/sfr.pdf**

15 Ofcom, *Spectrum Framework Review Statement*, United Kingdom, June 28, 2005. Available online at: **http://www.ofcom.org.uk/consult/condocs/sfr/sfr/sfr_statement**

Ofcom plans to reach these targets by 2010 — an ambitious objective considering it currently has approximately 4.3 percent of spectrum as licence-exempt, 0 percent with spectrum trading and liberalization, and 95.7 percent under "command and control."

Australia

Australia was one of the first countries to recognize the potential for market-oriented approaches to spectrum management. Examples of approaches adopted include: spectrum auctions as a licence assignment tool when demand exceeds supply, market-based pricing through a combination of administrative incentive pricing (a fee formula[16]) and auctions, and secondary markets trading in radiocommunication licences (both spectrum and apparatus licences) including leasing of licences.

In June 2004, the Australian Communications Authority (ACA)[17] published "From DC to Daylight — Accounting for Use of the Spectrum in Australia: A Spectrum Management Strategy."[18] The report was published following the Productivity Commission's Radiocommunications Inquiry Report in December 2002, which reviewed spectrum management in Australia. The Productivity Commission concluded that although Australia has adopted many market-based approaches to spectrum management, market-based reform should be accelerated and extended. The ACA's strategy document outlines key spectrum management issues facing the ACA and outlines a strategy for implementing changes to encourage a progressive shift toward the market-based management of spectrum.

Specific areas for improvement outlined in the Australian strategy document include: spectrum refarming[19] to accommodate new services, encouraging the use of efficient technologies such as ultra wideband (UWB), extending market-based pricing (e.g. in areas where auctions are inappropriate, the ACA expects to make greater use of market information derived from auctions within the administrative pricing model), continuing the policy of using spectrum auctions to allocate spectrum where there is competing demand between users and uses, continued use and potential greater role of secondary trading, and the potential use of spectrum managers for the sale of encumbered spectrum licences.

Canada

Canada has also been moving toward more flexible and market-oriented approaches to spectrum management. Industry Canada has introduced spectrum auctions as a form of competitive licensing and spectrum trading to certain licences. The department has designated spectrum to a use rather than to a user, and regulations and technical standards have been modified over

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16 Administrative incentive pricing mimics the operation of a market. Higher fees apply in areas where there is high demand (congestion) and lower fees apply where there is less demand.

17 In July 2005, Australia merged the responsibilities of the Australian Broadcasting Authority (ABA) and the Australian Communications Authority (ACA) to form the Australian Communications and Media Authority (ACMA), which is now responsible for the regulation of broadcasting, radiocommunications, telecommunications and online content.

18 Australian Communications Authority, *From DC to Daylight — Accounting for Use of the Spectrum in Australia: A Spectrum Management Strategy*, June 2004. Available online at: **http://www.acma.gov.au/ACMAINTER.131456:STANDARD:2045810989:pc=PC_1650**

19 Spectrum refarming is a process of redeploying spectrum from existing users and reallocating it to others.

the past decade to be technology neutral. The department also promotes access to spectrum for new services, such as the increasing demand for licence-exempt applications, and has recently released new spectrum in the 5 GHz range for licence-exempt applications.[20]

In May 2005, Industry Canada initiated a review of Canada's spectrum policy framework.[21] The intent of the review is to ensure that the framework can accommodate the increasing demand for wireless products. The consultation paper invited comments on areas where spectrum management practices could be improved in order to increase the efficiency of spectrum use, enable more flexible use of allocations, and generally facilitate access to spectrum for both licensed and licence-exempt[22] applications for future services and consumer products.

Some specific areas on which the department is consulting are:

- accommodating new technologies such as cognitive radio, software-defined radio (SDR) and ultra-wideband (UWB) technology[23]
- increasing spectrum-usage flexibility (e.g. a licence issued for fixed service could permit the provision of mobile service)
- considering granting longer licence terms and secondary market privileges beyond licences that currently have these privileges
- expanding secondary market privileges to allow lease-type arrangements
- streamlining the first-come, first-served licensing process
- adopting policies and procedures to further facilitate the provision of communications in rural and remote areas (e.g. relaxing technical standards of systems in rural and remote areas).

The Panel supports the intent of the spectrum policy framework review and recognizes that, like other countries, Canada has been moving toward adopting some market-based approaches within its predominantly prescriptive framework for spectrum management. The Panel notes, however, that the move toward adopting market-oriented approaches has been tentative.

