



L A W Y E R S

***INTERNATIONAL COMPARISON OF APPROACHES TO ECONOMIC REGULATION OF  
VOIP***

***A RESPONSE TO THE LEMAY-YATES ASSOCIATES INC. REPORT  
“A DISCUSSION OF THE EVOLUTION OF VOIP REGULATION WORLDWIDE”  
DATED NOVEMBER 2005***

***A report to the Canadian Governor in Council prepared for Aliant Telecom Inc., Bell  
Canada, Saskatchewan Telecommunications, Télébec, société en commandite and  
TELUS Communications Inc. (together the petitioning parties).***

***12 April 2006***

## 1. Introduction and summary

- 1.1 The submission made by the Canadian Cable Telecommunications Association (**CCTA**) to the Governor in Council dated November 7, 2005 included a report by Lemay-Yates Associates Inc entitled “A Discussion of the Evolution of VOIP Regulation Worldwide” dated November 2005 (**LYA report**).<sup>1</sup> The LYA report responds to our review of global approaches to VOIP economic regulation which was included in the petitioning parties’ initial submission (**First G+T report**). The petitioning parties have requested we provide a critique of the LYA report.
- 1.2 The LYA report covered many of the same countries as the First G+T report, although it excluded some Asian countries, including Japan which has high VOIP usage, and included Norway and Switzerland. Norway and Switzerland while not members of the EU are closely aligned to the EU.<sup>2</sup> Since both reports were written a number of other countries have considered the issue of VOIP in particular the Netherlands, Germany and Spain.<sup>3</sup> Annex 1 provides a compilation of the countries covered by both the First G+T report and the LYA report.
- 1.3 On the basis of its assessment of the direction of global trends, LYA concludes that:<sup>4</sup>

*“... the approach followed by the CRTC is consistent with what is being done elsewhere, including the European Union and its conclusions as to the need for economic regulation owing to the significant market power of the ILECs could be supported in other jurisdictions.”*

- 1.4 However, nothing in the LYA Report causes us to change our assessment that the CRTC’s decision to apply extensive economic ex ante obligations to ILECs VOIP services is out of step with the policies of regulators around the world. While regulators around the world have approached the issue of VOIP regulation using different decision making structures, the predominant trend worldwide is to arrive at a similar outcome of little or no ex ante regulation of ILEC VOIP.

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<sup>1</sup> Response to Petitions lodged by Aliant Telecom Inc., Bell Canada, Saskatchewan Telecommunications, Télébec, société en commandite and TELUS Communications Inc. (petitioning parties), requesting a review by the Canadian Governor in Council of the Telecom Decision CRTC 2005-28

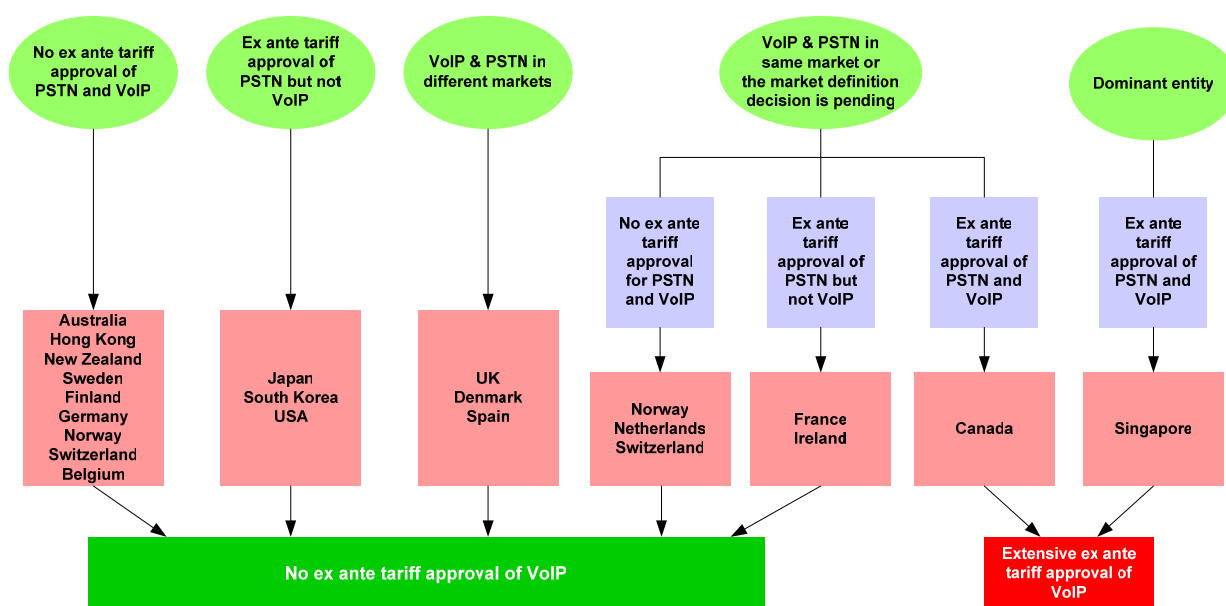
<sup>2</sup> Norway is a signatory to the Agreement on the European Economic Areas and Switzerland is the EU’s second largest trading partner. Norway therefore has obligations to review its markets in accordance with the European framework under the Agreement. Switzerland has used the European framework as a guide in amending and revising Swiss law.

<sup>3</sup> Germany has found that VOIP services are in the same market as local/national calls and that Deutsche Telekom has SMP although it has yet to decide on remedies. Spain has found that VOIP and PSTN are in different markets.

<sup>4</sup> LYA report, page 58.

- 1.5 In particular, the LYA Report obscures the single fundamental fact that LYA has not been able to identify any other country which requires ex ante approval of an ILEC's VOIP prices with the single exception of Singapore.
- 1.6 The absence of a requirement to obtain ex ante approval of an ILECs VOIP prices with the single exception of Singapore, reflects the desire of regulators around the world to drive VOIP penetration by reducing unnecessary regulation and their recognition that regulation should only be applied when it is the least burdensome remedy for a particular competitive problem.
- 1.7 Figure 1 illustrates the different ways in which regulators around the world have approached the question of the appropriate level of economic regulation of VOIP and demonstrates how despite these differences an almost universal conclusion has or is likely to be reached. .

Figure 1



- 1.8 As the LYA report identifies, some regulators share the CRTC's views on VOIP and PSTN being in the same economic market, such as France and Germany. However, LYA pointedly fails to say that the regulatory remedies in these countries are or will be very different from the CRTC's decision on remedies because these regulators have already decided not to apply economic PSTN regulation to VOIP. Even where economic PSTN regulation is applied to VOIP, such economic regulation is substantially less extensive than in Canada and almost universally does not extend to prior tariff approval.
- 1.9 The LYA report says that to make a meaningful comparison of international approaches to VOIP regulation it is important to understand "the competitive context and industry

*structure in which these regulatory choices are made and applied*".<sup>5</sup> However, on any identifiable market or regulatory criteria, Canada and Singapore are alone in applying extensive economic regulation to VOIP.

- 1.10 In contrast to the suggestions of LYA, VOIP is not the subject of extensive economic regulation in, particular prior tariff approval, in other countries regardless of whether:
- (a) VOIP take-up is just beginning to accelerate, as in Canada, or is already at high levels with significant substitution of PSTN services;
  - (b) broadband penetration rates are low or, as in Canada, high;
  - (c) broadband services are primarily provided on the incumbent's network or there are significant alternative broadband networks, as in Canada;
  - (d) the incumbent is currently owned by the Government;
  - (e) the regulators has decided that the incumbent is still dominant in the supply of PSTN services, as the CRTC has decided;
  - (f) the regulator has adopted technology neutral regulation policies, as in Canada; or
  - (g) the regulator has decided to extend non-economic regulation of PSTN services to VOIP, such as emergency calls and other consumer protections, as the CRTC has decided to do.

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<sup>5</sup> LYA report, page 1.

