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Voice Over IP Services — Regulatory Perspectives from the Developed and Developing Worlds — Part I

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This article begins a four-part series focusing on the regulatory issues of VoIP. The first part below deals with concerns in the developed world, in particular, Canada, the U.S. and the U.K. The second part will analyze the Canadian Radio-Television and Telecommunications Commission's (CRTC) VoIP decisions. The third part will focus on issues in developing countries. Finally, the fourth part will address the challenges faced by nations in more permissive environments.

McCarthy Tétrault Notes:

As the technology for Internet telephone service (VoIP) matures, and the quality of service improves, regulators in developed and developing countries are encountering significant and very different regulatory challenges. This article examines the issues faced by regulators in developed country markets with a history of extensive service competition.

1. The Issues in Developed Countries

Very similar issues are encountered in a number of developed countries, including Canada, the U.S. and the U.K. For the purposes of this article, the issues identified in regulatory proceedings in Canada will be discussed together with comparisons to similar proceedings or issues in the U.S. and the UK.

1.1 The CRTC’s Communication Using Internet Protocol Proceeding

The CRTC, Canada’s telecommunications regulator, issued a public notice on April 7, 2004, by which it commenced a proceeding to examine regulatory issues associated with the provision of voice communication services using Internet protocol technologies (i.e., VoIP).

In the public notice, the CRTC expresses the "preliminary views" that voice communication services using VoIP which use telephone numbers based on conventional numbering plans and that provide unrestricted access to or from the public switch telephone network, have functional characteristics that are the same as conventional "circuit-switched" voice communication services. The CRTC expresses the related view that such services should be treated for regulatory purposes in the same way as conventional voice communication services, and should be subject to the same regulatory framework.

The CRTC also expresses the following, more specific "preliminary views":

- that VoIP services should be subject to the same principles and practices for tariff regulation as conventional voice communications services;
- that VoIP voice communication services should be subject to the same emergency service access (or 911) and special access for persons with disabilities requirements as conventional voice communications services; and
- that VoIP communications services should be subject to the same obligation to support the cost of service in high cost areas (the "contribution" mechanism used in Canada to achieve universal service objectives) as conventional voice communications services.

In essence, the CRTC’s preliminary view is that voice communication services using VoIP technologies are practically equivalent to conventional voice communication services, and should be subject to the same overall regulatory framework and specific regulatory obligations as those conventional voice communication services. However, the public notice invited comments on the CRTC’s preliminary views and any other issues relevant to determining the appropriate regulatory framework for voice communication services using VoIP.
technologies.

The CRTC conducted a public consultation in connection with this proceeding in September 2004, and received a large number of written submissions from interested parties.

The CRTC recently issued two decisions setting out its final determinations regarding the issues raised in the public notice. These decisions are reviewed in Section 3 of this article.

1.2 FCC Notice of Proposed Rule Making

The issues raised in the CRTC’s VoIP proceeding are similar in many respects to the issues raised in a comparable Notice of Proposed Rule Making (NPRM) issued by the Federal Communications Commission (FCC). In its NPRM regarding “IP-enabled services,” the FCC poses the general question whether VoIP services should be subject to traditional economic regulation and other aspects of the regulatory framework developed for conventional voice communication services.

The NPRM specifically addresses (i) whether VoIP service providers should be subject to the sorts of disability access obligations imposed on conventional voice communication service providers, and (ii) whether VoIP service providers should be subject to equivalent emergency (911) service obligations.

Other issues addressed in the NPRM include:

- the extent to which VoIP service providers should be required to contribute to universal service funding schemes;
- any special consumer protection requirements associated with VoIP services; and
- the extent to which VoIP service providers should be subject to specific tariff regulation.

The NPRM invited industry comment on these and related issues.

The NPRM also references a 1998 report to Congress known as the "Stevens Report," in which the FCC considered the proper classification of IP voice communication services under the Telecommunications Act of 1996. In that report, the FCC declined to render conclusions regarding the proper legal or regulatory framework for VoIP services "in the absence of a more complete record focused on individual service offerings." However, the FCC distinguished voice communications using personal computers and related software to place calls between two computers connected to the Internet, from VoIP services that provided "phone-to-phone" connections having the following characteristics:

- the service provider holds itself out as providing voice communication or fax transmission services;
- customers do not require customer equipment different from the customer equipment necessary to place an ordinary touch-tone call (or a fax transmission) over the public switch telephone network;
- customers make calls using telephone numbers assigned in accordance with the North American Numbering Plan; and
- customer calls and the information conveyed by those calls are transmitted without "net change in form or content."