The Panel believes there is considerable potential for mobile wireless to become a competitive alternative to wireline voice services, and for wireless broadband networks to provide a competitive alternative to broadband services offered by wireline telephone and cable companies. To ensure that the full potential of wireless is exploited, Canada needs a policy framework that supports a strong and vibrant industry, enhances the efficient use of spectrum and facilitates the adoption

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20 Industry Canada, *Spectrum Utilization Policy for Licence-exempt Wireless Local Area Networks in the 5 GHz Range* (Issue 2), April 2005 (SP-5150). Available online at: **http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/sp5150-i2e.pdf/$FILE/sp5150-i2e.pdf**

21 Industry Canada, *Consultation on a Renewed Spectrum Policy Framework for Canada and Continual Advancements in Spectrum Management*, May 2005 (Gazette Notice DGTP-001-005). Available online at: **http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/spfconsultation2005-e.pdf/$FILE/spfconsultation2005-e.pdf**

22 A radio licence is not required for the use of spectrum, with operation on a no-protection, non-interference basis, and under specific technical parameters.

23 Industry Canada, *Consultation Paper on the Introduction of Wireless Systems Using Ultra-wide Band Technology*, February 2005 (Gazette Notice SMSE-002-05). Available online at: **http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/smse002consultation-e.pdf/$FILE/smse002consultation-e.pdf**

of wireless. It should be a goal of Canadian spectrum policy to ensure that adequate licensed and licence-exempt spectrum is made available in a timely fashion to permit increased choice, encourage innovation and facilitate the deployment of advanced fixed and mobile wireless services with the appropriate level of oversight.

In the following subsection of this chapter, the Panel recommends retaining responsibility for broad spectrum policy with Industry Canada, but transferring its spectrum regulation and management functions to the CRTC. In preparation for this transfer, the Panel believes Industry Canada should develop a new spectrum policy that provides a clear set of policy directions to the CRTC in carrying out its new mandate for spectrum management and regulation. In the Panel's view, key elements of the spectrum policy trends it has observed in other countries — such as greater reliance on market-oriented approaches in order to encourage and enhance the efficient use of spectrum — should be considered for inclusion in the new policy.

Recommendation 5-9

Industry Canada should develop a new spectrum policy to provide clear direction to the CRTC in exercising its new authority to manage and regulate Canada's radio spectrum. The new policy should take into account the work completed by Industry Canada as part of its ongoing spectrum policy framework review, and should ensure that the following areas are addressed:

(a) availability of adequate spectrum to meet demand for deployment of fixed and mobile broadband networks across Canada,

(b) availability of licensed and licence-exempt spectrum for the U-CAN program recommended in this report,

(c) reliance on market-based approaches to spectrum management as much as possible,

(d) establishment of market-based exclusive spectrum rights (i.e. ability to buy, sell and lease spectrum holdings) and elimination of barriers to the development of secondary markets in spectrum,

(e) recovery and "refarming" of previously assigned spectrum that is unused or underutilized in order to accommodate new services,

(f) review of current licence fees to correct fee imbalances that may exist among service providers, separating where practical cost-recovery fees from those fees charged for the use of a limited public resource, and applying market-based pricing for non-auction licences,

(g) streamlining and standardization of licensing processes, and

(h) continued use of regulatory mechanisms such as spectrum caps (aggregation limits) where spectrum is scarce in order to provide an opportunity for new entrants to acquire spectrum and for Canadians to have an expanded choice of service providers.

To ensure there is sufficient legislative authority to introduce the above changes, the *Radiocommunication Act* will need to be reviewed and amended to transfer spectrum regulation and licensing to the CRTC.

Spectrum Management and Regulation

As discussed in Chapter 9, it should generally be the role of government to establish general policies, and the role of the telecommunications regulator to implement these policies in an independent and transparent manner. Currently, two different bodies regulate Canada's communications industry. The CRTC is responsible for regulating the telecommunications and broadcasting sectors, while Industry Canada is responsible for spectrum management and regulation, licensing of satellite and wireless communications services, and regulation of telecommunications equipment and devices. In addition to these regulatory responsibilities, Industry Canada is responsible for Canada's telecommunications policy, including its spectrum policy.

