

# Appendix C – The role and limits of international comparisons in guiding national telecommunication policy

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1. International comparisons allow benchmarking national policies and sector performance. Appropriately used, international examples can contribute to improved national approaches. By the same token, caution is necessary when applying international observations to national contexts. First, policies always need to be seen in their specific national environment as they are contingent upon and interact with these conditions. For example, a policy that works well in Europe may not work as well in North America (and vice versa). Recent research has shown that countries that simply imitate macroeconomic policies developed by other nations may be penalized with deficient performance unless their institutional framework is very similar to the leader country.<sup>1</sup> Whereas detailed studies of the effects of policy imitation in telecommunications are not available, there is plenty of evidence that similar observations hold. Simple imitation of other country's policy approaches is typically not a good strategy.
2. Second, there is no simple, clear-cut relation between institutional arrangements and sector performance. Legal and regulatory rules are not like levers that, once moved, cause certain predictable outcomes. It is important to distinguish between "regulatory governance" (the measures intended to channel and restrain regulatory discretion) and regulatory rules or incentives (which are designed to affect decisions by regulated entities). Regulatory governance is defined by a nation's "institutional endowment", which includes five features:<sup>2</sup> "(1) its legislative and executive institutions; (2) its judicial institutions; (3) the customs and informal, but broadly accepted, norms that constrain action of individuals or institutions; (4) the character of contending social interests and the balance between them, including ideology; and (5) its administrative capabilities".<sup>3</sup> Focusing on private investment in infrastructure, Levy and Spiller argue that it can be satisfactory as long as complementary mechanisms are in place constraining at will regulatory intervention: "(1) substantive restraints on the discretion of the regulator; (2) informal or formal constraints on changing the regulatory system; and (3) institutions that enforce these formal, substantive and procedural, constraints".<sup>4</sup>

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<sup>1</sup> See S. W. Mukand and D. Rodrik, "In Search of the Holy Grail: Policy Convergence, Experimentation, and Economic Performance," *American Economic Review*, 2005, 95(1), pp. 374-383.

<sup>2</sup> See B. Levy and P. T. Spiller, *Regulations, Institutions, and Commitments: Comparative Studies of Telecommunications*, Cambridge: Cambridge University Press, 1996 and B. A. Cherry and S. S. Wildman, "Institutional Endowment as a Foundation for Regulatory Performance and Regime Transitions: The Role of the US Constitution in Telecommunications Regulation in the United States," *Telecommunications Policy*, 1999, 23, pp. 603-627 for an application to the United States.

<sup>3</sup> See Cherry and Wildman, *op. cit.*, p. 609.

<sup>4</sup> *Ibid.*

3. An important insight of this research is that different sets of institutional endowments and policy arrangements may meet these requirements. Thus, there is no preferred setting that yields superior outcomes. If anything, systems that limit legislative and executive discretion and have a strong judiciary that supervises administrative discretion seem to fare better overall. As long as these basic conditions are met, it matters less which specific rules and regulations are in place: typically, there is no single set of regulations that is superior under all conditions. Rather, regulatory incentives interact with each other and with other features of the institutional endowment of a nation in multifaceted ways. As a result, other things equal, different sets of rules and regulations can result in excellent performance and the range of efficient choices is broader than commonly perceived. Each country has an opportunity (and an obligation) to select the rules and regulations that are most appropriate given its unique conditions and values.
4. Third, for these reasons the selection of the relevant peer countries is not obvious. Depending on the selection of “peer” nations, one may come up with very different findings and conclusions. For example, if South Korea, the global leader in mobile Internet and broadband adoption were to be considered, rather than an environment of “least intrusive” and “ex post” regulation, one would find a set of regulatory rules that support market forces and enhance their effectiveness combined with stewardship by the public sector to promote advanced information infrastructure. This approach is based on the understanding that there is no such thing as an “unregulated market”; any market is embedded in rules and how these are structured will make a difference for its overall dynamics and efficiency. For example, in Korea rules that govern access to network facilities in office buildings have contributed to intensified competition between suppliers to a building (the network facilities in a building are owned by the proprietor). Office buildings are issued “cyber certificates” identifying the bandwidth available to occupants. Moreover, the Korean government has adopted programs to complement the role of the private sector, ranging from education initiatives to direct investment in backbone infrastructures.<sup>5</sup> Likewise, France has adopted a policy model with relatively strong government guidance and, overall, has had great success.
5. Fourth, there is a danger that a limited set of facts is considered without regard to the broader context. For example, a comparative assessment of the regulation of retail services of incumbent telecommunication service providers is not complete without an understanding of the overall market situation, including potential substitutes and complements for the regulated service. Or, to give another example, an assessment of regulation is incomplete without an understanding of the role and effectiveness of antitrust enforcement.