1.11 In short, the CTRC is applying an antiquated ex ante retail regulatory model which most other regulators now consider to be inappropriate even for mature technology services such as PSTN voice, let alone for a new and emerging technology with uncertain demand characteristics like VOIP. The adoption of such an antiquated model is likely to hinder rather than promote the expansion of VOIP services within Canada. The OECD, in its most recent report on policy considerations of VOIP released on 20 March 2006 unambiguously agreed with this view:<sup>6</sup>

*“This paper makes a number of policy recommendations including:*

*...*

*\* Excluding VoIP applications from particular ex-ante regulation for the retail voice market, taking into account effectiveness and sustainability of VoIP service (or voice service in case VoIP can replace traditional voice) competition considering entry barriers to VoIP market, and the degree of platform competition (VoIP service is decoupled with its underlying network) and whether the underlying wholesale broadband Internet access market is competitive.”*

<b>2. Does Regulation of VOIP depend on whether VOIP and PSTN are treated as being in the same market?</b>
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2.1 The First G+T report identified jurisdictions such as the UK where the regulator had found VOIP and PSTN to be in different markets. The UK regulator Ofcom is currently undertaking a further consultation on non-economic regulation of VOIP such as access to emergency and number portability services.<sup>7</sup> In relation to economic regulation, Ofcom has reiterated its view that VOIP and PSTN should be in different markets and that in any case, Ofcom’s preference is to address any retail dominance via wholesale level remedies so as to allow competition to develop in the retail market.<sup>8</sup> Since the First G+T report, Denmark’s decision that VOIP and local/national calls are currently in different markets has been notified to the European Commission. Spain has also notified its decision that PSTN and VOIP are in different markets.

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<sup>6</sup> OECD, *Policy Considerations of VOIP*, 20 March 2006, Page 5

<sup>7</sup> Ofcom, *Regulation of VOIP Services: Statement and Further Consultation*, 22 February 2006

<sup>8</sup> Ofcom, *Regulation of VOIP Services: Statement and Further Consultation*, 22 February 2006, Page 67

2.2 However, as the LYA report correctly notes, other regulators have decided, like the CRTC, that VOIP and PSTN services are in the same market. On this basis, the LYA concludes:<sup>9</sup>

*“where regulatory agencies have completed the assessment of VOIP, such as in Canada, Singapore and Hong Kong and to some extent in Sweden and in France, VOIP services have been integrated in the overall framework for local voice service as PSTN interconnected services are deemed to be substitutes to local services.”*

2.3 However, the mere finding that VOIP and PSTN are in the same market does not mean that ex ante PSTN economic regulation is applicable to VOIP. That is, the critical issue here is not whether VOIP and PSTN are in the same market, but rather, whether there is some form of market failure in respect of VOIP and if so, what, if any of the economic regulatory remedies applying to PSTN should be applied to VOIP to rectify that failure.

2.4 The Netherlands for example has recently found voice telephony access provided over a broadband connection by a broadband access provider (managed VOB) to be included in the retail access and calls markets.<sup>10</sup> Although it subjects retail voice and access services in the high capacity market to a price floor and price cap for all single and bundled retail services (no prior approval is required if prices fall within the defined range) it has adopted lighter regulation for VOB services which are not subject to the price cap and which have a separate price floor which reflects their more efficient cost structure.<sup>11</sup> Therefore KPN must merely ensure that the price for VOB services does not breach the price floor as well as complying with the general obligations of non discrimination and transparency.

2.5 This treatment of VOB has been described by Oxera in a report for OPTA as *“on the scale of all possible ex ante remedies, relatively light touch”* and *“the proposed remedy can therefore be seen as a form of regulatory ‘safety valve’.”*<sup>12</sup>

2.6 This approach has also met with the approval of the European Commission which stated *“the regulation of VOB should not prevent the SMP operator from switching to a new more cost efficient technology. In this context the Commission notes the flexible regulatory approach proposed by OPTA which is introduced via the price floor taking into account the different cost structure of the products based on VOB.”*<sup>13</sup>

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<sup>9</sup> LYA report, page 56.

<sup>10</sup> OPTA has defined two markets based on high and low capacity access.

<sup>11</sup> PSTN services in the low capacity access market are subject only to a price cap. All services are subject to an obligation of non discrimination, transparency and cost accounting.

<sup>12</sup> Oxera “Potential competition problems in voice-over-broadband services-Report prepared for OPTA” 2 November 2005

<sup>13</sup> Letter from the Commission to Opta “dated 2.12.2005”

- 2.7 This approach by the Netherlands reflects the requirement of the European directives that the choice of ex ante regulation should be the least burdensome requirement to address the competitive problem.
- 2.8 As outlined in the First G+T report, the European regulatory framework treats the assessment of significant market power (which involves market definition) and the decision about the remedies to be applied as separate and sequential steps. If a National Regulatory Authority (**NRA**) determines that an operator has significant market power (**SMP**) in a market, the NRA must then determine the appropriate remedies, which must be “proportionate and justified” to the competitive problem.<sup>14</sup> Hence, just because an ILEC is found to have SMP, it does not follow that the ILEC must be regulated at all or regulated in the same way across all services in the market in respect of which it has SMP.
- 2.9 The change in approach to market definition for VOIP in France provides a very clear example of how the EU regulatory framework can lead to differential regulatory treatment of PSTN and VOIP notwithstanding that they are found to be in the same market. As the LYA report notes:<sup>15</sup>

*“There is disagreement between the French NRA, the ARCEP, and the Conseil de la Concurrence (France’s equivalent to the Competition Bureau) on how they perceive VoB services. The Conseil de la Concurrence issued an opinion in February 2005 stating that “The Development of VoB must be taken into account in any analysis of the fixed telephony markets”<sup>16</sup>. The “Conseil” invited the ARCEP to re-examine the issue of VoB since it considered that, contrary to the prior opinion of the Agency that VoB was a complement to ADSL service, VoB is a credible substitute to fixed telephony.”*

- 2.10 However, while, as LYA itself notes, the French telecommunications regulator revised its market definition, it did not change its view that VOIP should not be subject to the ex ante regulation which applies to PSTN services:<sup>17</sup>

*“As part of its July 26, 2005 revision to its analysis of fixed markets, the ARCEP stated that indeed VOIP is part of the local fixed market but specifically excluded*

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<sup>14</sup> European Commission recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services, C(2003)497, 11 February 2003, recital 15.

<sup>15</sup> LYA report, at page 39.

<sup>16</sup> February 17, 2005 Press release from the Conseil de la Concurrence “in an opinion issued to the ART, the Conseil de la Concurrence draws the Authority’s attention to the development of Voice over Broadband (Vob) offers and the potential distortion of competition caused by unbalanced application of regulation.

<sup>17</sup> LYA report, at page 39.

*VoB from many of the ex ante restrictions imposed on FT with the proviso that regulation is “not necessary at the moment”.*

- 2.11 LYA also correctly notes that the European Commission approved the French regulator’s decision to regulate PSTN and VOIP differentially. LYA endeavours to suggest that the European Commission’s endorsement was grudging or cautious and that the European Commission directed the French regulator to closely monitor developments because it may need to change its mind about its light handed regulatory approach to VOIP. However, as is evident from the following comment of the regulatory European Commissioner with responsibilities for telecommunications, the European Commission regarded the French outcome as a victory for its liberalised approach to VOIP services, including those supplied by ILECs:<sup>18</sup>

*“I stand for an open, pro-competitive approach to internet telephony in all 25 EU Member States. I note with satisfaction that national telecom regulators increasingly share this view. I’m confident that the approach chosen now by the French telecom regulator, together with the existing regulation on wholesale broadband access and given the level of retail broadband competition in France, will deliver the best results for French consumers and provide legal certainty for market players.”*

- 2.12 Again, most recently, in its telecommunications annual report for 2005, the European Commission unambiguously stated its preference for a light regulatory touch for VOIP, irrespective of the market definition issue:<sup>19</sup>

*The Commission supports a light regulatory touch and welcomes the fact that a number of NRAs have taken a forward-looking stance, which reflects the Commission approach, on regulatory treatment of VoIP. The Commission has agreed with a number of NRAs that VoIP is part of the calls market, and has expressed a preference for light-touch regulation. Regulation of VoIP in the Member States has accordingly been very measured so far. In practice there appear to be low barriers to market entry.*

- 2.13 While not explicitly applying a market analysis, the regulator in Japan also decided not to apply PSTN regulation to VOIP. The regulator in South Korea has decided that VOIP

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<sup>18</sup> Viviane Reding, EU Comment on French Decision, Press Release, Reference: IP/05/1146 Date: 15/09/2005 In addition in its comments to ARCEP on the French decision the Commission said “As for the non-imposition of remedies on VOB services in the present case, given that VOB is provided by regulated wholesale access lines and that VOB as an alternative service to PSTN can, in principle be provided by any provider of broadband connection, the Commission considers that the decision not to extend PSTN obligations to VoB is justified.” Letter to Arcep dated 15 September 2005

<sup>19</sup> European Commission, *Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee of the Regions: European Electronic Regulation Markets 2005 (11 th Report)*, Page 9

should be subject to some PSTN regulation in order to protect consumers.<sup>20</sup> The particular PSTN regulation that is applied to VOIP is a tariffing requirement in the form of tariff publication. VOIP penetration in those countries, and therefore presumably the level of substitution for PSTN services, is amongst the highest in the world.