The current mix of policy making and regulatory functions within Industry Canada is something of an anomaly. Canada is one of the few OECD countries where a politically appointed minister remains responsible for spectrum licensing and management. This approach has been abandoned in the United Kingdom, Australia, the United States, most European countries and even in most developing countries. Of the 30 OECD countries, only six have ministries that retain this authority — Canada, Japan, South Korea, New Zealand, Austria and Italy (Table 5-1). More generally, there has been a trend over the past five years among Canada's major trading partners and the majority of OECD countries to transfer responsibilities that were formerly with government ministries to an independent regulatory authority. The key benefits of having an independent regulator include[24]:

- providing more stability in processes
- providing a greater degree of continuity
- allowing for arbitration
- having more effective enforcement powers
- freedom from political pressure.

[24] OECD, *Telecommunication Regulatory Institutional Structures and Responsibilities*, DSTI/ICCP/TISP(2005)6/REV1; September 15, 2005, paragraph 8 (available online at: **http://www.oecd.org/dataoecd/56/11/35954786.pdf**):

> The preferred means to regulate the telecommunications sector for most OECD countries has been through an independent regulator. A number of reasons have been put forward in support of independent regulators: a regulator is preferred in many countries in that in principle it offers a greater degree of continuity (Majone 1997: 153; Gilardi 2002), a regulator often provides stability in processes and allows for arbitration and, in a number of cases, has enforcement powers. Furthermore, a regulator is often free from shorter-term political pressure and the regulatory body can develop a high level of expertise necessary to make decisions on complex questions (Baldwin and Cave 1999: 70).

Table 5-1. Spectrum Management and Licensing Responsibilities, OECD Countries

Country	Spectrum Management and Licensing Responsibility	
	Regulator	Ministry
Australia	✔	
Austria		✔
Belgium	✔	
Canada		✔
Czech Republic	✔	
Denmark	✔	
Greece	✔	
Iceland	✔	
Ireland	✔	
Italy		✔
Japan		✔
South Korea		✔
Luxembourg	✔	
New Zealand		✔
Norway	✔	
Poland	✔	
Portugal	✔	
Slovak Republic	✔	
Sweden	✔	
Turkey	✔	
United Kingdom	✔	
United States	✔	

Source: Derived from OECD, *Telecommunication Regulatory Institutional Structures and Responsibilities*, DSTI/ICCP/TISP(2005)6/FINAL, September 15, 2005, Table 8. Spectrum Management Responsibilities. Available online at: **http://www.oecd.org/dataoecd/56/11/35954786.pdf**

Increased convergence of wireless and wireline telecommunications and broadcasting technologies (e.g. developments such as wireless IP services, mobile TV cell phones, and satellite radio) has changed the context of telecommunications regulation. Because of an increasing need for coordination of regulation, many countries have adopted a more converged regulatory approach. Recent examples include the creation in 2003 of the U.K. Office of Communications (Ofcom), which is responsible for television, radio, telecommunications and wireless communications, and the creation in the same year of the Australian Communications and Media Authority (ACMA), merging the functions of the Australian Broadcasting Authority and the Australian Communications Authority.

The Panel believes, as Canada's major trading partners and the majority of OECD countries have recognized, that the increased convergence of wireless and wireline telecommunications and broadcasting technologies calls for a more consistent and unified regulatory approach. The functions of spectrum licensing, management and enforcement should be assigned to an independent regulator (the CRTC), which is mandated to use transparent procedures in implementing spectrum policy. A transfer of functions meets the increasing need for coordination and streamlining of spectrum, telecommunications and broadcasting regulation as these industries converge, and allows for the development of a high level of expertise capable of dealing with complex and increasingly interrelated issues.

The movement of Industry Canada's spectrum management and regulatory functions to the CRTC would clearly distinguish the role of government — which is to set national telecommunications policies — from the role of the regulator, which is to implement those policies in an independent and transparent manner. As discussed in Chapter 9, a clear division between policy-making and policy-implementing responsibilities should improve the capacity of Canadian government to develop telecommunications policies that respond to the rapidly changing environment. A greater separation between Canada's spectrum policy and regulatory functions has also been supported in a 2002 OECD analysis of Canada's telecommunications industry[25]:

> An argument can also be made that licence allocation, that is the regulation of market entry, should be the task of the regulator, the CRTC, whereas spectrum planning, a policy function, should remain with Industry Canada. There is no evidence that the present structure has caused any conflict. Nevertheless in that wireless communications is increasing in importance a differentiation between policy and regulation, as is the case for the rest of the industry, would be preferable.

A transfer of functions would also be consistent with the principles of the report titled *Smart Regulation*,[26] which states that regulators should strive for the least costly and least intrusive means to achieve policy objectives, avoiding overlap, duplication and inconsistency, minimizing the potential risks of unintended consequences and providing for enforcement that is commensurate with the risks and problems involved.

