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# **PERMISSIONLESS INNOVATION**

## **FOR AN END TO THE PRESUMPTION OF REGULATION IN TELECOMMUNICATIONS**

By Gaël Campan, with the collaboration of Daniel Dufort



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# **Permissionless Innovation**

## **For an End to the Presumption of Regulation in Telecommunications**

Montreal Economic Institute

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October 2019



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## HIGHLIGHTS

Innovation delivers widespread benefits throughout society. While this disrupts markets and topples established models, the socially efficient rule is clear: Innovation should be permitted by default. Regulations, if not well designed and narrowly tailored, tend to impede innovation. The telecommunications industry in Canada is subject to regulations above and beyond the general competition regime. This Research Paper invites the CRTC to proactively rescind the telecom exception and thereby reintegrate the sector under the general competition regime.

### Chapter 1 – Innovation, Growth, and Regulation

- The main source of growth in an economy is figuring out new approaches for being more productive with the same resources: in a word, innovation.
- By making it more expensive to run a business, or invest in a new technology, regulation delays projects, or diminishes the chances that projects will be undertaken.
- When it opened up the local telephone market in 1997, the CRTC imposed “mandatory wholesale access” on the former telephone monopolies, a policy used around the world to ease the transition from a monopolistic environment to a competitive one.
- Policies subsequently used to introduce additional, artificial competition in new services like high-speed internet have not benefited Canadian consumers in a sustainable way, instead sheltering competitors from market forces.
- In the wireless sector, measures to introduce artificial competition in recent years, such as spectrum set-asides or caps, as well as mandatory roaming and tower sharing rules, have also undermined efficient competition.
- There was a clear recommendation from the *Telecommunications Act* as early as 1993 to forbear from regulating as long as the industry keeps progressing toward long-term public policy goals.
- The emergence of cable operators as serious contenders in the provision of telecommunications services accomplished in a few years what regulation had been unable to do: bring about dynamic, facilities-based competition.
- The CRTC’s recent decision to further reduce the wholesale rate large internet providers can charge their smaller competitors, which those large providers have appealed, would further reduce their incentives to invest.

### Chapter 2 – Regulation by Default: A Misconstrued Approach to Markets and Competition

- Consumers commonly substitute across markets, as when cellular phones—originally considered separate and distinct—came to offer a compelling alternative to fixed line telephone monopolies, eliminating the market power of legacy network providers.
- Even if infrastructure-based markets could not sustain too many suppliers, it would not justify a technocratic body picking market winners instead of letting firms compete, with no legal barriers to entry, and trusting consumers to decide which ones deserve their business.
- When mobile operators compete for the bottom of the pyramid in emerging markets, their competitors are not only the other mobile operators, but also the providers of other goods that compete for the same disposable income.
- Customers of fixed line providers in an industrialized country aren’t captive at all, since alternative services (such as satellite, mobile, and cable operators) are already available and improving fast, but also because of the emergence of “third places” such as coffee shops offering good Wi-Fi speed.
- A good illustration of how indomitable customers can be is the saga of the Blackberry, produced by Research in Motion (RIM), whose market valuation reached US\$42 billion in 2007, but which lost 75% of its stock value within the following five years.
- The number of mobile and fixed operators has not changed much over the past few years, but the number of their suppliers has decreased drastically, with a few equipment manufacturers becoming giant players, and their bargaining power increasing significantly.
- Equipment manufacturers, terminal manufacturers, internet service providers (whether wireless, wireline,

or cable companies) and content providers all belong to the same ecosystem, and must adapt their strategies to each other's progress, always driven by what the general public is willing to pay for.

