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VoIP Regulation in Canada

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VoIP Regulation in Canada

Marcel Boyer^{*}, Catherine Mercier[†]

Résumé / Abstract

Le CRTC a récemment publié la décision *Cadre de réglementation régissant les services de communication vocale sur protocole Internet* (Décision 2005-28) dans laquelle il fixe les paramètres du régime de réglementation qui régira la fourniture des services VoIP. Nous présentons d'abord un aperçu de la Décision 2005-28 ainsi que les positions des entreprises de services locaux titulaires et des nouveaux concurrents. Finalement, nous commentons ces interventions à la lumière de la théorie économique de la réglementation et de la théorie de la concurrence stratégique. Nous concluons que le modèle dominant sur lequel s'appuient non seulement la position du CRTC, mais également celles des parties intéressées, y compris les entreprises elles-mêmes, les entreprises de services locaux titulaires et les nouveaux concurrents, et leurs conseillers d'affaire, ne résiste pas à l'analyse économique moderne.

Mots clés : concurrence stratégique, réglementation, télécommunication
VoIP

The CRTC recently released Regulatory Framework for Voice Communication Services using Internet Protocol (Decision 2005-28), Telecom Decision CRTC 2005-28, setting out the details of the appropriate regulatory regime applicable to the provision of VoIP services. We present a brief overview of Decision 2005-28, we then consider the positions of incumbents and competitors, and finally we comment on the above interventions in light of the economic theory of regulation and the theory of strategic competition. We conclude that the predominant model underlying the positions not only of the CRTC but also of the parties involved, including the firms themselves, both the incumbents and the new entrants, and their respective business consultants, do not stand the test of modern economic theory.

Keywords: *regulation, strategic competition, telecommunications, VoIP*

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1. INTRODUCTION

The CRTC recently released *Regulatory Framework for Voice Communication Services using Internet Protocol* (Decision 2005-28), Telecom Decision CRTC 2005-28, setting out the details of the regulatory regime applicable to the provision of VoIP services, which it defined as voice communication services that use North American Number Plan (NANP) conforming telephone numbers and that provide universal access to and/or from the public switched telephone network (PSTN). In this Decision, the Commission affirmed its intention to regulate VoIP services provided by incumbent local exchange carriers (ILECs) until the local telephony marketplace is sufficiently competitive. While this determination is not surprising given the Commission's preliminary views on the regulatory regime applicable to the provision of VoIP services, expressed in Public notice 2004-2, it is not however without controversy.

Essentially, the ILECs believe that it is in the best interests of consumers for local VoIP services provided by ILECs to be entirely deregulated so that market forces can determine service offerings and pricing. The Commission believes that it would not be appropriate, at this time, for ILECs to provide local VoIP services outside the tariff regime. The Commission concludes that VoIP services should be regulated as local exchange services and that the regulatory framework governing local competition should apply to local VoIP service providers, except as otherwise provided in Decision 2005-28.

This paper aims to comment on the CRTC decision on regulation of VoIP services. Section 1 presents a brief overview of Decision 2005-28. We then consider the positions of incumbents and competitors. Section 2 is a summary of Rabeau's study of the conditions for successful introduction of VoIP in Canada. Section 3 summarises Bell Canada's submission to the Telecommunication Policy Review panel. In section 4, we examine Boyer's commentary on the measure and regulation of competition in telecommunication markets. Finally, in section 5 we comment on the above interventions in light of the economic theory of regulation and the theory of strategic competition.

2. OVERVIEW OF CRTC DECISION ON REGULATION OF VOIP SERVICES

In this Decision, the Commission renders its determinations in the proceeding initiated on April 7, 2004 by Telecom Public Notice CRTC 2004-2, which set out the Commission's preliminary views with respect to regulation of VoIP services.

2.1 VoIP service category

In Public Notice 2004-2, the Commission referred to VoIP services as a broad category, which it described as those services that use North American Number Plan (NANP) conforming telephone numbers and that provide universal access to and/or from the public switched telephone network (PSTN). VoIP services do not include P2P services. In this proceeding, Bell Canada, Aliant, SaskTel and Télébec (collectively, the Companies) referred to P2P services as Category 1 services and submitted that VoIP services should be seen as falling into three categories:

- Category 2 VoIP services, which are services that operate over a broadband Internet connection obtained by the customer from a supplier of choice and that enable the customer to make and receive calls to or from the PSTN and, typically, as well as to and from other broadband connected users;
- Category 3 VoIP services, which are IP services that provide the ability to make and receive voice calls to and from the PSTN, as well as to and from other connected users that are supplied with an underlying connection, other than a retail Internet connection, to the service provider's network; and
- Category 4 VoIP services, which are IP business services offered over network access facilities (LAN, WAN), either provided by the service provider or by another party, connected to the service provider's IP network and which do not utilize retail Internet services for connection to the service provider's network.

TELUS divided VoIP services into two categories (that did not encompass P2P services):

- Access-independent VoIP services, being services which do not require that the service provider provides the underlying network on which the service rides, and which

do not require the service provider to obtain the permission of the network provider to offer the service application to customers of that network; and

➤ Access-independent VoIP services, being IP based VoIP services in which access and service are necessary linked, as they are provided by simply changing the underlying technology of the local access network from circuit-switched to packet-switched.

The Companies and TELUS agreed that the Company's category 2 VoIP services were equivalent to the TELUS access-independent VoIP services, and that the Company's Category 3 VoIP services were equivalent to the TELUS access-dependent services.

2.2 Applicability of existing retail IS forbearance determinations

The Companies and Telus requested that the Commission confirms that certain VoIP services were already subject to existing forbearance determinations for retail internet service (IS)¹. The Companies and Telus submitted that Category 2 or access-independent VoIP services are IS, delivered over retail Internet connections. They contended that, like other retail IS, these VoIP services are forborne pursuant to Order 99-592, in which the Commission forbore from the tariff pricing regime retail IS provided by carriers that were not already subject to a retail IS forbearance decision.

The Commission considered that the defining characteristics of VoIP services, which distinguishes them from retail IS, is that in order to connect users, their points of origination and termination are addressable by NANP numbers and their international equivalents, allowing for the ability to connect to anyone on the PSTN. The Commission considers that the primary function of Category 2 VoIP services is not accessing the internet, but rather is accessing the PSTN in order to make and receive telephone calls.

¹ Under the current *Telecommunications Act*, the CRTC has the power to decline to regulate. This option, known as forbearance, is selected in circumstances where the regulatory authority considers the market to be sufficiently competitive already.

Consequently, the Commission concluded in this Decision that its existing forbearance determinations relating to retail Internet services did not apply to VoIP services, and declined to exercise any power to forbear from the regulation of VoIP services at this time.