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[25] OECD, *Regulatory Reform in the Telecommunications Industry: Regulatory Reform in Canada from Transition to New Regulation Challenges* (Paris: 2002), p. 29. Available online at: **http://www.oecd.org/dataoecd/48/28/1960562.pdf**

[26] External Advisory Committee on Smart Regulation, *Smart Regulation: A Regulatory Strategy for Canada*, Report to the Government of Canada (Ottawa: September 2004). Available online at: **http://www.pco_bcp.gc.ca/smartreg_regint/en/08/rpt_fnl.pdf**

Additional advantages that would be gained by transferring Industry Canada's spectrum management and regulatory functions to the CRTC include improved transparency and due process, clarification and integration of responsibilities, increased international engagement and improved enforcement. Each of these advantages is discussed below.

Transparency and Due Process

The CRTC is an independent regulator that follows a well-established, quasi-judicial process to decide matters put before it. This process is viewed as being open and transparent. The CRTC's processes are set out in its Rules of Procedure.[27] The CRTC conducts public proceedings that provide any interested party with an opportunity to participate. These public proceedings may include written comments, evidence and argument, an interrogatory process, as well as an oral hearing or a public consultation component, as appropriate. In addition, CRTC decisions are subject to appeal to the courts on matters of law and jurisdiction. The Panel recognizes that Industry Canada has increased the transparency of some of its processes by conducting public consultations on major policy and licensing decisions. The Panel is nonetheless concerned that the department's decision-making processes may be susceptible to lobbying by interested parties and political pressure. The Panel believes that moving Industry Canada's spectrum management and regulation functions to the CRTC will lead to increased transparency and ensure due process.

Clarification and Integration of Responsibilities

Several participants in the Panel's consultation process noted that there is currently overlap and at times duplication between Industry Canada and the CRTC, which can lead to inefficiencies and inconsistencies. For example, both the CRTC and Industry Canada enforce the Canadian ownership and control requirements that an applicant must meet to be eligible to be a telecommunications carrier (a CRTC responsibility) and a radiocommunication carrier (an Industry Canada responsibility). Because of this, an applicant may be required to go through two separate processes, which potentially could lead to different conclusions. Another example is that anyone wishing to provide broadcasting services must currently apply to the CRTC for a broadcasting licence and to Industry Canada for a related broadcasting certificate regarding technical requirements.

It is not efficient to have applicants expend time and resources to deal with two different organizations to obtain interrelated authorizations. It is also not an efficient use of government resources. Significant efficiencies could be gained if all telecommunications regulation, including spectrum regulation, were integrated and implemented by a single regulatory body.

[27] Available online at: **http://www.crtc.gc.ca/eng/LEGAL/TELEACT.HTM**

International Engagement

The CRTC currently does not play any formal role in developing Government of Canada positions at the International Telecommunication Union (ITU) and in other international fora. The Panel notes that, while there may be discussions between Industry Canada officials and CRTC officials, much of the valuable information that Industry Canada obtains on global issues and trends through involvement in these international fora is often not shared with the CRTC. As a result, the CRTC is quite isolated from other national and international regulatory and policy-making institutions. The Panel believes the CRTC should be engaged with international processes and organizations in order to improve its relationship with the international community and expand its knowledge of international regulatory practices, technology developments and industry trends.

Enforcement

Several submissions to the Panel noted that Industry Canada often shows a reluctance to enforce its licensing requirements, for example, by enforcing rollout commitments made by spectrum licensees as a condition of licence. If a licensee does not comply with its licence conditions, the department's primary enforcement tool is for the Minister to amend, suspend or revoke a radio authorization. This authority is seldom used because of the harshness of the penalty and the potential disruption of service to customers. The CRTC already has a variety of alternative enforcement tools available. In addition, as discussed in Chapter 9, the Panel is recommending that the CRTC's enforcement powers should be broadened to include the authority to impose administrative monetary penalties (AMPs). Moving Industry Canada's spectrum regulatory and management functions to the CRTC would thus provide access to a wider range of enforcement tools.

In summary, moving the functions of spectrum regulation and management to the CRTC will:

- avoid duplication, overlap and inconsistencies
- reduce administrative costs
- allow for harmonized processes
- provide more stability through open and transparent processes free from political pressure
- allow for the development of a high level of expertise able to deal with complex and increasingly interrelated issues
- strengthen CRTC relationships with the international regulatory community (e.g. the FCC and other national regulators, ITU, Inter-American Telecommunication Commission, CITEL) and improve CRTC staff knowledge of global issues and trends.