The early determinations of the Steven’s Report appear conceptually similar to the CRTC’s emphasis on whether VoIP services are practically equivalent to conventional voice communication services.

1.3 OFCOM’s Consultation on New Voice Services

OFCOM, the integrated communications regulator in the U.K., issued a consultation document in September 2004 titled New Voice Services: A Consultation and Interim Guidance in which it expressed initial views and invited related comment regarding issues associated with VoIP services. The following comments taken from the introductory pages of the consultation document illustrate that OFCOM’s issues and concerns are very similar to those expressed by the CRTC and the FCC:

"Some new voice services have the potential to look and feel like traditional telephone services but may not be able to deliver, in the same way or to the same standard, the same features consumers have come to expect as standard. In dealing with this challenge OFCOM has identified its top level aims as follows:

- to help create an environment in which new technologies can be developed successfully in the market, so that consumers can benefit from a wider and more innovative range of services;
- to ensure that consumers are properly informed and protected in relation to the products they are using; and
to limit the extent to which regulation creates distortions in the market.

OFCOM has also identified a number of specific questions, in particular:

- is it desirable for all voice services to be required to offer the same standard features and level of consumer protection as traditional voice services?
- what should we do about access to 999?

OFCOM recognizes that a balance needs to be struck between creating the right conditions in which new voice services and new providers can enter the market and ensuring that consumers are properly informed and protected...

From these introductory comments, OFCOM’s emphasis can be summarized as:

- seeking a balance between encouragement for service innovation and consumer protection (including providing consumers with adequate information to permit informed choice);
- determining how to apply service standards or obligations such as access to emergency services (“999” in the European Union being equivalent to “911” in North America) to VoIP service offerings; and
- ensuring that regulation itself does not create market distortions.

2. Further Examination of Selected Issues

Among the issues that recur in the regulation of VoIP services, and that require further examination, are the need for economic regulation and the technical challenges of providing access to emergency services and services to disabled users. In addition to their inherent importance and public impact, these issues illustrate the dual themes of treating analogous services comparably, while recognizing and providing for practical differences between VoIP and conventional services.

The selected issues will be examined using submissions in the CRTC’s VoIP proceeding, and the circumstances and arguments raised in some of those submissions.

2.1 The Need for Economic Regulation

Among the many aspects of economic regulation of telecommunications carriers and service providers is the recurring issue of the need to protect the public interest where a carrier or service provider has significant market power or dominance in a particular telecommunications market. As the CRTC said on an earlier occasion:

"The Commission does not share the view that the current circumstances warrant that it apply the same regulatory treatment to all Canadian carriers providing similar services. In the opinion of the Commission, Canadian carriers that provide, or that traditionally have provided, public-switched local telephone service on a monopoly basis (hereafter, referred to as ‘the Telephone Companies’) are in a position to exercise a significant degree of market power. In this context, the Commission notes that the Telephone Companies, as indicated, in previous decisions, have control over access to bottleneck local services, and are in a position to exercise that control in a manner that could foreclose or diminish entry to the detriment of users, including competitors."

Similar observations are set out in the FCC’s IP-enabled Services NPRM:

"We also seek comment on whether various traditional economic regulations set forth in Title II and Commission rules should be applied to any class of IP-enabled service provider. Among other things, Title II requires all common carriers of inter-state or foreign communications by wire or radio to provide those communications upon reasonable request at rates, classifications, and practices that are just and reasonable; prohibits common carriers from unjustly or unreasonably discriminating in charges, practices, classifications, regulations, facilities, or services against similarly situated third-party customers; and, requires providers of telecommunications service to interconnect directly or indirectly with the facilities and equipment of other such providers. While several of the regulatory obligations discussed in this Notice may have general applicability to any entity that seeks to offer voice services, many of the economic regulations set forth here have been written to apply specifically to cases involving a monopoly service provider using its bottleneck facilities to provide services to a public that is without significant power to negotiate the rates, terms and conditions of those services. With the advent of competition in markets for telecommunications services, the Commission has tailored the application of these requirements, reserving application of the most stringent for carriers considered dominant."
The question arises whether VoIP services should be subject to economic regulation, particularly price regulation. In determining this issue, regulators such as the CRTC and FCC continue to draw a distinction between VoIP services offered by incumbent, dominant network operators and services provided by competitors that do not have significant market power. In the CRTC’s VoIP proceeding public notice, the Commission summarizes its history of granting forbearance from price regulation to competing providers of local and long distance voice communications services that are unable to exercise significant market power, while retaining tariff regulation for incumbent network operators that continue to exercise significant market power. In the public notice, the Commission concludes that where incumbent carriers provide VoIP services in the geographic markets in which they have continuing dominance, those services should be subject to otherwise applicable tariff and price regulation requirements. Conversely, competing carriers or service providers, and incumbent carriers operating in geographic markets in which they do not have significant market power, should not be required to file tariffs for VoIP services.