2.14 Figure 2 provides a consolidated list of these countries discussed in the LYA report and the First G+T report which apply some level of PSTN ex ante regulation. In each case, we have also identified whether PSTN ex ante regulation also includes prior tariff approval or not. Figure 2 then compares whether prior approval of VOIP tariffs is required. In each case, in footnotes, we have also identified any the other types of ex ante regulation that are applied to VOIP.

Figure 2

Country in which ILEC subject to ex ante PSTN regulation	Is tariff approval for VOIP required?
Belgium <sup>21</sup>	✗
Canada <sup>22</sup>	✓
France <sup>23</sup>	✗
Ireland <sup>24</sup>	✗
Italy <sup>25</sup>	Pending, but likely to follow European Commission's endorsement of French decision
Japan <sup>26</sup>	✗
Netherlands <sup>27</sup>	✗ <sup>28</sup>
Singapore <sup>29</sup>	✓
South Korea <sup>30</sup>	✗ <sup>31</sup>
Spain <sup>32</sup>	✗

<sup>20</sup> If an operator is declared to be dominant in respect of VOIP, then a tariff approval requirement will be imposed on that operator in respect of its VOIP services. However, at present, no operator has been declared to be dominant in respect of VOIP.

<sup>21</sup> No prior tariff approval required

<sup>22</sup> Prior tariff approval required

<sup>23</sup> Prior tariff approval required

<sup>24</sup> No prior tariff approval required

<sup>25</sup> Prior tariff approval required

<sup>26</sup> No prior tariff approval required

<sup>27</sup> No prior tariff approval required provided price is between floor and cap

<sup>28</sup> As stated above a price floor applies to VOIP services provided by the ILEC.

<sup>29</sup> Prior tariff approval required..

<sup>30</sup> No prior tariff approval required

<sup>31</sup> Publication of tariffs is required for all operators.

<sup>32</sup> No prior tariff approval required

Country in which ILEC subject to ex ante PSTN regulation	Is tariff approval for VOIP required?
Switzerland <sup>33</sup>	X <sup>34</sup>
UK <sup>35</sup>	X

**3. Would overseas decisions to regulate VOIP in the same way as PSTN provide support for the CRTC approach?**

3.1 LYA argues that the reason the CRTC is one of the few regulators to regulate VOIP in the same way as PSTN is because the CRTC is ahead of most of the world in reviewing VOIP regulation and that when other regulators get around to it, they will follow the CRTC's lead:<sup>36</sup>

*“Due to the timing of its review and of the completeness of its analysis, the CRTC could be seen as being at the forefront of regulators in assessing the impact of VOIP. The CRTC was ahead of other regulators in identifying that VOIP is a substitute for traditional circuit switched telephone services and in moving ahead to ensure adequate consumer protection, as far back as in the preliminary opinion outlined in Telecom PN 2004-2 in April 2004.”*

3.2 In particular, the LYA report identifies countries where decisions about economic regulation of VOIP are pending including Italy and Norway. LYA implies that Italy and Norway, at least, seem likely to follow Canada's decision to regulate VOIP in the same way as PSTN:<sup>37</sup>

*“... in Norway as in Italy, one cannot draw final conclusions at the moment regarding the outcome of economic regulations for VOIP services provided by the incumbent Telenor. However, it is noted that the NPT is following an approach similar to that of CRTC and that, as with the CRTC, the provision of publicly available PSTN interconnected VOIP service is clearly seen as within the same market as conventional telephone service.”*

3.3 The LYA report is misleading in three respects. First, regulators in a number of major economies decided before and around the same time as the CRTC how VOIP should be regulated economically, including Japan, South Korea and the UK. They all reached the

<sup>33</sup> No prior tariff approval required

<sup>34</sup> A price ceiling applies where the VOIP is defined as a universal service

<sup>35</sup> No prior tariff approval required

<sup>36</sup> LYA report, at page 4

<sup>37</sup> LYA report, at page 45.

opposite conclusion to the CRTC and decided that VOIP should not be regulated in the same way as PSTN.

- 3.4 Although Singapore, like Canada, applies its extensive ex ante PSTN regulation to VOIP, that is not the result of a direct determination by the regulator that VOIP should be regulated in the same way as PSTN. Rather, as explained in the First G+T report, Singapore has an “opt-out” approach to dominant carrier regulation: i.e. the ILEC is treated as being dominant for all services until the regulator has determined otherwise. The regulator has not yet had a proceeding to address whether or not VOIP services generally should be forborne from the dominant carrier rules.
- 3.5 The LYA report incorrectly states “[w]e also note that Japan has concluded that VOIP services are subject to regulatory requirements applicable for voice telephony services”<sup>38</sup>. Although Japan has applied conditions to ensure interoperability of VOIP services and conditions for the allocation of telephone numbers, VOIP charges and tariffs are not regulated. Japan is also recognised as the leading VOIP market in the world with over 7.02 million VOIP users and 16 million VOIP specific numbers as at September 2004.<sup>39</sup>
- 3.6 Second, the LYA report glosses over the fact that even if the current “undecided” countries did decide to regulate VOIP in the same way as PSTN, the level of PSTN regulation is substantially less intrusive than the level of ex ante regulation which applies to PSTN in Canada.
- 3.7 The Norwegian Post and Telecommunications Authority (**NPT**) is currently conducting a market review of telecommunications markets to assess the continued need for ex ante regulatory remedies across all markets including call markets. Their methodology in line with the European Union methodology indicates that ex ante retail regulations will only be retained if there are market failures that cannot be solved by competition law and where those remedies are proportionate to the market failure.<sup>40</sup>
- 3.8 However NPT has determined that VOIP services that are designed to be any-to-any communications and are publicly available are PATS and as such subject to the obligations that apply to PATS service including the obligation to publish the terms and conditions of supply.<sup>41</sup> Given that this is an obligation resulting from classification as a PATS service, this obligation applies to all VOIP service providers and is not a requirement to obtain prior approval for a tariff. Importantly however NPT provides a

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<sup>38</sup> LYA report, at page 11

<sup>39</sup> Ovum “Japan interconnect country analysis) 27 June 2005, page 11

<sup>40</sup> NPT, Methodology for Market Analysis, 24 March 2006

<sup>41</sup> NPT, Outline of the regulation of VOIP in Norway: Executive Summary, 21 April 2005 and NPT Regulations on Electronic Communications Networks and Services Section 1-7. The bulk of these obligations are non-economic in nature and even the obligation to publish the terms and conditions of supply is a consumer requirement rather than a SMP requirement.

specific framework for providers to apply for their VOIP services to be exempted from the PATS obligations.

- 3.9 Contrary to LYA’s assessment there is nothing in the Norwegian framework or their current regulation of PSTN services to suggest that the outcome of the market reviews will be the application of extensive economic regulation to ILEC VOIP services such as is applied by the CRTC.
- 3.10 As the First G+T report noted, there is a strong, consistent global trend in regulation to move away from extensive ex ante regulation particularly at the retail level. This follows a growing recognition that layers of ex ante regulation can actually detract from the promotion of competition. As Ofcom has stated:

*“In an attempt to address [the incumbent’s SMP], increasingly detailed regulation has been introduced. This has created a regulatory mesh which places a series of obligations on BT at the retail and wholesale levels. While all individually justifiable, the combination of obligations creates additional costs and often conflicting incentives. This is particularly so when competition is promoted at multiple layers of the value chain, using a variety of overlapping regulatory instruments. This outcome is not optimal for citizens and consumers, for BT’s competitors nor the BT itself. It is restrictive and costly to all parties, and at this stage of network and technology development it is potentially damaging to our long-term competitiveness as a nation.”<sup>42</sup>*

- 3.11 Figure 3 compares the level of economic ex ante regulation applying to PSTN in countries which have determined that PSTN and VOIP are in the same market or where such market definition decisions are pending.

Figure 3

Country	Ex ante tariff filing	Ex ante tariff approval	Price floors	Price caps
Canada	✓	✓	✓	✓
Hong Kong	✓	✗	✗	✗
Germany	✓	✗	✗	✗
Italy (pending)	✓	✓	✗	✓
Norway	✗ <sup>43</sup>	✗	✗	✗

<sup>42</sup> Ofcom Strategic Review paper, at paragraphs 1.21 and 1.22 (emphasis added)

<sup>43</sup> The obligation in Norway is an obligation to publish the terms and conditions of supply of publicly available telephone services rather than a requirement to file tariffs with the regulator.