Recommendation 5-10

The authority to regulate Canada's radio spectrum and to license its use should be transferred from Industry Canada to the CRTC.

Broad responsibility for spectrum policy, as with all policy matters, should remain with Industry Canada. However, implementation of the policy should be exercised by the CRTC, in a professional, independent and transparent manner. This division of responsibilities should provide an opportunity for Industry Canada to enhance its capabilities to advise the government on telecommunications policy in an objective manner, separate from the regulatory and licensing body. The strengthening of Industry Canada's role in policy development is discussed in greater detail in Chapter 9.

Given that spectrum policy and regulation are highly interrelated, the Panel recommends developing broad spectrum policies by Industry Canada in consultation with the CRTC. How to best achieve a consultative mechanism, along with how to implement the transfer of the spectrum management and regulatory functions to the CRTC, will need to be considered prior to the transfer. For example, amendments will be required to the *Radiocommunication Act*, and amendments may also be necessary to the *Department of Industry Act* and the *Emergency Preparedness Act*. Prior to the amendments to the *Radiocommunication Act*, other issues related to the transition of functions and responsibilities from Industry Canada to the CRTC, such as funding, staffing and reporting structures, and logistics, should be addressed. The Panel recommends forming a joint working group to plan the transition and integration of the functions to the CRTC.

Recommendation 5-11

Industry Canada and the CRTC should form a joint working group to plan the transition and integration of spectrum regulation, management and related functions to the CRTC, and to develop a mechanism for ongoing coordination between the two organizations on spectrum policy development.

Telecommunications Equipment

Currently the Governor-in-Council, the Minister of Industry and the CRTC each play a role in the regulation of telecommunications equipment and devices. As noted in the previous section of this chapter, the increased convergence of wireless and wireline technologies, and of telecommunications and broadcasting technologies, favours coordination and streamlining of the accompanying regulation.

The Governor-in-Council can make regulations setting standards for telecommunications apparatus (s. 69.4 of the *Telecommunications Act*) and for radiocommunication equipment and devices (s. 6 of the *Radiocommunication Act*). In practice, Industry Canada acts as the agency responsible for developing such standards. The Minister of Industry also has the power to grant technical acceptance certificates for telecommunications apparatus (s. 69.3 of the *Telecommunications Act*), to set technical requirements and standards for radiocommunication equipment and devices, and to issue licences and technical acceptance certificates in respect of such apparatus (s. 5 of the *Radiocommunication Act*).

The CRTC plays an ancillary role in the regulation of telecommunications equipment and devices via its regulation of telecommunications carriers and their services. The Commission can also regulate matters related to telecommunications equipment as part of its jurisdiction over network interconnection.

Many submissions to the Panel proposed that the regulation of technical equipment and devices should be amalgamated into a single regulatory body. The Panel believes consolidation of these functions will provide benefits by improving economic efficiency, reducing administrative costs, avoiding duplication and overlap, and providing consistency. The CRTC will also benefit from having the engineering and technical expertise of the Industry Canada staff who will be transferred with these functions. The Panel therefore recommends transferring these functions from Industry Canada to the CRTC to increase coordination and reduce unnecessary regulation.

Recommendation 5-12

The regulation of telecommunications equipment and devices should be transferred from Industry Canada to the CRTC. The CRTC should continue to rely primarily on industry organizations to administer equipment certification programs, including authorized certification bodies.

Several submissions to the Panel also noted that the Terminal Attachment Program Advisory Committee (TAPAC), which is currently coordinated by Industry Canada, is a useful forum for industry to discuss technical standards and to provide advice to the government on terminal equipment regulations. However, many noted that its role has diminished over the years and that it is becoming less relevant as the industry increasingly relies on North American and international standards. The Panel believes this program, as well as other telecommunications equipment programs, should be reviewed for relevance prior to being transferred to the CRTC. However, any move toward deregulation in this area should not reduce the responsibilities to protect Canadian consumers and to promote the competitiveness of Canadian industry. Maintaining these responsibilities will include ensuring that Canadian manufacturers' equipment is properly certified for the purposes of the mutual recognition agreements (MRAs) into which Canada has entered.

Recommendation 5-13

Programs related to the regulation of telecommunications equipment and devices should be reviewed by Industry Canada prior to the transfer from Industry Canada to the CRTC to eliminate any unnecessary regulation.