### **Chapter 3 – Reintegration of the Telecommunications Industry under the General Competition Regime**

- Rescinding the specific regulation of the telecommunications industry will create immediate economic value, as some financial and human resources currently devoted to compliance matters will be freed up and made available for productive use.
- As mandatory sharing policy is rolled back, incumbent wireline and cable operators, who were reluctant to make further investments that would have also benefited their competitors, will be encouraged to put more money to work.
- Commercial offers which were banned by the regulator even after having already found their customers, such as the zero-rating practices banned by the CRTC in 2017, will likely be reinstated if possible.
- One interesting scenario would be for facilities-based operators to finally manage to extract money from the OTT (Over-the-Top) firms which benefit greatly from their infrastructure without having to pay for it.
- As the share of online spending made by Canadians with their smartphones keeps growing, the stakes for online retail platforms to ensure access quality and reliability are getting higher.
- It is easier for most people to comprehend the expected results of a regulation than to imagine the future benefits derived from the freedom to innovate, for the very reason that these benefits don't exist yet and still need to be invented, which gives us a cognitive bias in favour of regulation.
- As both theoretical arguments and public policy experiments show, the CRTC must rescind its special regulatory policies and let the sector fall under the general competition regime in order to enjoy the proceeds of unhampered competition.



## INTRODUCTION

“*Primum non nocere (First do no harm).*  
– Auguste François Chomel”

Experiments creating new technologies, services, and businesses are producing stunning advances in the modern economy. They constitute a discovery process delivering widespread benefits throughout society, while disrupting markets and toppling established models. This inevitably sparks controversy. But the socially efficient rule is clear: Economic innovation should be permitted by default.

This notion of “permissionless innovation” puts the onus on the would-be regulator: “Unless a compelling case can be made that a new invention or business model will bring serious harm to individuals, innovation should be allowed to continue unabated and problems, if they develop at all, can be addressed later.”<sup>1</sup>

Regulations, if not well designed and narrowly tailored, tend to impede innovation. In fact, it is often the very purpose of regulation to render market access more difficult. Reducing both the scope within which initiative can take place and the number of firms authorized and able to compete necessarily limits the possibilities and the incentives to innovate. This in itself can (and will) discourage entrepreneurs from investing in the risky market experiments that lead to discovery and progress.

The telecommunications industry in Canada is an example of a sector of the economy that is subject to regulations above and beyond the general competition regime. The Canadian Radio-television and Telecommunications Commission (CRTC) is currently struggling to complete its migration from a “presumption of regulation” to a “presumption of competition.” The former typically uses expedients to encourage a certain pattern of market conditions and behaviours, whereas the latter relies on spontaneous dynamic forces to generate benefits for the general public.

Existing regulatory rules have been influenced by the view that infrastructure businesses—because of their

size, economic importance, and cost structure—are *de facto* natural monopolies which ought to be heavily regulated. However, as seen in myriad fields, competitive entry has often challenged or destroyed monopolistic arrangements. This compulsion to regulate first has moreover sometimes ended up wasting vast resources and hindered economic growth.

Regulators can improve the situation by updating their view of the market and their unduly low expectations for rivalry—whereby operators are from the outset suspected of abuse and customers are deemed to be powerless—and by embracing a more receptive approach to market dynamics.

**It is the presumption of competition—and an underlying freedom to innovate without asking for permission—that should be the guiding principle of the regulator.**

Indeed, once markets are understood as an organic system centred on consumers and their ever-evolving needs—which entrepreneurs and capitalists incessantly seek to discover and serve, realizing profits for successful anticipation and adaptation—it becomes clear that competitive advantages are temporary, not permanent. In this context, regulatory actions are seen to involve fundamental trade-offs and risk gumming up the process by which the long-run dynamics of the market naturally work to counter fleeting positions of dominance.

It is the presumption of competition—and an underlying freedom to innovate without asking for permission—that should be the guiding principle of the regulator. Under such an entrepreneurial paradigm, the future of the industry is continually being rewritten, as technologies emerge, networks evolve, devices are invented, and software applications are created. The consumer experience is transformed in competing forays, as rival carriers

1. Adam D. Thierer, “Embracing a Culture of Permissionless Innovation,” Cato Online Forum, November 17, 2014.

attempt to earn the loyalty of customers by serving them better and at lower cost.