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<sup>5</sup> See, for example, C. Lee and S. M. Chan-Olmsted, “Competitive Advantage of Broadband Internet: A Comparative Study between South Korea and the United States,” *Telecommunications Policy*, 2004, 28, pp. 649-677; R. Frieden, “Lessons from Broadband Development in Canada, Japan, Korea, and the United States,” *Telecommunications Policy*, 2005, 29, pp. 595-613; J. An, “E-Korean DSL Policy: Implications for the United States,” *The John Marshall Journal of Computer and Information Law*, 2002, 20, pp. 417-444.

6. With these caveats, learning from the approaches of other industrialized countries is a useful exercise. However, it is important to capture the full complexity and richness of the situation. To a certain degree is lost in the necessarily compact summary representations submitted by Bell Canada.<sup>6</sup> It is furthermore important to choose a classification scheme that reflects national approaches appropriately. Thus, to produce such a more accurate and comprehensive record, the following information is provided in addition to the material filed by Bell Canada.
7. Table 1 summarizes important structural and performance characteristics of the telecommunications industry. To increase compatibility, an effort was made to use the same data source wherever possible. Furthermore, an effort was made to collect the most recent data from reliable sources. Where a ranking is meaningful, the entries are color coded for easy identification of the three top-performing nations (green=rank 1; yellow=rank 2; grey=rank 3). Overall, based on the selected performance indicators, Sweden's telecommunications sector outperforms that of the other nations included in the table. However, Canada is second and outperforms the other five nations in the comparison. Canada leads the other nations in broadband penetration.
8. The only exception to this excellent performance is mobile service penetration. One possible explanation is the existence of a very efficient wireline voice service, which may have delayed the diffusion of mobile service. This is a phenomenon also known from other countries (e.g., the U.S.) and technologies (e.g., videotext in the 1980s, broadband). Another factor are probably the unique Canadian geographic and topographic conditions. With the exception of mobile service penetration, Canada also outperforms the OECD average. Given the relative performance of Canada, it is not a priori evident why Canada should imitate the regulatory approach of these other nations. The only exception is Sweden. However, Sweden could boast the world's most efficient telecommunication system through most of the twentieth century, that is, even prior to the present wave of liberalization. (Much of this success story was driven by the then fully state-owned company Televerket, after several reorganizations now operating as TeliaSonera, and enlightened public policy.)
9. Data on market shares in local services are not available from reliable sources for all the countries in the comparison. From the limited data it is evident that with few exceptions the share of the incumbent local service providers in access lines remains high. With 95.5%, Canada is between nations such as the U.K., where competitors now own and operate nearly 17% of the lines and countries like Sweden and Germany, where the former incumbent continues to operate almost all local lines. Despite the high share of the incumbent at the access level, the shares of the incumbents in local revenues are much

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<sup>6</sup> See P. Waters, R. Pascoe, M. Wijewardena, *Global Trends in Regulation of Retail Telecommunications Services Provided by Incumbent Local Exchange Carriers*, Appendix D-7 of Bell Canada's submission to the Telecommunications Policy Review Panel, August 15, 2005.

lower outside of Canada.<sup>7</sup> In 2003, they ranged from 66.7% in the United Kingdom to 90% in Germany.<sup>8</sup>