2.3 Request for forbearance from regulation

In considering the requests of the Companies and Telus for forbearance from regulation of local VoIP services, the Commission had to determine if forbearance would be consistent with section 34 of the Act. In applying that section in the present proceeding, the Commission used two separate approaches. The first approach uses an analytical framework based on principles commonly used in economics and competition policy, initially set out by the Commission in Telecom Decision CRTC 94-19. The second approach considers the arguments presented by parties seeking forbearance under section 34 of the Act that were not necessarily advanced within the Decision 94-19 framework.

2.4 Analysis based on Decision 94-19 framework

With respect to this approach, the determination of whether or not to forbear from regulating a service or class of services is based on a determination of the relevant market in which the service(s) is (are) offered and on whether the ILECs have market power in that market. The relevant market is the smallest group of products and geographic area in which market power can profitably impose a sustainable price increase. There cannot be sustainable competition in a market in which a firm possesses substantial market power. Market power can be demonstrated by the ability of a firm to raise or maintain prices above those that would prevail in a competitive market.

Based on Decision 94-19 framework, the Commission determined that it would be inappropriate to refrain, at this time, from the exercise of any power in relation to local VoIP services offered by the incumbents.

2.5 A separate section 34 analysis

The second approach was to consider the arguments by parties seeking forbearance. With regard to arguments concerning the capacity of cable companies to emerge as strong competitors in VoIP services, the Commission recognized that cable companies possess certain strengths comparable to those of the incumbents. These include large and established customer bases, experience in operating an IP network infrastructure, an access connections to households. But noted that cable companies also face certain obstacles that the incumbents do not face and that the incumbents have certain advantages not shared by cable companies. For example, the cable company's existing shared cable network must be upgraded in order to offer quality local exchange service currently offered by the ILECs and expected by customers. Furthermore, the Commission noted that cable companies -with the exception of EastLink- have virtually no experience in either the residential or business market for local exchange services, and will therefore have to build expertise in serving telephone customers. Processes related to customer transfer, including number portability, directory listings, operator services, E9-1-1, and billing, will have to be implemented successfully.

With regard to the argument that Category 2 providers are already providing vigorous competition for local VoIP services at low prices, the Commission was in the view that it was too early to draw conclusions about the state of competition, given the early stage of the development of category 2 VoIP services.

With regard to the argument that it would be irrational for the incumbents to engage in below-cost pricing, the Commission concluded that it could be rational to expect the incumbents, in a forbore environment, given their current dominance in the provision of local exchange services, to seek to protect their dominant position.

With regard to the argument that the forbearance from regulating VoIP services would encourage investment, innovation, risk-taking, a greater reliance on market forces and the international competitiveness of the Canadian telecommunications industry, the Commission considered that, in a forbore environment, the incumbents are already making the

investments necessary to migrate their networks to internet protocol technology and will continue to do so. Moreover, the Commission was in the view that there was nothing in the current regulatory environment that impedes incumbents from using the opportunities provided by internet protocol to offer new and innovative services.

The Commission considered that if forbearance were granted prematurely, the incumbent's ability and incentive to engage in the combination of targeted below-cost pricing of local VoIP services, as well as bundling strategies, prior to the entry and roll-out of other facilities-based competitors, would have a material negative impact on the potential sustainable competition in the provision of local VoIP services, and therefore on the protection of the interests of users. Accordingly, the Commission concluded that it would be inappropriate, at this time, to extend the forbearance regime to local VoIP services.

In light of the foregoing, the Commission denied the companies and Telus's requests for forbearance from the regulation of local VoIP services. The Commission determined that local VoIP services should be regulated as local exchange services and that the existing regulatory framework governing local competition applies to local VoIP service providers, except as otherwise provided by this decision. Regulatory framework.

2.6 VoIP Regulatory Framework

The Commission addressed particular issues relating to the implementation of the regulatory framework applicable to VoIP services, including the registration of VoIP resellers, access to numbers and local number portability, directory listings, equal access, win back rules, access for the disabled, message relay service, privacy safeguards, tariff filing requirements, regulation for non-dominant carriers, regulation of VoIP services in territories where local competition is not permitted and IP interconnection.

Among other things, the Commission determined that VoIP services are contribution-eligible, and that existing subsidies are available to VoIP service providers that meet existing rules and requirements.

The Commission addressed issues relating to access and determined that the provision of VoIP services is subject to all existing applicable forbearance determinations.

The Commission considered that local VoIP service providers operate as local VoIP resellers, and directed that all VoIP service providers that are not operating as Canadian carriers register with the Commission as resellers.

The Commission concluded that existing directory listing requirements for ILECs, CLECs and resellers will also apply when they provide local VoIP services. Directory listing should appear in the local directory where calls to and/or from that number are local calls, regardless of the geographic location of the customer's service address.

3. SUMMARY OF THE NEW ENTRANTS' POSITION: RABEAU'S ANALYSIS (2005)

In a recent study, Yves Rabeau analyses the conditions for successful introduction of VoIP services in Canada. He concludes, as the Commission in Decision 2005-28, that it is premature to allow ILECs to provide local VoIP services outside of the tariff regime. However, recognizing that the existing regulatory regime is already too cumbersome, Rabeau concludes that all that is needed to make competition in local telephone service possible is to maintain the regulatory safeguards already in place. This section is a summary of Rabeau's study.

3.1 Impact of competition on the Telecom Market

Rabeau first characterizes the regulation of telecommunication services in Canada. Since VoIP services are a technology which have the potential to create a truly competitive market for local exchange services, Rabeau focuses on the rules governing local competition. He then examines the effect that the existing regulatory regime has had on competition in the long-distance and local telecommunication markets.

3.1.1 Long distance

In 1992, the long-distance market was opened up to competition. As Rabeau notes, subsequent to the introduction of competition, two main types of competitors have entered the market: the resellers, that lease capacity from the incumbents at reduced rates and resell to consumers, and the companies that use their own infrastructures and their own technology to compete with the incumbents. Rabeau considers that these new competitors never succeeded in becoming financially viable. He notes that many firms asked for bankruptcy protection, in spite of industry consolidation. He further notes that the competitors continue to rely largely on the incumbent's facilities and services in order to serve their customers. According to Rabeau, this situation has created a kind of artificial competition, which drives prices down without creating value for the users. After more than ten years of competition, the results suggest that new competitors in the long-distance market have generally had to absorb losses and that the consumers have been the beneficiaries of lower prices and new services.

Rabeau then examines the position of the incumbent in the long-distance market. In his view, while the lower long-distance rates have exerted pressure on the profitability of the incumbents, the relative advantage of their footprint and their quasi-monopoly position in the local exchange services have enabled them to stabilize their finances and compensate for the loss of long-distance revenues by various means. An example of powerful instrument that has been used by incumbents to maintain their market position and their profits is extensive bundling of services.

Rabeau finally addresses issues relating to the VoIP technology. He notes that with the introduction of VoIP technology in the voice market, the long-distance revenues are expected to disappear. However, he believes that the incumbents have been able to use some reactive strategies to protect their market shares or profits. This would illustrate the continuing competitive asymmetry in the telephone market.