This Research Paper discusses the case for “permissionless innovation” and applies it to the Canadian telecommunications industry. It invites the CRTC to proactively rescind the telecom exception with regard to regulation and thereby reintegrate the sector under the general competition regime. Such a rollback would provide new incentives to innovate and unleash untapped creative potential for the benefit of the entire economy. Consumers should at last be empowered by a system in which the regulator stands back, intervening only upon a breach of the general competition regime.

# CHAPTER 1

## Innovation, Growth, and Regulation

### The Benefits of Innovation

The main source of growth in an economy is figuring out new approaches for being more productive with the same resources: in a word, innovation.

From the economic point of view, innovation is more than mere technical progress, though this is a substantial part of it. Innovation is the new tools that technical progress has made available, but also simple ingenuity in the organizing of business. This includes new ways of delivering goods, and new ways of organizing labour, but also adapting your procedures to newly available technologies.

New, innovative business models are created regularly. For instance, while it is true that new technology, namely the internet, has made available new and efficient collaborative tools, this is really more of a new way of doing business than pure technical progress.

Nobel laureate Robert Solow found that more than 85% of growth comes from increases in our productivity.<sup>2</sup> Moreover, this portion of growth seems relatively stable over time. Though figures vary from study to study, depending on the methodology and the hypotheses used, all confirm unambiguously that innovation is a very important source of growth.<sup>3</sup> This body of research also indicates that innovation in capital goods (that is, productivity enhancing factors) is tied to wage increases.<sup>4</sup>

Economic growth without innovation, according to Solow, would only come from population growth. No additional amount of investment would thus make a difference to per capita income. Our standards of living would thus essentially be stagnant, and, in such a world, we would not be better off than our grandparents, and

our grand-children could not aspire to become more affluent than us.

Fortunately, we do live in a world with innovation and technological progress, a world where we regularly come up with new ways of doing more with the same amounts of the resources at our disposal. The progress, charted over time, is impressive: Whereas it took the average worker in the mid-1980s almost 50 hours of labour to buy a 20-inch colour television, it now takes less than nine.<sup>5</sup> Yet this 5-to-1 improvement far underrepresents the magnitude of the gains: Flat-screen panel displays today have displaced “televisions,” yielding dramatically higher HD resolution, brilliant colour, and vastly more functionality—video content comes not from a handful of broadcasters but from hundreds of cable TV programming networks and literally thousands of internet channels. The 1985 TV set is now in the dustbin of history, made obsolete by the evolution of markets.

**Fortunately, we live in a world where we regularly come up with new ways of doing more with the same amounts of the resources at our disposal.**

In economic innovation, the entrepreneur is centre stage. Entrepreneurs seek to anticipate consumer demands by creating newly efficient ways to satisfy human needs. Where these advances can improve social coordination, generating higher benefits than the costs they incur, they represent potential profit opportunities. To verify the theory, though, risky investments are then required. When such experiments succeed, net benefits are created, and entrepreneurs gain—as do consumers, technology markets, and complementary suppliers.

However, in order for entrepreneurs to be able to meet consumer needs, and bring about innovation, public policy must allow this process to operate as freely as possible.

### The Ills of Regulation

Entrepreneurship can be thought of as a kind of arbitrage. Existing products (or services) are bought and sold, generating gains from trade. But perhaps there

2. Robert M. Solow, “Technical Change and the Aggregate Production Function,” *The Review of Economics and Statistics*, Vol. 39, No. 3, 1957, pp. 312-320; The Royal Swedish Academy of Science, “The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1987,” Press release, October 21, 1987.

3. Michael J. Boskin and Lawrence J. Lau, “Generalized Solow-Neutral Technical Progress and Postwar Economic Growth,” NBER Working Paper No. 8023, December 2000; Yasmina Reem Limam and Stephen M. Miller, *Explaining Economic Growth: Factor Accumulation, Total Factor Productivity Growth, and Productivity Efficiency Improvement*, University of Connecticut, Working Paper 2004-20, March 2004.