10. This may, in part, be explained by the different wholesale policies in these nations as well as policies to increase the contestability of local markets. Table 2 illustrates that, with the exception of New Zealand, the nations in our comparison all have more stringent unbundling policies in place. Most of them have adopted measures to mandate line sharing, which facilitates market entry in the broadband markets and probably has positive indirect consequences for applications and services residing on broadband connections, such as VoIP. Three countries (Netherlands, New Zealand, and Sweden) have adopted mandatory bitstream access (essentially a wholesale broadband platform) and a regulatory proceeding to introduce bitstream access is pending in Germany. Line sharing and bitstream access have turned out to be strong factors in the growth of the IP networking and services industry in Europe. Measures to increase the contestability of telecommunications markets include number portability for fixed and mobile services and call-by-call carrier selection. For example, Germany has introduced call-by-call carrier selection for local services, allowing new entrants to put strong pressure on the incumbent (experts familiar with the German market suggest that the revenue market share of Deutsche Telekom in the call-by-call market is only 66%).
11. A few other features of the regulatory systems of other nations need to be emphasized. Outside of North America, regulation is more integrated with antitrust principles. Ex ante regulation is often contingent on an explicit analysis of market power. In contrast, the U.S. and Canadian legal frameworks are only indirectly related to the status of competition. However, it is important to recognize that regulatory agencies do not act as competition authorities. Most importantly, their test is a forward-looking assessment of markets and not, as most antitrust action, triggered by a past abuse. Moreover, the test applied by regulatory agencies is in most cases more broad-based, and not just focused on whether or not competition is workable. This is a logical consequence of the fact that regulation also deals with other forms of market failure, for example, the prevalence of public goods, of externalities, and possibly merit good issues. For this reason, in most countries the competitive assessment is done by the regulatory agency and not the competition authority.
12. At least in the European Union, any service provider — whether it is the former monopoly voice operator, cable service providers, or wireless service providers — are subject to competition review. Significant market power may be held by individual suppliers (“single dominance”) or by several suppliers jointly (“joint dominance”). The range of instruments in the toolkit of regulatory agencies (outlined in relevant European directives and national implementation laws) is fairly broad. This is particularly visible in the wholesale markets. Whereas it is correct that there is a gradual shift away from ex ante retail price approval to wholesale price regulation, the range of instruments used is much broader than current wholesale regulatory obligations in Canada. For example, many countries, including the

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<sup>7</sup> The recent introduction of call-by-call carrier selection in Germany, also for local calls, has further reduced the market share of the incumbent Deutsche Telekom.

<sup>8</sup> No separate data for local market shares in Sweden are available. The national revenue share of the incumbent in local and long distance markets is 56%.

performance-leader Sweden, have adopted or are considering adopting, line sharing and bitstream access obligations.

13. Furthermore, many misunderstandings are related to the meaning of “ex ante” and “ex post” regulation. Most forms of regulation have ex ante *and* ex post components. Price cap regulation, if implemented flexibly, will typically establish the parameters of the plan as well as the methods used to ensure compliance ex ante. Basic design principles of price cap regulation require that within these parameters service providers are flexible to adjust their pricing and possibly service quality. Compliance is then monitored ex post. Thus, while the monitoring of compliance is an ex post form of regulation, it is typically integrated with ex ante forms of regulation. This not only applies to the initial specification of the price cap but also its recalibration after a certain period, which is an ex ante form of regulation affecting future periods. Likewise, if regulated firms have permission to modify their prices within certain parameters, these parameters are established ex ante but compliance is typically monitored ex post.
14. This is, for example, clearly expressed in the statement by the new integrated German regulatory agency, BNA (“Bundesnetzagentur” or Federal Network Agency), responsible for telecommunications and energy:

“Even after the liberalization of the telecommunications market, the former monopolist, Deutsche Telekom AG, will command a dominant market position. Therefore, it is the central task of regulation to control the market power of the dominant supplier and establish an even playing field for the new competitors. *The principal regulatory approach of the federal government thus goes beyond a mere “ex post” review of abuses.* The tasks associated with regulation demand such a high degree of specialization that they cannot be solved by means of general competition law. Therefore, sector-specific regulation will at least be necessary until functioning competition is established in the telecommunications market.” (Source: BNA website, <http://bundesnetzagentur.de>, own translation, emphasis added).
15. The important question is therefore not whether ex ante regulation should be replaced by ex post regulation but which *mix* of ex ante and ex post measures is the most appropriate to address the problems at stake.