3.1.2 Local market

Rabeau then considers the impact of the existing regulatory regime on the local market. In 1997, the CRTC issued a major decision on competition in the local market (Telecom Decision CRTC 97-8). In this Decision, the Commission determined the rules governing competition in the local market. These rules were intended to create a level playing field for market entrants. Given the incumbents still have nearly 96% of the entire local market and roughly 98% of the residential market, Rabeau concludes that the dominance of the incumbents in the local market has remained essentially unchanged since the introduction of competition in 1997.

During the September 2004 CRTC hearings on VoIP services, the incumbents argued that wireless telephone service is the real competition in the local market. Rabeau agrees with the incumbents that in the long term competition in the local loop will become technology-driven. However, according to Rabeau, neither wireless technology nor the market have yet reached that stage of development.

Moreover, given that the incumbents in Canada are also major players in the wireless market, Rabeau considers that they may encourage their own costumers to migrate to wireless when they no longer wish to subscribe to two telephone services and when market conditions make the switch profitable for the company. This ability to manage consumers would be a major competitive advantage over competitors whose offerings are not as wide-ranging and which are not always in position to provide bundled services adapted to different customer groups.

Between 2000 and 2003, the CRTC lowered the service fees that new competitors must pay incumbents in order to provide local services in order to encourage new players to enter the market. In 2001, it authorized a 39% reduction in fees for unbundled services on the local loop. In 2002, the CRTC also granted prospective new competitors a decrease in the incumbent's mark-up on various services. More recently, in Decision 2005-28, the CRTC extended the range of digital network services that the incumbents must provide to their competitors at cost-based rates. Despite these efforts, however, the number of new players to

the market have not increased to any significant extent. According to Rabeau, this may be explained by the presence of network effects and the fact that the CRTC's rate-setting decisions must take into account the principle of universal access to basic telephone service. In the rate rebalancing process, this consideration has led the CRTC to set rates as low as possible and therefore close to the incumbent's costs. This has had on negative effect on the entry of new competitors into the local market. Rabeau argues that one possible explanation for the small number of competitors to date in the Canadian local market is that the rates are close to marginal cost. A competitive market equilibrium would have been established at a level where there is virtually no profit to be made by new players using the same or similar technology. The fact that neither incumbent has entered the other's residential market would be a strong indication that this is indeed the case.

Rabeau is of the view that entering the local market with a technology other than the one used by the incumbents is possible provided that the required investments can be recouped, while charging customers a lower rate than the incumbents so as to induce them to change their local service provider. Rabeau concludes that price is a key consideration if a service of equivalent quality is being offered using another technology.

The Companies argued that cable companies would emerge as strong competitors for the provision of local VoIP services. With regard to this argument, Rabeau notes the cables companies face certain obstacles. The fact that the rates are close to marginal cost in Canada has made it difficult for players, such as cable companies, using a different technology than the incumbents to enter the market.

Finally, the fact that the incumbents dominate the telecommunication market as a whole with 70% of revenues from all market segments would, in Rabeau's view, suggest that with the arrival of VoIP in the marketplace the playing field is not level. Rabeau argues that the incumbent's dominant position in the local market segments would create an asymmetry that must be temporarily corrected until the competitive market makes it possible for the CRTC to apply the forbearance principle. Rabeau therefore agrees with Decision 2005-28's conclusion that it is essential that the regulator maintain for some time yet a regulatory framework that

enables different players to enter the market. The forbearance principle could apply once competition has reached a level sufficient to let the market determine prices.

3.2 Conditions for genuine competition in local telephony service in Canada

Rabeau then discusses the conditions for successful introduction of VoIP in Canada.

3.2.1 The technological opportunity

When the local telephone market was opened up to competition, the CRCT wanted to promote market entry by new players that would invest in infrastructure. To date, this objective has not been achieved. In Rabeau's view, in the modern telecommunications industry, competition will develop through investments in new technologies and facilities. Rabeau therefore agrees with the Commission not to promote the entry into the local market of resellers that would have leased infrastructure from the incumbents in order to sell the same service at a lower price.

3.2.2 Competition and the players in the market

Rabeau considers that to support and promote competition between network operators, market conditions that create a level playing field for all parties are needed. Rabeau believes that if the provision of VoIP services was deregulated prematurely, a competitive asymmetry would be created that would prevent all players from investing to offer new services in the marketplace. According to Rabeau, this asymmetry must be corrected until a competitive market emerges that makes it possible for the CRTC to apply the forbearance principles.

3.2.3 Regulatory environment

According to Rabeau, the impact of immediate, complete competition in VoIP services should not be underestimated. First, in Rabeau's view, given that the incumbents continue to dominate the telecom market and are capable of implementing various strategies to maintain their market position. The incumbents would be able to manage the migration of their customers to VoIP services. They would have powerful means at their disposal to thwart competition. Second, the incumbents would be able to reinforce their positions in telecommunications market and their dominance would deny customers a choice and access to

services that new market players could develop and adapt to the needs of their target customers. This would reduce Canada's telecommunication competitiveness.

To prevent such outcomes from happening, it is of fundamental importance that the regulator maintain for some time a regulatory framework that enables different players to enter the market. The forbearance principle could apply once competition has reached a level sufficient to let the market determine prices.

Rabeau believes however that adding new rules to the regulatory framework would make it more cumbersome. Rabeau therefore agrees with the Commission's view that all that is required to foster competition in local telephone service is to maintain the existing regulatory safeguards. As noted by Rabeau, this prevailing environment is basically designed to prevent, by means of provisions such as floor prices and imputation tests, the dominant players in the local market from engaging in practices that would restrict competition and make it difficult for competitors to enter. These safeguards are vital in order to level the playing field to some extent for players in a market strongly dominated by the monopoly incumbents. In Rabeau's view, the CRTC was correct in Decision 2005-28 to delay the move to full competition in VoIP services that incumbents such as Bell were calling for. The safeguards established to support development of competition remain a necessary provisional framework that could be abandoned, as in the case of long-distance services, once competition in the local market has reached what is considered a sufficient level.

As noted by Rabeau, this is not to say that maintaining these rules would guarantee the success of the new competitors in the marketplace. They would not only have to invest in facilities but also wage a costly marketing battle to lure customer away from the incumbents in the local market.

4. A SUMMARY OF BELL CANADA’S SUBMISSION TO THE TELECOMMUNICATION POLICY REVIEW PANEL

The Telecommunication Policy Review panel (TPR panel) has been asked by the Government to “...make recommendations on how to move Canada towards a modern telecommunications framework in a manner that benefits Canadian industry and consumers.” The TLR panel in turn asked for comments on the current state of the telecommunications sector and the way it’s regulated. Bell Canada recently released its submission to the TLR panel. This submission puts forward a comprehensive proposal relying on market forces for economic regulation while recognising the role of the Commission in social and technical regulation. This section summarises Bell Canada’s submission.

4.1 A need for a renewed regulatory framework

Bell Canada considers that Canada’s current telecommunication regulatory framework is based on a public-utility model that is outdated and not appropriate given the significant changes characterising the telecommunication industry.