Country	Ex ante tariff filing	Ex ante tariff approval	Price floors	Price caps
(review pending)				
Singapore	✓	✓	✗	✓
Switzerland <sup>44</sup>	✗	✗	✗	✓ <sup>45</sup>

- 3.12 In Switzerland, the Federal Office of Telecommunications (**OFCOM**) has recently determined that VOIP is a “telecommunications service” and that VOIP service providers must comply with licensing, service quality and other non-economic regulations.<sup>46</sup> Further non economic regulation could be imposed on VOIP services if they are found to be ‘public telephone services’.
- 3.13 In relation to the form of ex ante regulation of VOIP that is likely, we note that, at present, there is no prior tariff approval required of PSTN and hence, it is unlikely that prior tariff approval will be required of VOIP, VOIP services will only be subject to economic regulation in Switzerland if they are found to be a “universal service” provided by the universal service provider Swisscom Fixnet AG. In that case any VOIP services that fall within the definition of a universal service will be required to comply with a price ceiling. The issue of what that price ceiling should be and how that should be different to the price ceiling for PSTN is still being considered.
- 3.14 Lastly, the LYA report is misleading because it underplays the impact which the European Commission’s views on VOIP regulation as illustrated by its approval of the French regulator’s decision, is likely to have on NRAs which are yet to make a final decision on economic regulation such as Germany. NRAs are required to notify the Commission of their proposed regulatory measures. Where the European Commission’s phase one analysis indicates that the proposals would create a barrier to a single market or appear incompatible with Community law it can conduct a detailed investigation, the outcome of which may be a decision to require the NRA to withdraw its proposed measures. Even in those cases which do not proceed beyond the phase one analysis, the European Commission will send a letter to the NRA outlining its comments on market definition, SMP findings and the proportionality and justification of the proposed remedies.
- 3.15 The European Commission for example has commented in the case of the German market definition:

<sup>44</sup> As LYA notes Switzerland has been attempting to reform its regulatory framework for some time.

<sup>45</sup> The obligation in Switzerland is actually a price ceiling rather than a price cap. The price ceiling applies to call services of the designated universal service provider that are within the universal service definition.

<sup>46</sup> Articles 4, 11, 36, 43, 44, 47 and 59 of the Law on Telecommunications

*“The German regulator has also assessed the market with a view to ongoing technological developments and has included Voice over Internet Protocol (VOIP) services in the market definition of the calls market. VOIP services are set to become increasingly important in the future and are already substitutes for traditional Public Service Telephone Network (PSTN) telephony. The regulatory authorities of France and the Netherlands had already examined VOIP services in their respective notifications earlier this year. The Commission now supports BNetzA’s position with regard to these innovative services and believes it will boost competition in fixed line telephony markets.”<sup>47</sup>*

**4. Is VOIP regulation affected by the level of VOIP penetration?**

- 4.1 The LYA report implies that the reason VOIP is not regulated in many countries is because VOIP penetration or usage is so low that VOIP is too insignificant for regulators to worry about. LYA implies that regulators will move to regulate VOIP once penetration begins to escalate and that the CRTC has taken a prudent approach by acting before that occurs.<sup>48</sup>

*“for the moment, VOIP services are being offered in most European countries without economic regulation for different reasons. These reasons include in some cases that the market is perceived to be in its early stage of emergence and thus too difficult to assess.”*

- 4.2 VOIP however is not subject to significant ex ante retail regulation in both markets which have high and low VOIP penetration.
- 4.3 In countries in which VOIP penetration is low, there is usually no competitive problem with VOIP which would require the imposition of economic regulation on retail VOIP services. Rather forbearing from imposing regulation can assist in driving penetration. In markets in which VOIP penetration is high, this can help to reduce barriers to entry in other call markets thus potentially leading to the reduction or elimination of economic regulation across both VOIP and PSTN. As the Commission said of Denmark’s decision not to include VOIP in the PSTN market *“Including IP-telephony in the relevant retail markets would only further reduce barriers to market entry.”<sup>49</sup>*

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<sup>47</sup> Commission welcomes decision of German telecom regulator to find the international calls market in Germany competitive “European Commission 23 December 2005.

<sup>48</sup> LYA report, at page 57.

<sup>49</sup> Letter from the Commission on Case DK/2005/0268: Publicly available local and/or national telephone services provided at a fixed location for residential customers. Case DD/2005/0269: Publicly available international telephone services provided at a fixed location for residential customers. Dated 30/11/2005

4.4 It is difficult to find quantitative information on the level of VOIP usage. Figure 4 compares the level of economic regulation of VOIP with our qualitative assessment of VOIP penetration in a number of countries, which also accords with statements in the LYA report:

Figure 4

Country	Comparative level of VOIP penetration <sup>50</sup>	Is tariff approval for VOIP required?
Australia	Low	✗
Belgium	Low	✗
Canada	Moderate but accelerating	✓
Denmark	Moderate but accelerating	✗ <sup>51</sup>
Finland	Moderate but accelerating	✗
France	Low	✗
Germany	Low, but accelerating	Pending, but likely to follow European Commission's endorsement of French decision
Hong Kong	Low but accelerating	✗ <sup>52</sup>
Ireland	Low	✗
Italy	Low	Pending, but likely to follow European Commission's endorsement of French decision
Japan	High	✗

<sup>50</sup> Department of Communications, Information Technology and the Arts, Examination of Policy and Regulation relating to VOIP Services, November 2005, Page 4  
U.S. Department of Commerce, Worldwide VOIP Regulatory and Market Information Report, January 2006, Pages 8, 17, 21, 30, 32, 39  
CCTA Annual Report, 2004 – 2005, Broadband Penetration Rates

Federal Network Agency (Bundesnetzagentur), Consultation on VOIP (Official Gazette: 8 2004), 21 April 2004

Arthur D Little, Broadband Update: 2005, July 2005, Page 20

Ofcom, Communications Market 2005: 3 Telecommunications, 2005, Pages 95 – 96

Ovum, Japan interconnect analysis, 27 June 2005, page 11.

<sup>51</sup> As the Universal Service Provider, TDC's subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark's market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>52</sup> Tariff prices must be published for information.

Country	Comparative level of VOIP penetration <sup>50</sup>	Is tariff approval for VOIP required?
Netherlands	Low but accelerating	✗ <sup>53</sup>
Norway	Moderate but accelerating (twice cable telephony penetration)	✗ <sup>54</sup>
Singapore	Low	✓ <sup>55</sup>
South Korea	High	✗ <sup>56</sup>
Spain	Low	✗
Sweden	Moderate but accelerating	✗
Switzerland	Low	✗ <sup>57</sup>
UK	Low, but accelerating	✗

4.5 Japan and South Korea demonstrate the fallacy of LYA’s argument. Japan does not regulate VOIP and South Korea currently only has a price publication requirement and yet, VOIP penetration in both countries is amongst the highest in the world.<sup>58</sup> Japan had over 7.02 million VOIP users and 16 million VOIP specific numbers as at September 2004.<sup>59</sup> As noted in the footnotes to Figure 4 above, the U.S. Department of Commerce in 2006 estimated that of the total worldwide users of VOIP, about 80% are in Japan. Both Japan and South Korea apply ex ante regulation to ILEC PSTN services.

4.6 Thus, contrary to LYA’s assertion, countries with high VOIP penetration have low levels of ex ante VOIP regulation while those countries with extensive VOIP regulation, such as Canada and Singapore have lower levels of VOIP penetration. While many factors will drive VOIP penetration, the relative regulatory burden is likely to play a role.

**5. Is the extent of VOIP regulation affected by the level of high speed broadband penetration?**

5.1 The LYA report also seeks to explain away the lack of VOIP regulation in many other countries on the basis that those countries have a much lower broadband penetration than

<sup>53</sup> VOIP prices are subject to a price floor and obligations of non discrimination and transparency.

<sup>54</sup> While there is a review pending, existing regulations do not require tariff approval.

<sup>55</sup> It is possible for the ILEC to offer VOIP

<sup>56</sup> Publication of tariffs is required for all operators.

<sup>57</sup> A price ceiling applies if the VOIP service is a universal service.

<sup>58</sup> If an operator is declared to be dominant in respect of VOIP, then a tariff approval requirement will be imposed on that operator in respect of its VOIP services. However, at present, no operator has been declared to be dominant in respect of VOIP.

<sup>59</sup> Ovum, Japan interconnect analysis, 27 June 2005, page 11.

Canada and, as good quality VOIP penetration depends on broadband, VOIP is therefore unlikely to be considered significant enough to regulate.<sup>60</sup>

*“If, contrary to Canada, the penetration of high-speed Internet in a given country is so low as to marginalize the impact of VOIP in the market place, then the regulator may choose not to spend time and resources on VOIP until such time as it can realistically be viewed as having a chance for mass-market deployment.”*

5.2 This argument suggests that regulators will move to regulate VOIP as broadband penetration increases. However the argument is flawed in that the higher the level of broadband penetration the more likely it is that competitive VOIP services will emerge and therefore the less likely the need for regulation.