Table 1: Basic comparative data

	Country /region							
	Canada	Australia	Germany	Nether-lands	New Zealand	Sweden	United Kingdom	OECD
Fixed access lines per 100 <sup>i</sup>	66.4	61.3	65.7	62.2	44.5	71.9	58.3	52.0
Mobile phones per 100 <sup>ii</sup>	41.8	71.7	78.5	80.7	73.3	98.2	89.2	64.2
Broadband access channels per 100 <sup>iii</sup>	14.1	3.5	5.6	11.8	2.6	10.7	5.4	7.2
Price of fixed voice service (US\$ PPP) <sup>iv</sup>	376.73	547.96	392.68	394.37	494.75	297.46	330.81	450.29
Price of mobile voice service (US\$ PPP)								
Low user <sup>v</sup>	178.86	246.66	267.01	246.30	261.99	153.96	198.60	N/A
Medium user <sup>vi</sup>	418.60	596.20	634.32	493.67	893.67	403.15	583.76	N/A
High user <sup>vii</sup>	847.23	985.91	1159.45	801.03	1562.60	623.35	910.56	N/A
Share of incumbent in access lines <sup>viii</sup>	95.5 <sup>ix</sup>	89.0	98.9	97.0	96.3 <sup>x</sup>	99.9 <sup>x</sup>	83.1	N/A
Market share of the incumbents in local voice service	95.5 <sup>ix</sup>	N/A	90.0 <sup>xi</sup>	76.0 <sup>xi</sup>	N/A	56.0 <sup>xi, xii</sup>	66.7 <sup>xi</sup>	N/A
Telecommunication investment as percent of gross capital formation (2001-2003) <sup>xiii</sup>	2.93	2.96	1.52	2.26	2.86	3.11	4.53	2.90

Notes to table 1:

Color codes: xxx ... rank 1; xxx ... rank 2; xxx ... rank 3

- i Telecommunication channels per 100 inhabitants 2003. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 4.6.
- ii Cellular mobile subscribers per 100 inhabitants 2003. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 4.8.
- iii Broadband access channels per 100 inhabitants. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 5.6.
- iv Cost per year of a representative basket of voice services, including local, long distance, but excluding international and calls to mobile networks, in US\$ PPP including VAT, August 2004. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 6.5.
- v Cost per year of a representative low user in US\$ PPP including VAT, August 2004. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 6.11.
- vi Cost per year of a representative low user in US\$ PPP including VAT, August 2004. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 6.12.
- vii Cost per year of a representative low user in US\$ PPP including VAT, August 2004. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 6.13.
- viii Percentage of access lines owned by new entrants in 2003. Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 2.2, except where otherwise noted.
- ix Share in residential and business lines in 2003. Source: CRTC, *Report to the Governor in Council, Status of Competition in Canadian Telecommunications Markets*, November 2004.
- x Data for 2001.
- xi Share of incumbent service providers in local service revenues, December 2003. Source: Commission of the European Communities, *European Electronic Communications Regulation and Markets* (10<sup>th</sup> Report), Annex 3, SEC(2004)1535, Brussels, 2004, p. 21.
- xii No separate local data available; national market share.
- xiii Public telecommunication investment as a percentage of gross fixed capital formation in 2003. Source: Source: OECD, *Communications Outlook 2005*, Paris, 2005, table 4.17.

Table 2: Retail level regulation

	Country						
	Canada	Australia	Germany	Netherlands	New Zealand	Sweden	United Kingdom
Is ex ante regulation based on prior competition assessment?	Only indirectly	Yes	Yes	Yes	Indirectly	Yes	Yes
Who conducts competition assessment?	CRTC (regulator)	ACCC (antitrust) ACMA (regulator)	BNA <sup>i</sup> (regulator)	OPTA <sup>i</sup> (regulator)	COMCOM (regulator)	PTS <sup>i</sup> (regulator)	OFCOM <sup>i</sup> (regulator)
Are local retail prices regulated?	Yes	Yes	Yes	Yes	Yes	No	Yes
Ex ante regulation	Prices and service conditions	Price cap parameters	Price cap parameters	Price cap parameters	Limited price cap	No	Price cap parameters
Ex post regulation	No	Compliance with cap	Compliance with cap	Compliance with cap	Compliance with cap	No	
Local loop unbundling							
ULL	Yes	Yes	Yes	Yes	No	Yes	Yes
Line sharing	No	Yes	Yes	Yes	No	Yes	Yes
Bitstream access	No	No	Pending	Yes	Yes	Yes	No
Measures to increase contestability							
Local number portability	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mobile number portability	No	Yes	Yes	Yes	No	Yes	Yes

Call-by-call carrier selection	No	No	Yes	No	No	Yes	No
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Notes to table 2:

- i In the new EU framework, significant market power is assessed in a process involving the European Commission and national regulatory agencies (NRAs). Once markets are delineated, significant market power (SMP) is typically assessed by NRAs, with veto power by the European Commission.