The industry submissions in the CRTCs’s VoIP proceeding further develop these issues and regulatory concerns. The perspective of the incumbent carriers can be seen in the submission made by Bell Canada and other incumbent companies. In its submission, the companies argue that the advent of VoIP services significantly changes the retail voice communications services marketplace and calls for the commission to exempt VoIP services from price regulation, even where those services are provided by the incumbent companies in their home territories. The companies base their call for forbearance from price regulation on a number of arguments including:

- that the supply of VoIP services is highly competitive, with low barriers to entry (particularly given that VoIP service providers do not need their own transmission facilities);
- that in VoIP markets specifically, incumbent carriers have very small market share and thus do not have market power; and
- that VoIP services, depending on the market and configuration, are either within the category of retail Internet services (already forborne from price regulation in Canada); or, where bundled with IP network access offerings for business customers, are supplied in a highly competitive market.

Telus Communications Inc., another incumbent carrier, argues for price regulation forbearance on the basis of the “access-independent” nature of VoIP services. Telus describes the access-independent nature of VoIP services in the following terms:

“VoIP changes voice from a service associated with a particular network infrastructure to an application that runs on virtually any data network. VoIP is access-independent, decoupling voice service from the underlying access network. That is, VoIP services are provided independent of the method of access. Customers may choose among a variety of high-speed access networks: digital subscriber line (DSL), cable modem or wireless, to access the Internet, and via that connection to access a variety of VoIP services. These voice services operate at the Internet’s ‘application layer’, quite separate from the physical access and transport layer provided by network access providers such as ILECs (incumbent carriers), cable companies, and wireless service providers. As such, access-independent VoIP services share many characteristics with other Internet applications, such as email and instant messaging services (many of which feature voice capabilities).”

In essence, Telus argues that VoIP services must be recognized as an information technology application that operates on an underlying telecommunications service, and that is distinct from the underlying telecommunications service. Accordingly, since the supply of VoIP services as an information technology application is highly competitive, VoIP services themselves should not be subject to price regulation. However, where appropriate, price regulation would continue for the underlying telecommunications service (i.e., the service that permits connection to the Internet).

The perspective of competing carriers (i.e., telecommunications carriers that compete with the incumbent companies) can be seen in the submission filed by MTS Allstream Inc. In its submission, MTS Allstream largely agrees with the Commission’s preliminary views as set out in the public notice, particularly including the preliminary view that incumbent carrier VoIP services should be subject to existing tariff regulation. MTS Allstream makes a number of arguments in support of its position, but its overall perspective can be summarized as follows:

“ILECs such as Bell Canada and Telus are replacing their digital switches with packet data switches because these switches can carry all of this traffic on one switching platform. But none of these developments have changed the elemental need for a local network that is capable of switching or routing traffic between two different points on the network. Whether circuit switched or packet switched, the PSTN remains a bottleneck transmission network which will continue to be used to originate and terminate the vast majority of customer traffic for many years to come. For the time being, therefore, the delivery of voice service using conventional circuit switching technology will remain the most pervasive and prevalent form of voice telephony service in Canada. But none of this, of course, detracts from the fact that the ILECs continue to be dominant in the local market and that this dominance will continue for some time to come regardless of how they choose to deliver voice services. Accordingly, to view VoIP as anything other than what it is, namely a local telephone service
delivered over an upgraded network, would be to lose sight of the Commission’s policy of regulating the services of dominant service providers and not the technologies which underlie those services.”