5.3 Figure 5 illustrates that even in markets with high broadband penetration VOIP is not subject to extensive ex ante regulation.

Figure 5

Country	Broadband penetration (per 100 inhabitants) <sup>61</sup>	Is tariff approval of VOIP required?
South Korea	25.5	✗ <sup>62</sup>
Netherlands	22.5	✗ <sup>63</sup>
Hong Kong	21 <sup>64</sup> - 22 <sup>65</sup>	✗ <sup>66</sup>
Denmark	21.8	✗ <sup>67</sup>
Switzerland	20.3	✗ <sup>68</sup>
Canada	19.2	✓

<sup>60</sup> LYA report, at page 5.

<sup>61</sup> Source: OECD (June 2005)

[http://www.oecd.org/document/16/0,2340,en\\_2825\\_495656\\_35526608\\_1\\_1\\_1\\_1,00.html#data2004](http://www.oecd.org/document/16/0,2340,en_2825_495656_35526608_1_1_1_1,00.html#data2004)

<sup>62</sup> Publication of tariffs is required for all operators.

<sup>63</sup> A price floor applies to KPN's VOIP services.

<sup>64</sup> Source: Point-Topic.com (December 2004),

<http://www.point-topic.com/content/dslanalysis/Q304%20BB%20analysis%20041215.htm>

<sup>65</sup> Source: Hong Kong Information Services Department

<http://www.info.gov.hk/hkfacts/telecom.pdf>

<sup>66</sup> Publication of tariffs for information is required.

<sup>67</sup> As the Universal Service Provider, TDC's subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark's market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>68</sup> A price ceiling applies if the VOIP service is a universal service.

Country	Broadband penetration (per 100 inhabitants) <sup>61</sup>	Is tariff approval of VOIP required?
Norway	18.2	✗ <sup>69</sup>
Sweden	16.5	✗
Japan	16.4	✗
UK	13.5	✗
France	12.8	✗
Australia	10.9	✗
Italy	10	Pending, but likely to follow European Commission's endorsement of French decision
Spain	9.3	✗
Ireland	4.3	✗

5.4 The more significant flaw in LYA's argument is that Canada's broadband penetration is comparatively high because cable networks duplicate most of the ILEC copper networks. As we discuss below, the much higher penetration of competing network infrastructure in Canada is not, as LYA implies, a basis to regulate VOIP but is the reason why Canada can be less dependent on regulation than many other countries.

**6. Is the extent of VOIP regulation affected by the extent of wholesale regulation?**

6.1 The LYA report argues that a reason Canada should have more retail regulation of ILEC VOIP services than many other countries is because Canada has less wholesale regulation and, in particular, it does not require carrier preselection (CPS) of local calls on the ILEC's PSTN.<sup>70</sup>

*"...[T]he alternatives to offer VoIP are focused on service providers such as Internet Service Providers (ISPs) and others who do not own their facilities. This often implies a stronger focus of the regulatory agenda on access to facilities provided by the incumbent telephone companies and on ensuring low interconnect or wholesale prices to the incumbent's facilities to enable competition to develop.*

<sup>69</sup> Although review is pending existing PSTN regulations do not require tariff approval.  
<sup>70</sup> LYA report, at page 33.

*“The fact that local calls are metered and billed separately from the local access lines and the implementation of CPS both impact the assessment of the competitive environment for VOIP services. VOIP services offered using the incumbent telco’s facilities are similar in nature to the local calling services offered on a CPS basis, which have already captured significant market share in many large European countries. ...*

*The focus on CPS and the resulting market share loss of incumbent telephone companies in call revenues means that the assessment of market dominance and thus the need for ex ante regulation of local voice services and hence eventually of VOIP services is very different compared to Canada where the provider of the local access lines receives 100% of the local call revenue.”*

6.2 LYA’s argument turns in on itself. The very reason that wholesale regulation such as CPS is applied in European Union member states is because, in the absence of ubiquitous competing networks, wholesale access represents a “second best” alternative to achieve competition. Calling services are “unbundled” from the ILEC’s access lines because the ILEC’s local access network is likely to remain the monopoly network, aside from limited pockets of alternative network in business districts and more densely populated urban areas. As many, if not most, customers will never be able to choose between competing networks running past their front door, the only option to provide them with some semblance of competition is to encourage services-based competition on the ILEC’s monopoly network through regulatory requirements such as CPS.

6.3 By contrast, Canada has one of the world’s highest penetrations of alternative network infrastructure. The ILECs’ networks are duplicated not only in urban pockets but across substantially all of the country. As LYA itself notes, Canada “stands out” in the high level of alternative network penetration which it has been able to achieve notwithstanding that Canada lacks conditions favouring alternative networks found in other countries:<sup>71</sup>

*“All the countries reviewed with strong cable company networks and alternatives for local voice access services have a much smaller territory and much higher population density than Canada. Among these we note Hong Kong, Singapore, Belgium, Denmark, South Korea and the UK. Financing and building alternative facilities-based networks in some of these countries could be compared to building out the Greater Toronto Area (GTA) only in Canada, a much smaller endeavour than building out facilities across the entire country. **In this respect, the success achieved in Canada in sustaining and growing alternate cable television networks clearly stands out and bodes well for consumers going forward.**”*

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<sup>71</sup> LYA report, at page 34 (emphasis added).

- 6.4 If Canada has much more competing infrastructure than most other countries, it logically follows that Canada has much less need for regulation, whether at the retail or wholesale levels, than other countries. Canada can rely on the “first best” option of infrastructure based competition rather than the second best alternative of regulation. As the UK regulator has said of the UK’s position relative to countries such as Canada:

*“Cable networks have made an important and valuable contribution to competition in access provision. But unlike certain other countries, cable has never become the default distribution platform for pay TV in the UK, and its geographic spread remains limited..”*<sup>72</sup>

- 6.5 LYA itself recognises the inverse relationship between the extent of alternative infrastructure, particularly Cable TV, and the need for regulation:<sup>73</sup>

*“Those countries that are succeeding in developing alternative facilities-based provider for local voice access services are those with strong cable company networks, such as the UK, Denmark, the Netherlands, Singapore, South Korea, Hong Kong, and of course Canada. It is also not a surprise that these same countries are those, except for Finland, Switzerland and Sweden, with the highest penetration achieved for high-speed Internet access. ... This also means that the market share loss in residential access lines experience in [countries with less cable infrastructure] is also very limited due to facilities-based alternative providers and that this situation is unlikely to change significantly over the next few years. In these cases, the alternatives to offer VOIP are focused on service providers such as Internet Service Providers (ISPs) and others who do not own their facilities. **This often implies a stronger focus of the regulatory agenda on access to facilities provided by the incumbent telephone companies and on ensuring low interconnect or wholesale prices to the incumbent’s facilities to enable competition to develop...**”*

- 6.6 Accordingly, LYA provides the answer to its own argument that Canada needs VOIP retail regulation because it has less wholesale regulation. That is, whether regulation at a wholesale or retail level is needed is dependent on whether there is facilities-based competition or not. Where there is little facilities-based competition, regulators impose a mix of wholesale and retail regulation as a proxy for facilities-based competition. As LYA itself has recognised in the passage quoted above, the clear trend in these instances is to move away from retail regulation and rely on wholesale regulation. Hence, the reason for retail regulation, at the minimum level that it is imposed, is the absence of

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<sup>72</sup> Ofcom, Strategic Review of Telecommunications: Phase 2 Consultation Document, 18 November 2004, Para. 4.92

<sup>73</sup> LYA report, at pages 32 and 33, emphasis added.

facilities-based competition and not, as suggested by LYA, the absence of wholesale regulation.

- 6.7 As Figure 6 shows, Canada actually has **more** retail VOIP regulation than countries which have **less** alternative VOIP-capable infrastructure than Canada.

Figure 6

Country	Cable penetration (per 100 inhabitants) <sup>74</sup>	Is tariff approval of VOIP required?
Canada	9.7	✓
Netherlands	8.9	✗ <sup>75</sup>
US	8.0	✗
Switzerland	7.2	✗ <sup>76</sup>
Denmark	6.1	✗ <sup>77</sup>
UK	3.8	✗
Sweden	2.7	✗
Norway	2.5	✗ <sup>78</sup>
Australia	2.4	✗
Japan	2.4	✗
Spain	2.2	✗
Finland	2.2	✗
France	0.8	✗
Ireland	0.4	✗

<sup>74</sup> Source: OECD (June 2005)

[http://www.oecd.org/document/16/0,2340,en\\_2825\\_495656\\_35526608\\_1\\_1\\_1\\_1,00.html#data2004](http://www.oecd.org/document/16/0,2340,en_2825_495656_35526608_1_1_1_1,00.html#data2004).