4. Susanto Basu and John G. Fernald, “What Do We Know (and Not Know) About Potential Output?” *Federal Reserve Bank of St. Louis Review*, Vol. 91, No. 4, July/August 2009, pp. 187-213.

5. David Descôteaux, “Christmas Costs Less Than It Used To,” MEI, Viewpoint, December 21, 2018.

exists a better way to satisfy the ends sought by buyers? The vision of the entrepreneur is to see the subtle counterfactual—what could emerge, making users and producers better off—and the realistic pathway to achieve that disruption of existing patterns. The arbitrage comes in when resources are deployed in more valued uses, allowing investors to “buy low, sell high.”

If regulation makes entrepreneurs’ projects more costly, profits will be slimmer. By making it more expensive to run a business, or invest in a new technology, regulation delays projects, or diminishes the chances that projects will be undertaken. Regulations that impose additional barriers to entry make innovation less profitable, and therefore less likely. There are other costs associated with regulation, of course, including the burdens incurred to make businesses compliant with regulation.<sup>6</sup>

Take telecommunications services in Canada. Historically, these services were provided by several telephone companies, each of which held a monopoly over its respective regional market. These companies were regulated as public utilities.<sup>7</sup>

When it allowed competition in the local telephone market in 1997, the Canadian Radio-television and Telecommunications Commission (CRTC) imposed on the former telephone monopolies the obligation to share parts of their networks with emerging competitors at low, regulated rates. Such a policy, known as “mandatory wholesale access,” has been used in many jurisdictions around the world as a strategy to ease the transition from a monopolistic environment to a competitive one.

Mandatory network sharing rules are ostensibly designed to help new carriers competing with an established incumbent overcome various roadblocks. In particular, certain elements of telecommunications networks are relatively expensive to build; where newcomers are given access to such facilities, owned by the existing provider, they may be able to engage in retail competition. Eventually, they might bootstrap up, building out their own independent networks, and competing in earnest with the erstwhile monopolist. In theory, this leads to lower retail prices and increased product differentiation between competitors, and to more rapid innovation and increased investment in facilities-based

competition (a market structure where entrants compete by building their own infrastructure).

Although initially adopted to stimulate competition in wireline telephony, mandatory wholesale access policies were subsequently used to enhance competition in new services like high-speed internet when new technologies replaced dial-up services in the late 1990s. In order to facilitate market access for emerging competitors offering such broadband services, the CRTC has mandated that incumbent telephone providers and cable companies must share their broadband networks with competitors at regulated rates and speeds.

However, these attempts to introduce additional, artificial competition in the wireline and broadband sectors have not benefited Canadian consumers in a sustainable way. Indeed, such measures sheltered some competitors from market forces, undermining the competitive process.

**In order for entrepreneurs to be able to meet consumer needs, and bring about innovation, public policy must allow this process to operate as freely as possible.**

In the wireless sector, measures to introduce artificial competition in recent years encouraged the emergence of several small, inefficient players unable to compete. These ended up merging with bigger players. Canada does now have four solidly established wireless players in each region of the country, which some argue is a vindication of the federal government’s interventionist policies. But insofar as this constitutes a victory, it has come at a high cost. The government’s exclusionary auction rules, such as spectrum set-asides or caps, as well as mandatory roaming and tower sharing rules, have undermined efficient competition and hindered investment in the state-of-the-art wireless networks and services that consumers want.<sup>8</sup>

More generally, the implementation of mandatory wholesale access policies has not led to additional facilities-based competition in Canada. Resellers, who