The key failing aspects include:

➤ The existing regulatory regime is too cumbersome and all encompassing. This would prevent enterprises from introducing new service offerings or innovations at the appropriate time. Before these companies take any action in the market, they must demonstrate that their action would be neither anti-competitive nor anti-consumer. Given the significant changes in the telecommunications industry, it is in Bell Canada’s view that prior approval is no longer appropriate.

➤ The current regulatory regime is also based on rules that specify permissible and prohibited activities. These rules tend to be prescriptive and inflexible, which hampers innovation and hinders the development of competition.

➤ Another key failing of Canada’s regulatory framework is the absence of neutrality. This tends to favour certain competitors over the competitive process. One manifestation of this failing appears in the asymmetry between cable and telephone companies. For example,

while cable companies are free to bundle voice, TV and internet services without regulatory approval, established telephone companies, like Bell Canada, can only do so with regulator's permission.

With Canada's current approach to the regulation of telecommunication, the full benefits of a robust marketplace, where telecommunications providers are challenged to offer a choice of innovative and affordable products and services, are not realized. Bell Canada believes that a more contemporary approach should rather be based on standards setting out appropriate behaviour in the marketplace. This approach is already widely used by regulators in different parts of the world. Insofar as Canada's current regulatory regime is not consistent with this more contemporary approach, it is in Bell Canada's view that there is an urgent need for a review of the existing regulatory framework. This urgently needed telecommunication regulatory reform should be based on implementing proper competition.

4.2 Bell Canada's reform proposal for a new telecommunications framework

In its submissions, Bell Canada has proposed an integrated, forward-looking, regulatory approach that would allow the development of competition in the telecommunications market. One of the main principles on which Bell Canada's modern telecommunications regulatory framework would rest is reliance, wherever possible, on market forces rather than regulation. The Proposal indicates Bell Canada's regulatory approach for each for each of the three principal types of regulation relevant to the telecommunication sector: economic regulation, social regulation and technical regulation.

4.2.1 Economic regulation

A service should be of sufficient importance to justify regulatory intervention. Discretionary services would meet this threshold for sector-specific economic regulation. For all other services the following process would apply:

1. Is the market sufficiently competitive?

Since the economic regulation should be applied only when strictly necessary, the starting point is to ask the question: is the market sufficiently competitive? Bell Canada proposes that sector-specific economic regulation should be considered only for those services for which

there is significant market power, such that competition in the market in question has not developed sufficiently. Significant market power should be determined in conformity with competition law principles.

2. Are wholesale remedies sufficient?

Where it is found that the market is not sufficiently competitive, a regulatory remedy may be required. Bell Canada proposes that there be a rebuttable presumption that wholesale remedies are adequate. This would limit retail remedies to those cases in which it is clearly demonstrated that a wholesale remedy will be insufficient for dealing with regulatory concerns.

3. Remedies?

The remedies imposed should respect the fundamental principles of efficient regulation. That is, regulation should be only imposed where necessary and desirable; be as least intrusive as possible; and to the extent possible, be consistent with market-based outcomes.

An important aspect of the Proposal is the creation of incentives for privately negotiated commercial arrangements because such arrangements, determined freely by parties, more closely represent effective market outcomes than imposed arrangements.

Finally, steps 1 to 3 should be re-appraised every five years or upon application to ensure that they remain appropriate.

4.2.2 Social regulation

Bell Canada believes that the regulator should play an important role for social regulation in the telecommunication industry. It is in Bell's view that social regulations should be permitted in relation to issues such as promoting access to basic telecommunications, public and emergency safety issues, ensuring access to telecommunications by the disabled and limiting public nuisance associated with telecommunications services.

4.2.3 Technical regulation

The proposal considers there is a need for regulation of technical matters. However, regulation of technical matters should be designed in a manner that is neutral, ensures efficient interconnection between service providers and does not hinder investment.

4.2.4 Other Proposals

In addition to the proposed changes with respect to economic, social and technical regulation, Bell Canada proposed three additional changes to the regulatory framework:

- giving the Commission the ability to impose regulatory obligations on all service providers directly, regardless of whether they are Canadian carriers;
- permitting service providers to withdraw a service, other than a basic telecommunications service, on reasonable notice to the existing customers of the service; and
- requiring a compulsory review of Canada's telecommunications regulatory framework as a whole every five years.

4.3 Institutional Reform

The CRTC has neither the structure nor the mandate appropriate for today's environment. Consequently, Bell Canada considers that institutional changes would play an important role in the implementation of the proposal.

The key changes include:

- A next generation regulatory framework would confine the institutional authorities to what is strictly necessary and clarify roles. Responsibilities for a subject matter should be assigned to the institution that has the comparative advantage and expertise in addressing the problem at issue. Competition authorities would have jurisdiction for competition policy matters, the Commission would handle regulation relating to social and technical issues.
- Under Bell Canada's proposal, the CRTC would be divided more clearly into its components divisions. Commissioners would be assigned to telecommunications or broadcasting, -but not to both, with exception of the Chair.

➤ A next generation telecommunications framework would automatically be reviewed every five years to ensure that it remains appropriate to deal with the powerful changes in the industry.

4.4 Information and communications technology policy

Bell Canada considers that Canada lacks a co-ordinated leadership and an integrated strategy for information and communications technologies.

In Bell Canada's view, Canada's keys to competitive success include:

➤ promoting research and development to boost the competitiveness of the telecommunication industry.

➤ encouraging the adoption of telecommunication across Canada, particularly, among the small and medium-sized enterprises.

➤ increasing the effectiveness of government as a model user of telecommunications.

➤ accelerating efforts to complete the deployment of broadband services in Canada

4.4.1 Promote research and development to boost the competitiveness of the telecommunication industry.

Innovation is a key to competitive success in any industry, but in particular in ICT. Unfortunately, the intensity of R&D in Canada's ICT sector is not sufficient. Bell Canada considers that direct support of R&D could be an effective policy tool to fund private sector R&D.

4.4.2 Encourage the adoption of ITC across Canada, particularly, among the small and medium-sized enterprises.

R&D leads to the production of valuable telecommunication products and services, but productivity gains depends on their adoption in the market place. Canadian companies have not embraced ICT to the extent they could and should. Searching for opportunities to better diffuse ICT through small and medium-sized enterprises should be a particular focus of attention. Specific measures are needed to boost the diffusion of ICT across the Canada's economy. Among these measures the capital cost allowance provision. This measure enables

companies to write off an additional 50% of the cost of ICT investment in the first year of acquisition. Increase the effectiveness of government as a model user of telecommunications

As the largest employer in the country, the government itself ought to become a role model for the use of ICT in its internal operations. Therefore, implementing measures to enhance its use in critical areas such as healthcare, education and procurement is a key element to competitive success.

4.5 Accelerate efforts to complete the deployment of broadband services in Canada

Because of its capacity to carry extraordinary amounts of data, broadband is key to realizing the potential of ICT innovation. In Bell Canada's view, the Canadian government should devote a portion of its existing R&D support to broadband development.