<sup>75</sup> A price floor applies as does obligation of non discrimination and transparency.

<sup>76</sup> A price ceiling applies if the VOIP service is a universal service.

<sup>77</sup> As the Universal Service Provider, TDC's subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark's market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>78</sup> While a review is pending existing PSTN regulation does not require tariff approval.

Country	Cable penetration (per 100 inhabitants) <sup>74</sup>	Is tariff approval of VOIP required?
Italy	0	Pending, but likely to follow European Commission's endorsement of French approach
Hong Kong	N/A	✗ <sup>79</sup>
Singapore	N/A	✓

6.8 LYA's report ignores the example of the United States despite the US being the obvious comparator market in that it has a comparable level of ubiquitous penetration of cable infrastructure as Canada. As outlined in the report on the U.S. federal and state regulatory treatment of VOIP service offerings by Hogan & Hartson, LLP which was included in the petitioning parties' initial submission the US does not regulate VOIP:<sup>80</sup>

*"In the United States, neither federal nor state regulatory authorities impose rate regulation upon VOIP services offered by incumbent local exchange carriers ("ILECs") or their affiliates. Indeed, the FCC has specifically concluded that state public utility commissions are precluded from regulating VOIP, and several U.S. federal district courts have reached similar conclusions. Moreover, the FCC has made it clear that it has no intention of subjecting VOIP services to retail rate regulation – whether they are offered by ILECs or other parties. This reflects the general view, expressed by the FCC and various FCC Commissioners on numerous occasions, that IP enabled services and the Internet in general have "become one of the greatest drivers of consumer choice and benefit, technical innovation, and economic development in the United States in the last ten years. . . in an environment that is free of many of the regulatory obligations applied to traditional telecommunications services and networks."<sup>81</sup>*

<sup>79</sup> Publication of tariffs for information is required.

<sup>80</sup> Hogan & Hartson, LLP, Re. United States Federal and State Regulatory Treatment of Voice Over Internet Protocol service Offerings, 21 July 2005, Pages 1 – 2

<sup>81</sup> *IP-Enabled Services*, Notice of Proposed Rulemaking, 19 FCC Rcd 4863, ¶ 1 (2004); *see also Vonage Holdings Corp. Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, 19 FCC Rcd 22404 (2004) (Separate Statement of Former FCC Chairman Michael K. Powell) ("If we let competition and innovation rage, unencumbered by the high cost of regulation, consumers can expect more of the same – lower prices, more choice, and more innovative offerings."); *id.* (Separate Statement of Commissioner Kathleen Q. Abernathy) ("By fencing off these services from unnecessary regulation, this Order will help unleash a torrent of innovation."); *id.* (Concurring Statement of Commissioner Jonathan S. Adelstein) ("IP-based services will play an important role in our global economic competitiveness, by enabling economic productivity, providing a platform for innovation, and driving demand for broadband facilities.")

**7. Does the regulator’s determination that the ILEC is dominant affect the level of VOIP regulation?**

7.1 The LYA report correctly notes that:<sup>82</sup>

*‘if the local telephone market has already been deemed fully competitive and foreborne from ex ante price regulation, then it follows that VOIP services that are substitutes to POTS are also foreborne from ex ante regulation.’*

7.2 The LYA report mentions Hong Kong. Other examples from the European Union are Sweden and at least as regards some retail calls services, Demark.<sup>83</sup>

7.3 However, the converse does not apply. While regulators have found the ILEC’s market power in PSTN services persists, that has not been a bar to them deciding not to apply extensive ex ante tariff regulation to VOIP services supplied by the ILEC, as Figure 7 shows:

Figure 7

Countries in which ILEC found to have dominance /SMP in PSTN services	Is tariff approval of VOIP required?
Canada	✓
France	✗
Ireland	✗
UK	✗
Netherlands	✗ <sup>84</sup>
Norway	✗
South Korea	✗ <sup>85</sup>
Spain	✗

<sup>82</sup> LYA report, at page 5.

<sup>83</sup> The Danish regulator has found no operator has SMP in the market for local/national calls to non residential customers. However although the regulator has made a finding of SMP in the equivalent market for residential customers it has still chosen not to impose any SMP regulation at the retail level. The only regulation applied is the universal service regulation referred to in the footnote to Figure 4.

<sup>84</sup> A price floor applies as does the obligation of non discrimination and transparency.

<sup>85</sup> Publication of tariffs is required for all operators.

Countries in which ILEC found to have dominance /SMP in PSTN services	Is tariff approval of VOIP required?
Switzerland	X <sup>86</sup>

**8. Does government ownership of the ILEC affect the level of VOIP regulation?**

8.1 The LYA report argues that a possible explanation for other regulators imposing less regulation on ILEC VOIP services than Canada is that their ILECs continue to be wholly or partly owned by the national Government, where this is not the case for most Canadian ILECs:<sup>87</sup>

*“There is significant state ownership in incumbent telephone companies in many countries. It could be argued that it is in the best interest of governments to ensure that incumbent telephone companies operate in the most favourable of regulatory environments when they are still fully or partially state owned and when one is considering sale of these assets. As noted in recent press reports pertaining to the sale of Telstra “current regulations had allowed Telstra to deliver its biggest ever profit<sup>88</sup>” and Telstra has been challenged to explain its low share price. No economic regulation VOIP services before the market fully develops could be also perceived as one way to sustain the revenue profile of these same incumbent telephone companies.”*

8.2 In fact, the only other ILEC which is subject to extensive ex ante regulation of its VOIP services is SingTel, which is majority owned by the Singaporean Government.

8.3 As Figure 8 shows, with the exception of Singapore VOIP is not the subject of a requirement for tariff approval both in countries where the ILEC is Government owned and countries where it is not:

Figure 8

Country	Does the government own an interest in the ILEC?	Is tariff approval of VOIP required?
Australia	✓	X

<sup>86</sup> A price ceiling applies if the VOIP service is a universal service.

<sup>87</sup> LKA report, at page 31.

<sup>88</sup> “Minister turns up pressure on Telstra”, The Sydney Morning Herald, Stephanie Peatling, September 5, 2005.

Country	Does the government own an interest in the ILEC?	Is tariff approval of VOIP required?
Denmark	✓	✗ <sup>89</sup>
Finland	✓	✗
France	✓	✗
Germany	✓	Pending, but likely to follow European Commission's endorsement of French approach
Hong Kong	✗	✗ <sup>90</sup>
Ireland	✗	✗
Italy	✗	Pending, but likely to follow the European Commission's endorsement of French approach
Japan	✓	✗
Netherlands	✓	✗ <sup>91</sup>
New Zealand	✗	✗
Norway	✓	✗ <sup>92</sup>
Singapore	✓	✓
South Korea	✗	✗ <sup>93</sup>
Spain	✗	✗
Sweden	✓	✗
Switzerland	✓	✗ <sup>94</sup>
UK	✗	✗

<sup>89</sup> As the Universal Service Provider, TDC's subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark's market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>90</sup> Publication of tariffs for information is required.

<sup>91</sup> A price floor applies to the ILEC's VOIP services.

<sup>92</sup> While a review is pending existing PSTN regulation does not require tariff approval.

<sup>93</sup> Publication of tariffs is required for all operators.

<sup>94</sup> A price ceiling applies if the VOIP service is a universal service.

Country	Does the government own an interest in the ILEC?	Is tariff approval of VOIP required?
US	✘	✘

8.4 LYA’s comment also ignores the reality that an independent regulator is a fundamental requirement of the new European regulatory framework<sup>95</sup> and that the oversight role of the European Commission is to ensure consistent application of the regulatory framework and to ensure a level playing field across Europe.

**9. Does the regulator’s decision to apply PSTN non-economic regulation to VOIP require PSTN economic regulation also to be applied?**

9.1 The LYA report correctly notes that many regulators have decided that VOIP should be subject to some of the numbering, technical and consumer protections, which apply to PSTN services, at least where VOIP services are promoted as a direct substitute for PSTN services:<sup>96</sup>

*“In most countries, the development of the VOIP regulatory framework has just begun. As VOIP has, to date, had a relatively small or negligible impact on local telephone markets, most regulators have initially focused on issues related to consumer protection, access to emergency services, access to telephone numbers and lawful intercept. Questions related to the impact of VOIP on the competitive environment and the need for economic regulations of VOIP services provided by incumbent local exchange carriers have yet to be fully addressed, except in the cases of Canada, Singapore and Hong Kong, and to some extent in France and Sweden.”*

9.2 LYA implies that the extension of PSTN non-economic regulation will inevitably be followed by PSTN economic regulation, as the CRTC has done.