2.2 Emergency Services, Privacy Protection and Services for Disabled Users

Emergency Services

Emergency services are the means of accessing police, fire, ambulance and similar services using the 911 number in North America and 999 in the U.K. (and other European countries). The importance of subscriber access to these emergency services is not questioned by anyone in the industry, including VoIP service providers. The problems associated with emergency services and VoIP services stem from the fact that VoIP services have ‘nomadic’ and non-geographic characteristics that can create difficulty in determining the true location of a specific user at a particular time.

The ‘nomadic’ characteristics of VoIP services result from the fact that the individual consumer can use the equipment and broadband Internet connection from any location, and not just from a fixed residential or business address. For example, a subscriber might sign up for VoIP services on the basis of his or her home broadband Internet connection and make the majority of his or her telephone calls from that location. However, that subscriber might also travel with the gateway device and other terminal equipment (either the equivalent of a conventional telephone handset, or ‘softphone’ installed on a laptop computer) and use a broadband Internet connection at a different location to access and place calls using the VoIP service.

Another feature of VoIP services is that they permit a subscriber to be assigned an exchange number that appears, and that functions, as a local exchange number in a geographic service area that is distant from the subscriber’s billing address and physical location. Again, by way of example, a subscriber located and registering for service in Toronto, Canada can be issued a number that appears and functions as a local exchange number in Los Angeles, California. Calls to that number would be routed to terminal equipment located in Toronto, Canada (or anywhere else the subscriber chooses).

Emergency services typically function by using the signalling information embedded in a telephone call to route information about a subscriber directly to the ‘public service answering point’ (PSAP) that serves the subscriber’s location. For example, when a subscriber in a neighbourhood in Toronto, Canada dials 911, information about him or her is automatically directed to the PSAP serving the relevant area, including the physical location of the subscriber associated with the telephone number.

In a conventional fixed line telephone service environment, the subscriber’s location will not change unless he or she moves to a new residence or office (in which case his or her information will be updated by the service provider). The subscriber’s location is uniquely associated with a specific address or physical location. As indicated above, the nomadic and non-geographic aspects of VoIP services mean that subscribers using VoIP services to place emergency service calls might be located somewhere other than the residential or business address recorded by the service provider for that subscriber. Accordingly, a risk does exist that emergency services could fail to locate the subscriber or could be dispatched to the wrong location.

Pending other technological developments, interim solutions to these problems include the following:

- ensuring that VoIP service subscribers understand the potential complications associated with access to emergency services and the use of VoIP services on a nomadic or non-geographic basis;
- providing VoIP service subscribers with convenient ways to update the service provider’s record of the subscriber’s location (e.g., using a web-based location updating tool as part of the service management system); and
- using call centres as an intermediary between public safety answering points and individual subscribers, so that emergency calls are directed to a call centre agent who either verifies the caller’s location and then contacts the emergency service; or, at a minimum, ensures that the most current information about a subscriber’s location is available to the person responding to the emergency call.

It can be noted that emergency service limitations are not unique to VoIP services. Subscribers to mobile wireless services are, by definition, not limited to a single location. These subscribers require the development of special practices or technologies to direct emergency services as closely as possible to the subscriber’s actual location.

Services for Disabled Users

Perhaps the best example of disabled user access is the use of Message Relay Service allowing hearing-impaired subscribers to communicate with others using operator intervention. A hearing person who wishes to communicate with a hearing-impaired person dials a toll-free number to be connected to an operator who contacts the hearing-impaired user and relays the communication using a teletypewriter device. Conversely, a hearing-impaired person uses a teletypewriter and contact through the intervening operator to communicate.
with a hearing person.

Technical interfaces between teletypewriter devices and IP-based technologies are still under development, meaning that conventional Message Relay Service is not feasible for at least some VoIP service configurations at the present time. It has been suggested that VoIP service providers might be able to provide a functionally equivalent means of text to speech and speech to text intervention using web-based facilities (or by using an instant messaging application). However, another view favours a Message Relay Service-based solution given the familiarity of teletypewriter devices in the hearing-impaired community.

Privacy Protection

Providers of conventional voice telephone services are typically subject to a number of privacy requirements, including the blocking of calling line identification information and disabling of call return features. Depending on the technologies and service configuration used by a VoIP service provider, implementing these privacy protections may not be feasible at present. Accordingly, regulators need to assess whether these privacy protections are absolutely required (in which case technologies or service configurations which cannot comply would not be permitted); or whether a more flexible approach can be taken, perhaps accompanied by clear communication to subscribers of the service limitations.