5. SUMMARY OF BOYER'S COMMENTARY (2005)

This commentary had two specific objectives: first, to develop a proper methodological framework to characterize the extent of competition in the residential local access market, and second, to propose changes to the current telecommunications regulatory framework. Boyer argues that the level of competition in the telecommunications industry cannot be determined by the traditional market share measure of competition because this industry has more characteristics of an emerging industry than a mature industry. Furthermore, Boyer considers that the current approach to the regulation of telecommunications in Canada is likely to generate significant harms to consumers and businesses as well as efficiency losses for the Canadian economy. This section gives a brief summary of Boyer's commentary.

5.1 The market shares measure of competition

Boyer addresses first one of the main concerns of the regulators: the persistent market share dominance of incumbents in local exchange services, which still prevail in spite of the significant efforts of the regulators to foster competition in that market. This dominance of the incumbents, at least in terms of market shares, raises fears that the incumbents may have been able to maintain their market power over the local wireline access services.

Boyer argues that the traditional market shares measure of competition is not a good indicator of competitive pressure in a fast growing and technology driven industry. Given the fundamental changes that characterize the telecommunications industry, Boyer considers that the relevant market may be difficult to determine and that the empirical studies conducted at this time can only be incomplete or suggestive of the real level of competition in the industry.

To date, the best empirical estimates we would like to get of the level of substitutability (and therefore competition) between wireline and wireless telephony is in terms of own and cross price elasticities of demands for those services. However, the development of a larger number of different telecommunications technologies, each with important specific characteristics tends to increase the global usage level of all telecommunications technologies combined even if the composition of such higher usage may be asymmetrically distributed and differentially shifted over time across the different technologies. In this context, it is in Boyer's view, that the net empirical estimates of the competition intensity measured by the cross-price elasticities could have important *downward bias*.

According to Boyer, there are other ways to measure concentration that capture more adequately the recent developments in competitive pressures in telecommunication services. A recent study by Bell Canada (2004) indicates that the market share of wireline voice communications (fixed line calls) originating from home, expressed in terms of minutes of voice communications through all technologies, is about 80%. A more recent study by Dzieciolowski and Galbraith (2004) compares the predictions (trends) of the number of residential wirelines, either primary, secondary or total, serviced by Bell Canada in Ontario and Quebec with the observed numbers of such wirelines over the period January 1990 to February 2004. This study, which is the most credible one regarding the level and impact of the competitive pressures exerted by competing technologies on primary and secondary wirelines in service, indicates a significant and increasing level of competitive pressure. Boyer therefore concludes that the regulator should be somewhat less nervous than it appears to be regarding the state of competition in residential local wireline access services, once view

shifts from local residential wireline services to local residential wireline and wireless voice communication services.

5.2 Other indicators of the level of competition

However, as noted by Boyer, one must recognize that many consumers do not have access to wireless telephone technology and depend completely on their fixed telephone line. Insofar as this sub-segment of the consumer population needs protection against the possible market power of the incumbents, the Commission may be justified to keep pressing for more competition.

According to Boyer, the key question that must be answered is whether the measured level of competition between local wireline and wireless voice communications is deemed sufficient to consider that the two constitute one single market in which competitive pressures would be strong enough to prevent incumbents from exercising market power. The Commission should be expected to relax its direct control and its pressure for more competition in the local wireline access market if and when such of level is achieved.

Given that the traditional market shares measure of competition is not a good indicator of the level of competitive pressure in telecommunication market, Boyer discusses other indicators of the level of competition. He considers that the dynamic of competition in the local telecommunications services has developed sufficiently to allow partial price deregulation.

Boyer considers first the level of substitutability in the local telephone market between wireline and wireless communications. The standard approach of antitrust economics adopted to characterize the level of competition sufficient to prevent the undue exercise of market power by incumbent firms is to measure the capacity of such incumbent firms to implement a small but significant (typically 5%) and non transitory (typically one year) increase in price for their services, given the pricing structure of their competitor's products and services.

Given the elasticities computed by Rodini *et al.* (2002), the local wireline telephone services would be considered as one relevant market. From these results, Boyer concludes that there

are reasons to believe that the level of competition, measured by the substitution potential, as revealed by consumers in their choice of communications channels, between local home wireline and wireless phone communications is still not high enough to warrant a complete price deregulation. However, Boyer argues that this kind of estimates could lead to a possibly important downward bias in the perceived level of competition in the local access market.

Boyer argues from the dynamics of competition in the local telecommunications services that it is time to proceed with partial price deregulation. Indeed, based on Bell Canada's study (2004), the market share of Bell's wireline services in total local communications services measured in effective minutes of communications stands now at about 80%. It can be argued that it would be impossible for Bell to profitably raise its prices for wireline services by 5% for a period of one year. Thus, based on the rules followed by the Competition Bureau of Canada, the competition in the industry would be deemed sufficiently intense.

Boyer argues further that the need for protection is continuously reduced by the ever increasing number of consumers having access to both technologies and having access soon to a third one, the VoIP technology. The level of market power of the ILEC is seriously diminished up to a point where more regulation may cause more harm than good.

According to Boyer, one must realize that the potential future competition in products and technologies also play an important role and defining the set of competitors, actual and potential, is a critical step in determining the level of competition. As noted by Boyer, the identity and role of *potential* competitors may be difficult to determine given that many products and services as well as some potential future providers may simply not be yet identified even though they may be *dans les coulisses* and certainly present in the minds of incumbents whether they are wireline or wireless providers.

Moreover, as noted by Boyer, Telecommunications products and services must be seen as a technology to generate a vector of communications characteristics that customers value. A consumer is likely to express his/her portfolio of products and services, which are offered or distributed through different technologies. It is not the specific stand-alone characteristics of

any given service, which are likely to count but their contribution to the individual communications portfolio. This has important impacts for our understanding of the proper regulatory approach to competition in telecommunications, in particular in the local wireline access. A product-by-product or market-by-market approach may turn out to be very detrimental to the welfare of consumers because it is likely to miss the interdependencies between products and services and specific contribution of a product or service to the group or portfolio of telecommunications means, products and services, a customer may have access to. Boyer considers however that there are two critical elements that may possibly impede the development of competition in the local wireline access market: first, the bundling of services with single integrated billing; and second, the absence of number portability between wireless providers and between wireless and wireline providers (WWNP).

These factors increase the cost of switching between providers and therefore allow those providers to raise prices for old customers while pursuing aggressive pricing and calling plans for newcomer. Boyer considers that the absence of WWNP may not be a significant problem anymore because customers wishing to shift from Bell to Videotron will be able to keep both their telephones and their number(s). As regards single billing, Boyer considers that the way for the regulator to ensure that single billing does not unduly restrict competition is not by directly fighting it or regulating it in such a way that it would be impossible or impractical to implement. Boyer considers that the regulator should rather by taking a pro-active stance: first, making sure that consumers are well aware of competitors' offers and second, that switching from one competitor's single billing plan to another competitor's single billing plan is easy and cheap. In any case, all competitors in the broad communications field must be subject to similar regulation regarding single billing.