9.3 This is also misleading. Many, if not most, of the regulators which have decided to apply some level of non-economic regulation to VOIP have actively decided not to impose economic regulation. These regulators have determined that the market and competitive conditions do not warrant economic regulation but that a level of non-economic regulation is required to preserve the integrity of the rational numbering plan, or to

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<sup>95</sup> Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) Article 3.

<sup>96</sup> LYA report, at page 3.

protect consumers who use VOIP in substitution for PSTN services, such as the reliability of emergency calling services.

9.4 Figure 9 illustrates that although all countries require non economic regulation of VOIP services, economic regulation of VOIP services remains minimal.:

Figure 9

Country	Non-economic	Is tariff approval of VOIP required?
Australia	Yes <sup>97</sup>	✗
Denmark	Yes <sup>98</sup>	✗ <sup>99</sup>
Hong Kong	Yes <sup>100</sup>	✗ <sup>101</sup>
Ireland	Yes <sup>102</sup>	✗
Italy	Yes <sup>103</sup>	Pending, but likely to follow the European Commission's endorsement of French approach
Japan	Yes <sup>104</sup>	✗

<sup>97</sup> Certain VOIP services classified as a standard telephone service must provide emergency access, calling line identification and the customer service guarantee which stipulates minimum service levels in relation to local access. Those VOIP services that are not classified as a standard telephone service will not be subject to the customer service guarantee but will be subject to a regime of compulsory service level disclosure. A non compulsory number range for VOIP services will be created.

<sup>98</sup> Emergency access required but no obligation to provide calling line identification. The location information of the caller must be provided.

<sup>99</sup> As the Universal Service Provider, TDC's subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark's market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>100</sup> Two classes of VOIP licenses exist. Services under Class 1 must provide number portability, printed directory listing and the same quality of service as a conventional telephone service. Class 2 services are subject to minimal consumer protection requirements including no obligation to provide number portability. Operators for both classes of services must provide free emergency services access if they assign telephone numbers to those services from the existing Numbering Plan. Both classes of service must provide calling line identification.

<sup>101</sup> Publication of tariffs for information is required.

<sup>102</sup> Emergency access required with calling line identification. Call is delivered to the nearest appropriate emergency service centre. The location information of the caller must be provided. Geographic number ranges are open for VOIP services.

<sup>103</sup> Emergency access required. Number portability, number identification and wiretapping also allowed.

<sup>104</sup> A separate service category exists for IP telephony services and a different number range must be dedicated for each service category.

Country	Non-economic	Is tariff approval of VOIP required?
Norway	Yes <sup>105</sup>	✗ <sup>106</sup>
Singapore	Yes <sup>107</sup>	✓
Sweden	Yes <sup>108</sup>	✗
Switzerland	Yes <sup>109</sup>	✗ <sup>110</sup>
UK	Yes <sup>111</sup>	✗
US	Yes <sup>112</sup>	✗

**10. Does the principle of technology neutrality require VOIP services to be regulated in the same way as PSTN services?**

10.1 The LYA report suggests that a regulator’s acceptance of the principle of technology neutrality will drive towards a conclusion that VOIP and PSTN should be regulated in the same way:<sup>113</sup>

*“If there is one principle on which all regulators seem to agree, it is that telecommunications services should be regulated on a technology-neutral basis. Of*

<sup>105</sup> Emergency access required with calling line identification. The location information of the caller must be provided. Number portability and geographic numbers are made available on condition that the number have a nexus with Norway and are used predominantly from the user’s permanent address. A separate number series has been dedicated for nomadic use. Temporary exemptions from obligations are available.

<sup>106</sup> While a review is pending existing PSTN regulation does not require tariff approval.

<sup>107</sup> Special number ranges are dedicated to VOIP services. VOIP operators are not required to provide emergency call access but are required to inform users as to whether emergency call access is provided. If it is provided, it must be free-of-charge. Number portability has not been mandated and quality of service standards have not been imposed. VOIP providers that choose to interconnect with PSTN and mobile networks must comply with the Telecom Competition Code.

<sup>108</sup> Emergency access required with calling line identification. The location information of the caller must be provided. Geographic number ranges are open for VOIP services.

<sup>109</sup> Emergency access required with calling line identification. The location information of the caller must be provided. Geographic number ranges are open for VOIP services. Nomadic use is allowed.

<sup>110</sup> A price ceiling applies if the VOIP service is a universal service.

<sup>111</sup> New services may enter the market and offer emergency access. Only providers who comply with all the obligations of a ‘publicly available telephone service’ as defined in Article 2 of the Universal Service Directive may derive the benefits of number portability. VOIP providers may assign telephone numbers from the same numbering ranges as providers of traditional telephone services.

<sup>112</sup> VOIP operators must supply enhanced 911 emergency calling capabilities, including providing emergency operators with the call back number and location information of users. Geographic location is currently achieved by means of end user self reporting. VOIP providers must also accommodate wiretaps. No number ranges are dedicated to VOIP services.

<sup>113</sup> LYA report, at pages 4-5.

*all the countries highlighted in this Report, not one has chosen to regulate VOIP services differently than other voice services because it is based on a different technology platform than traditional circuit-switched Plain Old Telephone Service (POTS)<sup>114</sup>. Service attributes and usage by consumers are the key elements on which regulators, as well as competition tribunals, have based their assessment of VOIP services. The regulatory framework for PSTN interconnected VOIP services is therefore closely coupled with the framework for POTS in the countries surveyed as part of this Report.”*

- 10.2 While technology neutrality is a truism of telecommunications regulation worldwide, it is important to understand its purpose and consequences for regulatory decision making. Technology neutrality means only that regulators should not artificially distinguish between regulation of different services based on the fact that those services are provided using different technologies. But the converse does not apply. That is, technology neutrality does not automatically mean services should be regulated uniformly, disregarding their technical differences. Regulators should be technology neutral, not technology blind. The OECD, in its most recent report on policy considerations of VOIP released on 20 March 2006, agreed with this view (emphasis added):<sup>115</sup>

*“Technology neutral regulation implies that regulations neither impose nor discriminate in favour of a particular type of present or future technology. Technological neutrality does not necessarily imply that the existing set of regulations (economic and social) for PSTN voice services should be imposed automatically on VoIP services. When it comes to economic regulation, technology neutrality may mean that the same competition criteria, rather than same regulations, apply to VoIP and PSTN voice services.”*

- 10.3 On this basis, the principle of technology neutrality impacts on regulation of VOIP at two levels. First, where regulation is based on economic principles, which is now the universal approach, it is necessary to determine whether two services are in the same market. In this exercise, technology neutrality means that services should not be assumed to be in different markets because they use different technology. However, it does not follow that the regulator should be technology blind in assessing markets where technical differences are relevant to market definition. In this instance, market definition is a question of fact in each market. The OECD has agreed with this aspect of technology neutrality:<sup>116</sup>

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<sup>114</sup> Among EU countries, the corresponding terminology used is PATS for Public Access Telephone Service.

<sup>115</sup> OECD, *Policy Considerations of VOIP*, 20 March 2006, Page 5

<sup>116</sup> OECD, *Policy Considerations of VOIP*, 20 March 2006, Page 10

*“In terms of economic regulation, the technology neutrality concept may merely mean that the same competition criteria apply to VoIP and PSTN voice services. The competition criteria may include elements used to decide if a market should be defined for ex ante regulation, those used for market definition or those that designate a dominant supplier(s). The competition policy applicable to VoIP could differ compared to PSTN voice in that a technology has the ability to impact and alter the state of market competition, thereby altering the appropriate competition policy.”*

10.4 Given that market definition is a question of fact in each market, in some markets, regulators have determined that VoIP is not in the same market as PSTN, such as in the UK, because of the current differences in service quality attributable to the underlying technologies used to supply them. Other regulators, looking to future improvements in VOIP technology, have decided VOIP and PSTN are or shortly will be in the same market. While those regulators have reached different views on market definition based on their assessments of the technology used to supply VOIP and PSTN, they all adhere to the principle of technology neutrality.