5.3 The competitive environment

Boyer argues that the current approach to the regulation of telecommunications in Canada is likely to generate significant harms to consumers as well as efficiency losses for the Canadian economy. As noted by Boyer, the telecommunication industry appears at this time to be an industry in its early phases of development rather than a mature industry. The level of

competition in those early phases is in general much higher than in the later phases when the industry becomes a mature industry with a relatively stable dominant technology and a relatively stable set of competitors. Hence, the danger of over-regulating the industry in those early phases is even greater than in the later phases. In today's telecommunication industry, regulation must be handled with extreme care to avoid hampering the development of real value generating competition.

Boyer therefore argues that one must look at local wireline access competition from a process point of view rather than from a market share point of view. The process approach to fostering competition stresses the process rather than the results. It concentrates on ensuring open access to the existing network facility at properly defined competitive access pricing and conditions rather than on the number of firms demanding access or the market shares of those firms as compared with the incumbents' market share. In so doing, it avoids opening the doors to inefficient competitors who may benefit from the regulators' over emphasis on market shares at the expense of consumers' welfare.

As emphasized by Boyer, the situation is even more dangerous since the residential local wireline is most likely to be characterized by the Bertrand competition conditions. Therefore unless the Bertrand conditions can be neutralized in the competition over local wireline service, there is little chance that competitors will indeed show up in that market even if regulators take pro-entry actions and even if the current pre-entry profits of the incumbents were high. As Boyer points out, it is the post-entry competitive conditions, post-entry prices and post-entry profits rather than the corresponding pre-entry levels, which are the drivers behind the entry strategies of potential competitors.

5.4 A renewed pro-competition regulatory framework

The traditional approach to regulation is mainly based on the tight control of incumbent local exchange carriers and light-handed surveillance of competitive local exchange carriers. Boyer considers that this traditional approach is outdated as market delineation become rapidly blurred with the increase in substitutability between communication products, services and

technologies. Cellular/mobile telephony and fixed line telephony are engaged neck-to-neck competition.

To achieve a proper equilibrium between short run and long run goals, regulators must rely on competitive processes, that is, they must make sure that their intervention are not aimed at micro-managing prices and quantities but rather at making sure that those prices and quantities emerge from a competitive real or managed environment.

Insofar as the CRTC's policies are not consistent with a competitive processes view of regulation, the current approach to the regulation of telecommunications in Canada is likely to generate significant harms to consumers and losses for the Canadian economy.

Boyer considers that there is an urgent need for a review and transformation of the policies and means of telecommunications regulator. According to Boyer, the urgently needed telecommunication regulatory reform should rest on three specific principles. *First*, the pursuit of a dynamic regulatory approach based on implementing proper competition processes and information systems rather than based on the traditional measurement of market shares and concentration ratios which, in a changing and volatile industry, typically become obsolete at the time they are completed. *Second*, the regulator should act as the promoter of efficient network development and maintenance investment programmes to guarantee the integrity of the telecommunication network in Canada. *Third*, the regulator should act as the manager of the level playing field conditions through full cost sharing (à la Shapley-Shubik for example) capable of favouring both static and dynamic efficiency. Such non predatory pricing rules imply some loss of static efficiency. This loss in static efficiency can be adequately controlled by making sure that a stronger accent is put on the crucial roles of the telecommunications regulator as a trusted generator of information for the consumers and as a manager of the level playing field competitive conditions.

6. DISCUSSION

6.1 Defining the outcomes of competition

The Commission is of the view that resale can promote the development of a competitive market while allowing competitors time to construct their own facilities. While resale competition can help promote the development of a competitive market, it is the Commission's view that the full benefits of competition can only be realized with facilities-based competition.

Rabeau considers that competitors in the long-distance market continue to rely largely on the incumbent's facilities and services in order to serve their customers. According to Rabeau, this situation has created a kind of artificial competition, which decreases prices without creating value for the users. The pricing competition worked against market entrants that invested in infrastructure. After more than ten years of competition, the new competitors have never succeeded in becoming truly profitable. Many went bankrupt, despite industry consolidation. The results suggest that the shareholders in the new competitors in the long-distance market have generally had to absorb losses and the beneficiaries of the lower prices and new services have been consumers.

This last paragraph is curious in many respects: entrants haven't been profitable, prices have been lowered by "artificial competition", consumers have been the main beneficiaries. What is wrong with that? One will need more arguments to be convinced that this evolution of the industry is a sign that competition is too low and that value has not been created. Quite the contrary, credible indicators show that competition is significant but also that the game is tough for both incumbents and entrants. That is not an abnormal state of affairs since it is the state of competition in most industries, in particular emerging industries such as telecommunications today.

In addition, the fact that "competitors have never succeeded in becoming truly profitable" is clearly disputable. The new competitor's market value is more representative and a much

more reliable signal of their long run potential profits than their short run profits during the period of intense competition which always accompanies the emergence of a new industry (telecommunications has many characteristics of an emerging industry; it is paradoxically more an emerging industry than a mature industry).

We should not forget that the role of resellers is to generate value for consumers as much as the so-called new infrastructure-based competitors. Competitors are competitors, whatever the platform and channel they use. Resellers will remain in the industry even after the new infrastructure-based competitors have succeeded in generating higher profits, if the current ones ever can do it. If they cannot do it now, what kind of assurances can one get that they will in finite time be able to do it on their own once the CRTC (socially costly) protective measures have been abandoned?

Local competition has been there for a while through generous network access conditions for non-dominant CLECs, the emergence of resellers, the intense competition from potential competitors including cable companies (through market contestability), which has been as real as the competition from actual competitors, and last but not the least intense competition from wireless telecommunications providers.

6.2 Competitive strategies

The Commission considers that if forbearance were granted prematurely, the incumbent's ability and incentive to engage in bundling strategies prior to the entry and roll-out of other facilities-based competitors, would have a material negative impact on the potential for sustainable competition in the provision of local VoIP services, and therefore on the protection of the interests of users.

Rabeau believes that the incumbents have instruments that enabled them to stabilize their finances and compensate for the loss of long distance revenues by various means (for example, extensive bundling).

One must realize that extensive bundling of services is a powerful instrument of competition, used by industries of all kind, and it is there to stay.

Rabeau notes that very recently, anticipating the disappearance of long-distance revenues with the penetration of VoIP technology, the incumbents have been able to take defensive action to secure their customer base and make VoIP services less attractive by offering unregulated deep-discount long-distance rates. These deals are not directly related to local telephone service but their dominance in the local market gives the incumbents ready access to customers and makes it much easier for them to promote their offerings. In Rabeau's view, this illustrates the continuing competitive asymmetry in the telephone market.

We must realize that competitive asymmetry is not particular of telecommunications. It exists in any industry with large and small competitors. If, in order to allow the new competitors to establish themselves, the incumbents are disallowed for some time to use some competitive (reactive) strategies in their quest for protecting their market share or profits, what will happen when they are allowed again to use those strategies? Will the new competitors decide then to leave the industry, thereby leaving the consumers with a possible significant net welfare loss (having paid higher prices simply to allow promising but in the end inefficient competitors to try to survive)? If the new competitors signal, through demonstrating or rather advocating their need for non-competitive protection as long as they are not firmly entrenched in the industry, that there is a high probability that they may not succeed and survive unless protected (maybe indefinitely) from incumbents, then the protection offered by the CRTC regulations towards lessening the intensity of competition will in the end have generated huge social costs without much in terms of benefits.

The value for the new competitors of an entry strategy into the local telecommunications market is established and evaluated (or should be) not on the basis of the short run profits or losses they may incur during the protection-from-incumbent period but rather on the basis of their capacity to sustain competition afterwards.

In fact, any entry decision by any new competitor in any market or industry generically implies losing money for a while, sometimes significant amounts of money. Entry decisions are (almost) never profitable from a short run point of view. This does not imply of course that such strategies are not valuable. Firms will not abandon a value creating entry strategy simply because it implies losing money for a while to establish their market base, that is, their credibility in the minds of customers.

6.3 Defining the extent of competition

The Commission is of the view that while market share may not always be determinative of market power, it is clear that the incumbents are the dominant providers of local exchange services in Canada. On that basis, the Commission determines that it would not be appropriate to refrain, at this time, from exercise of any power in relation to local VoIP services offered by the incumbents.

On the basis of market shares, Rabeau notes that the dominance of the incumbent in the local market has remained essentially unchanged since 1997, when the market was opened up to competition.

Market shares may not be a reliable measure of competition intensity. In any industry but in particular in the telecommunications industry that is undergoing rapid technological changes, market shares must be handled with care and must be measured in a way that is sophisticated enough to provide useful information. Dzieciolowski and Galbraith's study (2004) captures more adequately the recent developments in competitive pressures in telecommunication services. Their study shows a significant and increasing (cumulative) level of competitive pressure.

Moreover, it is the nature of the post-entry competition that matters for the entrants. The pre-entry level of prices and profits as well as the movements during the period of entry have secondary, almost negligible importance since the value of the firm and of its specific entry

strategy depends fundamentally and more importantly on the medium-run and long-run intensity of competition (market development, prices and profits).

6.4 The potential entry by wireless providers

The incumbents argued that wireless telephone service is the real competition in the local market. Rabeau agrees that, in the long term, competition in the local loop will become technology-driven, as companies with their own infrastructure and their own technology face off against each other. However, it is Rabeau's view that neither wireless technology nor the market have yet reached that stage of development.

This is exactly the proper argument to make. The question is then : who should finance the investment cost (in part, in the form of early losses) of entry? According to the CRTC, as implicitly revealed by its recent decisions in the VoIP case and other cases, it is the customers of the industry products and services, whatever the firms producing and selling the products and services they want, who should subsidize the newcomers with the hope of eventually being able to recoup that subsidy through better products and services and/or lower prices. But the CRTC gives no clear argument as to the justification of its position. As we will see, this type of policy is far from optimal and may in fact generate more harm than good and may end up missing by a significant margin the objective pursued.

6.5 Barriers to market entry

The Commission would expect that, in a forborne environment, the ILEC's ability to target competitors would also permit the ILECs to control the migration of circuit-switched local exchange service customers to their own and the competitor's local VoIP services, thereby allowing them to preserve, as much as possible, their existing customer base. Rabeau supports this conclusion of the Commission. He believes that without regulation that promotes competition, the incumbents would have an arsenal of market instruments that can create major barriers to market entry.

It is important not to forget that the Competition law is already dealing with these practices. There is no need for more intervention than that of the Commissioner of competition in the emerging telecommunication industry. Competitive strategies cannot be aimed at preventing new competitors from entering the telecommunications market. The law explicitly forbids the use by incumbents of a whole arsenal of instruments or anti-competitive acts to create barriers to entry, mentioned in the Competition law (art.78 and 79).

6.6 The competitive position of cable companies

The incumbents argued that the cable companies will emerge as strong competitors for the provision of local VoIP services. With respect to this argument, the Commission notes that cable companies face specific obstacles. Rabeau argues that entering the local market with a technology other than the one used by incumbents is possible provided that the required investments can be recouped, while charging customers a lower rate than the incumbents so as to induce them to change their local service provider. As emphasized by Rabeau, price is a key consideration if a service of equivalent quality is being offered using another technology.

The application of such a principle to other industries by the Competition Bureau would be catastrophic for the Canadian economy. Again, such policies would favour the entry of inefficient competitors who could make profits under protection but not under competition. A proper regulation approach would favour the entry of efficient competitors capable of eventually competing with incumbents and even driving them out of the market while keeping at bay those who will never be, unless they are protected from competition. The only real role of CRTC-type protection while entering is to force customers to subsidize the new entrants by lowering their cost of entry at the expense of higher prices and/or lower quality products and services and/or sub-optimal matching of preferences and needs with the characteristics of products and services. What is the level of this subsidy, that is, what is the social cost of this complex subsidy in terms of welfare losses during the protection period?

6.7 The impact of low regulated price

The CRTC initiatives to enhance competition have focused on promoting entry by lowering the costs entrants face to use the ILECs networks. The rebalancing process has led the CRTC to require incumbents to share their facilities or networks with entrants who pay rates close to the incumbent's marginal costs. This may represent a substantial barrier to both the introduction of new technologies and the development of competition.

Rabeau is of the view that one possible explanation for the small number of competitors to date in the Canadian local market is that with rates close to marginal costs, a competitive market equilibrium has been established at a level where there is virtually no profit to be made by new players using the same or similar technology. Low prices would make it uneconomical for potential entrants to compete with incumbents unless they have a technology that allows them to provide services at substantially lower cost. According to Rabeau, the fact that, until now, regional ILECs have made only small incursions into the other's residential market is a strong indication that this is indeed the case.

The fact that ILECs are considered CLECs (newcomers) in each other territories and that in spite of this have not entered each other residential market in a significant way is a clear indication and one more indicator that the actual regulation of universal access to basic telephone service is done in Canada in a way that is inefficient and socially very costly.

As noted by Rabeau, "the fact that rates are close to marginal cost in Canada has made it difficult for players such as the cable companies, which employ a different technology than the incumbents, to enter the market. In the U.S., where local rates are much higher, the cable companies already have a significant presence in the local market. In Canada to date, the necessary investments have generally been too high for the cable companies to get a competitive return on investment, in view of the prices they would have had to offer to lure customers away from the incumbents."