10.5 Secondly, once the markets are defined and market power analysis undertaken, the EU model explicitly and other regulatory models implicitly require the regulator to separately consider the proportionality of regulation. That is, the fact that two services fall within the same market does not mean that it would be reasonable and proportionate to regulate them in the same way. It is on this basis that regulators which have decided that VOIP and PSTN are in the same market but that VOIP should not be regulated in the same way as PSTN also adhere to the principle of technology neutrality. As the LYA report itself notes, *“the concept of technology neutrality is embedded in the [EU New Regulatory Framework]”*<sup>117</sup>, yet the European Commission has endorsed decisions by NRAs not to regulate VOIP in the same way as PSTN, such as the French regulator’s decision. As the Framework Directive says:

*“The requirement for Member States to ensure that national regulatory authorities take the utmost account of the desirability of making regulation technologically neutral, that is to say that it neither imposes nor discriminates in favour of the use of a particular type of technology, does not preclude the taking of proportionate steps to promote certain specific services where this is justified, for example digital television as a means for increasing spectrum efficiency.”*

10.6 Again, the principle of technology neutrality does not require that the technological differences be disregarded. In fact, it is quite the opposite. As innovation is recognised as the primary economic benefit of competition in telecommunications markets,

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<sup>117</sup> LYA report, at page 19.

regulators see it as their role to ensure that regulation does not unduly impede innovation by competitors (including the incumbent). Therefore, although a services provided by traditional technology in a market may be regulated, the regulator may still decide that, for innovation reasons, a new service in the same market will not be regulated in the same way unless the incumbent already has a dominant position in the new service. The OECD has stated this as follows (emphasis added):<sup>118</sup>

*“However, technologically neutral regulation should be interpreted so as not to suppress technological innovation, particularly with respect to nurturing future technologies. If the existing regulations crafted for PSTN voice services are simply transposed to VoIP services, there may be cases where VoIP services could be considered illegal or subject to onerous requirements which would inhibit the diffusion of the new technology.”*

- 10.7 Technological neutrality is therefore only one of the factors to be considered in the assessment of whether economic regulation is required.

## **11. Conclusion**

- 11.1 The LYA submission attempts to demonstrate that the CRTC’s decision is out of step with the position taken by other regulators but more importantly, that other regulators, in time, are likely to follow the CRTC position.

- 11.2 LYA’s key thesis can be summed up as follows:<sup>119</sup>

*“The notion that there is a unanimous approach to VOIP regulation around the world and that this approach is diametrically opposed to what the CRTC has set in place in Canada does not stand up to closer scrutiny. On the contrary, the approach used by the CRTC to review VOIP is very similar to what has been happening in other countries. The CRTC approach can be generally described as first to determine the related market segments associated with VOIP services, and then to apply the regulatory framework associated with those specific market segments to the appropriate VOIP services.”*

- 11.3 We would agree that there is not a single unanimous approach to VOIP regulation. That is, there is not one decision making structure by which all regulators have reached their decisions on whether or not to regulate VOIP. However, where we depart from LYA is that, even when regulators adopt different approaches to making decision on regulation, the predominant trend worldwide is to arrive at a common conclusion. This common

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<sup>118</sup> OECD, *Policy Considerations of VOIP*, 20 March 2006, Page 11

<sup>119</sup> LYA report, at page 3

conclusion is that there should not be any extensive ex ante economic regulation of an ILEC's provision of VOIP services.

- 11.4 LYA says the approach used by CRTC to review VOIP is very similar to what has occurred in other countries. Again we would disagree. While the CRTC approach of determining the relevant market segment may be carried out by most countries, it is at the next steps that there is divergence of action. These next steps are first, determining whether there is some form of market failure in respect of VOIP and then determining what, if any, economic regulations are necessary to address that market failure. As the examples of France and the Netherlands illustrate, it is not simply a matter of applying existing regulatory frameworks for a market to any service that falls within that market. Rather, any regulations, if they are applicable at all, must be tailored to suit particular competitive problems.
- 11.5 Therefore, in contrast to LYA, we would argue that it is on these next steps (as well as on the preliminary point about the level of overall PSTN regulation applied) where the CRTC's decision diverges from the growing trend worldwide to not apply extensive ex ante economic regulation to ILEC VOIP services.

Annex 1

Comparative Regulatory Treatment of PSTN Voice Service and VOIP – Summary Table							
	Retail PSTN Voice Regulation			Retail VOIP Regulation			Does the ILEC supply a VOIP service?
	Is tariff notification required for PSTN voice?	Is tariff approval required for PSTN voice?	Do price caps apply to PSTN voice <sup>120</sup> ?	Is tariff notification required for VOIP?	Is tariff approval required for VOIP?	Do price caps apply to VOIP?	
Australia	x <sup>121</sup>	x	✓	x	x	x	x
Belgium	x	x	✓	x	x	x	x
Canada	✓	✓	✓	✓	✓	✓	✓
Denmark	x	x	✓ <sup>122</sup>	x	x	x <sup>123</sup>	x
Finland	x	x	x	x	x	x	✓
France	✓	✓	x	x	x	x	✓
Germany	✓	x	x	Pending, but likely to follow the European Commission’s endorsement of French approach	Pending, but likely to follow the European Commission’s endorsement of French approach	Pending, but likely to follow the European Commission’s endorsement of French approach	x
Hong Kong	✓	x	x	✓ <sup>124</sup>	x	x	✓
Ireland	✓	x	✓	x	x	x	✓
Italy	✓	✓	✓	Pending, but likely to follow the European Commission’s endorsement of French approach	Pending, but likely to follow the European Commission’s endorsement of French approach	Pending, but likely to follow the European Commission’s endorsement of French approach	✓
Japan	✓	x	✓	x	x	x	✓
New Zealand	x	x	x	x	x	x	x
Malaysia	x	x	✓	x	x	x	x
Netherlands	x	x	x	x	x	Price floor	x
Norway	x <sup>125</sup>	x	x	Pending <sup>126</sup>	x	x	✓
Philippines	✓	✓	✓	x	x	x	x
Singapore	✓	✓	✓	✓ <sup>127</sup>	✓	✓	x
South Korea	✓ <sup>128</sup>	✓	x	✓ <sup>129</sup>	x <sup>130</sup>	x	✓
Spain	✓	✓ <sup>131</sup>	x <sup>132</sup>	x	x	x	✓

<sup>120</sup> Price caps refer to a separate price control mechanism from tariff approval. Price caps involve a minimum annual price reduction linked to a measure of inflation. Price caps may be an alternative form of regulation to ex ante approval of individual tariffs or may be applied cumulatively. Compliance with price caps may be a factor taken into account in determining whether to apply a tariff (that is, the price cap is applied on a “running basis”) or may be determined separately from tariff approval (that is, an assessment of compliance is made retrospectively).

<sup>121</sup> Ex post information filing requirements.

<sup>122</sup> As the Universal Service Provider, TDC’s subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark’s market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>123</sup> As the Universal Service Provider, TDC’s subscription fees and call set up charges are subject to the universal service price regulation. However as noted by the European Commission in its analysis of Denmark’s market reviews, the Danish government intends to withdraw all remaining universal service price regulation.

<sup>124</sup> This is an information tariff requirement only. ILEC can provide non-tariffed retail VOIP through subsidiary.

<sup>125</sup> Publication of terms and conditions of supply is required as opposed to tariff notification to the regulator and this is subject to the overall review of remedies that is being carried out.

<sup>126</sup> Publication of terms and conditions of supply is required but is subject to the overall review of remedies that is being carried out.

<sup>127</sup> ILEC can provide non-tariffed retail VOIP through subsidiary.

<sup>128</sup> Tariffing for PSTN and VOIP applies to incumbents and entrants alike.

<sup>129</sup> This is a tariff publication requirement for all operators.

<sup>130</sup> If an operator is declared to be dominant in respect of VOIP, then a tariff approval requirement will be imposed on that operator in respect of its VOIP services. However, at present, no operator has been declared to be dominant in respect of VOIP.

<sup>131</sup> In its notification to the Commission Spain has proposed that the SMP remedies to be applied to PSTN services will consist only of providing proposed changes to the regulator 10 days before they take effect and providing the regulator with bespoke offers.

<sup>132</sup> As indicated above the price cap that previously applied to PSTN services is to be abolished on the basis that wholesale regulation is sufficient.

Comparative Regulatory Treatment of PSTN Voice Service and VOIP – Summary Table							
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Sweden	x	x	x	x	x	x	✓
Switzerland	x	x	✓ <sup>133</sup>	x	x	Price ceiling if universal service	x
United Kingdom	✓ <sup>134</sup>	x	✓	x	x	x	✓

<sup>133</sup> As a universal service licensee, price ceiling apply to ILEC's provision of PSTN services.

<sup>134</sup> Tariff amendments can be notified no later than 24 hours after amended price becomes effective.