Again, this simply restate that the actual regulation of universal access to basic telephone service is inefficiently done in Canada, a statement lots of business analysts and academics agree with. It would be much better for (almost) all competitors to face an efficient set of rules regarding universal service. The CRTC regulatory provisions regarding the protection of new entrants from competition from incumbents is mainly a result of this inefficient set of rules regarding universal service. A wrong to correct a wrong, leading in the end to a bad equilibrium where each competitor tries to make the most of a manipulated situation where competitors end up worrying more about their regulator than about their customers. This can only lead to reduced incentives for innovation and value creation in favour of increased incentives to lobby political or administrative authorities.

6.8 Competition in Canadian Telecommunication

Rabeau observed that ten years after the introduction of competition in various segments of the telecommunications markets, the incumbents account for 70% of the total telecom market in Canada, with the rest divided up among a number of companies. Rabeau therefore considers that as VoIP technology makes its appearance in the marketplace, the playing field is not level and concludes that it is vital that the regulator maintain for some time a regulatory framework that enables different players to enter the market.

Whether the playing field is level or not has nothing to do with the fact that market shares in terms of revenues differ between firms. The playing field is level if free entry and exit conditions are met and if more efficient competitors are induced to enter the competition and less efficient ones are kept out. One cannot qualify the playing field as level or not simply on the basis of market shares.

6.9 VoIP technology

While the goal of creating a competitive marketplace by means of infrastructure investment by new competitors in the local market has not been achieved, VoIP technology has changed the equation and is now making this objective attainable. Rabeau considers that technology is the factor that will make competition possible on the last kilometre of the telecom network.

Competition, and more generally the emergence and development of a proper intensity of competitive pressures, is a major factor of growth through its incarnation in the creative destruction processes and its effects on incentives for technological, social and organisational innovations. But the way the emergence, development, and maintenance of competition are favoured is also very important. If improperly implemented, a pro-competition policy will miss its objective and may end up imposing long lasting costs on society.

As stressed above, any entry decision by any new competitor in any market or industry generically implies losing money for a while. That is part of the investment cost of entry. VoIP may indeed be the wonderful technology, that will allow potential competitors to efficiently challenge the incumbents for the provision of local loop telecommunications services. But if that is so, it would be better for the CRTC to favour a level playing field by not intervening directly in the process of selecting winners. This should be left to market forces. However, if it insists to intervene in that process, the CRTC should do it in a different way, through more efficient means than simply constraining the incumbents to offer products and services that are priced too high, have lower quality and/or inadequate specifications and characteristics.

In terms of efficiency and transparency in the choice of instruments for implementing the government/CRTC policy towards helping newcomers to establish themselves (if that is the government policy), it would be much better to directly subsidize entry.

One possibility would be for the government/CRTC to announce that a lump sum payment will be made to a newcomer once the newcomer has been able to show in a credible way (through some market test) that it could indeed provide added value for the consumers through superior products and services and/or lower costs. A second possibility would be for the government/CRTC to offer an investment tax credit allowing the newcomer to recoup part of its early losses from its later profits made on and from the market concerned if and when those profits appear. Both instruments would provide a higher intensity of incentives for newcomers and prevent inefficient ones from attempting to enter the market simply because of the

protection offered by the government/CRTC through direct price control and product manipulation (known to be particularly inefficient and socially costly instruments), under which they are likely to make profits in the early period itself.

6.10 Dynamic competition

The Commission considers that premature forbearance in respect of local VoIP services would significantly reduce the ability and/or incentives of competitors to make the necessary investments to achieve the Canadian telecommunications policy objectives. Rabeau considers that, in a deregulated market, ILEC's market dominance would deny customers a choice of VoIP services from new players who otherwise could develop and tailor their VoIP services to the needs of their target customers. To avoid this outcome, which would compound the failure of competition in the local loop, it is necessary to make the regulatory framework more cumbersome by adding new rules. As the Commission confirmed in Decision 2005-28, all that is required to make competition in local telephone service possible is to maintain the regulatory safeguards already in place.

When TOYOTA decided to enter the car industry in the fifties and take on the major incumbents at the time, it came in with a superior technology and eventually a better product. There were no calls for protection from the incumbents through price and marketing controls. The company made the risky gamble that its value chain model could lead to lower costs and higher quality than the value chain model of the big three of the day. And that is the way competition serves customers: creative destruction. Such creative destruction could come from incumbents entering into each other markets or from new entrants capitalizing on their expertise in a related industry (cable or satellite communication services for instance).

Rabeau writes: "This is not to say that maintaining these rules would guarantee the success of the new competitors in the marketplace. They would not only have to invest in facilities but also wage a costly marketing battle to lure customers away from the incumbents in the local market. Consumers would benefit from such a battle between competitors."

Incumbents and newcomers are well aware of the fact that telecommunications is a difficult and risky industry. Stating that “[New competitors] would not only have to invest in facilities but also wage a costly marketing battle to lure customers away from the incumbents in the local market” is not specific to the telecommunications industry and in no way would justify in other industries the imposition of CRTC-like regulations.

The battle between competitors is going on already and would be even more intense if the CRTC were abandoning its current policies of price and marketing controls (while maintaining its regulations of safeguards for privacy protection for instance) in favour of truly incentive compatible regulation fostering innovation and competition through the development of a real rather than managed level playing field in Canadian telecommunications.

Rabeau writes: “Once competition in the local market has reached a level deemed sufficient and viable as a result of these new technologies, the CRTC will be able to forbear and let the market determine pricing and service availability.”

When will such a state of the industry arrive? How will it be recognized? One may expect that if direct regulatory controls are abandoned too soon, the enormous social cost paid and sunk by customers to foster competition will have been done in vain. Similarly, one may expect that if direct regulatory controls are abandoned too late, the government/CRTC would then be pressed to design another generously and costly program to avoid bankruptcies by former incumbents again in order to allow a proper competition level and maintain a level playing field in the industry.

As a general conclusion, the predominant model underlying the positions not only of the government but also of the parties involved, including the firms themselves, both the incumbents and the new entrants, and their respective business consultants, is rooted in an economic theory of a past forever foregone era.

REFERENCES

BELL CANADA. *Analysis of Local Residential Voice Network Usage*, April 2004.

BELL CANADA. *Canadian Connection : Strengthening Canada's Leadership in Telecommunications*, August 2005.

<http://www.bce.ca/fr/news/eventscalendar/webcasts/2005/20050815/>

BOYER, M. *The Measure and Regulation of Competition in Telecommunications Markets*, October 2005.

CRTC. *Telecom Decision CRTC 2005-28*, May 2005.

www.crtc.gc.ca/archive/ENG/Decisions/2005/dt2005-28.htm .

DZIECIOLOWSKI, K. et GALBRAITH, J.G. *Indicators of Wireline/Wireless Competition in the Market for Telecommunication Services*, CIRANO 2004RP-21, 2004.

RABEAU, Y. *Voice over Internet Protocol (VoIP) : A Unique Opportunity for Genuine Competition in Local Telephone Service*, May 2005.

RODINI, M., WARD, M.R. et WOROCH, G.A. *Going Mobile : Substitutability between Fixed and Mobile Access*, December 2002.