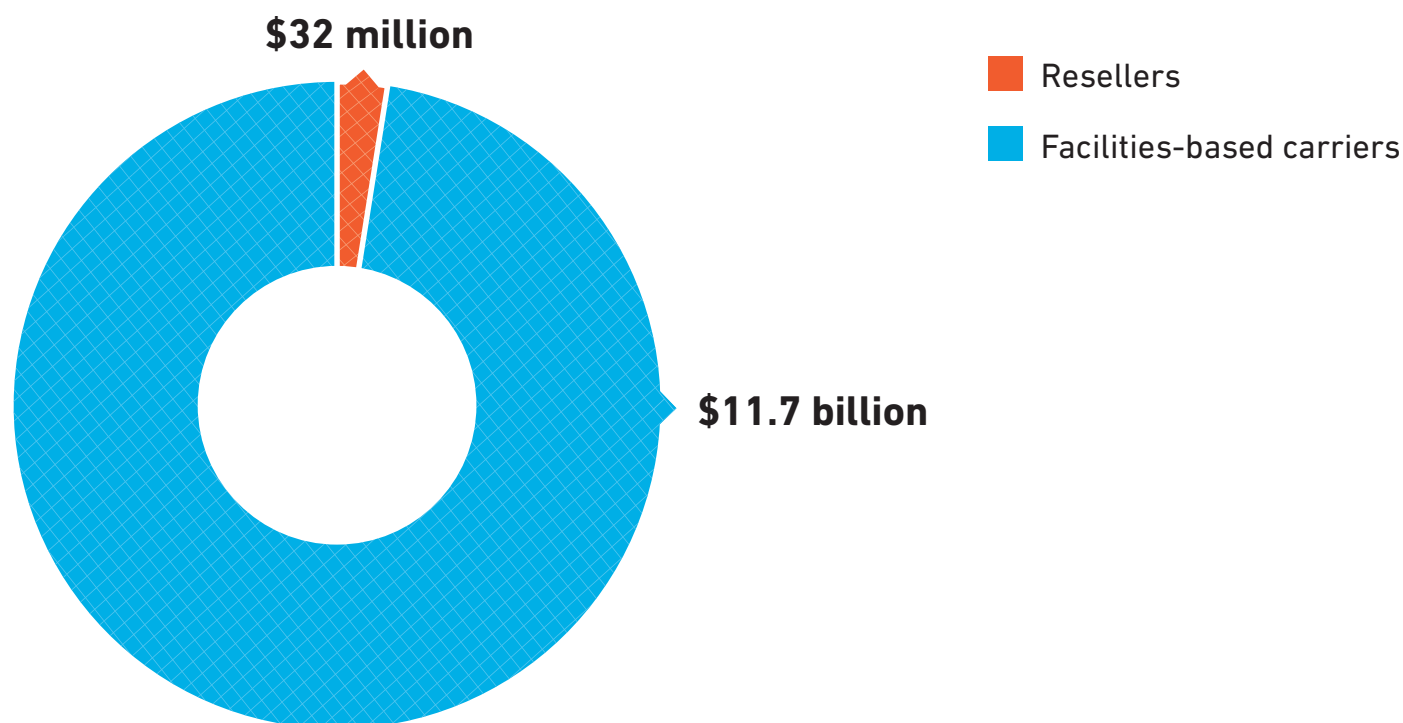
6. Mathieu Bédard and Kevin Falcon, “How to Successfully Reduce the Regulatory Burden,” Economic Note, MEI, February 6, 2019.

7. This and the following paragraphs are largely drawn from Martin Masse and Paul Beaudry, *The State of Competition in Canada’s Telecommunications Industry – 2014*, Research Paper, MEI, May 6, 2014.

8. The spectrum set-aside in the 2008 AWS auction in particular led to the emergence of WIND, Mobilicity, and Public Mobile, and to regional players acquiring subsidized spectrum licenses in their home markets (Videotron in Quebec, Eastlink in Atlantic Canada, and Shaw in Western Canada). These large regional players did not need a subsidy to enter the wireless market, as they already offered cable, internet, and wireline services, and had an incentive to bundle wireless services with these legacy offerings. The new entrants, for their part, did not have a strong business case, and were ultimately acquired by bigger players. See Martin Masse and Paul Beaudry, *The State of Competition in Canada’s Telecommunication Industry – 2016*, Research Paper, MEI, May 5, 2016, pp. 21–26.

Figure 1-1

### Telecommunications investments made in plant and equipment, annual average, 2012-2016



**Source:** CRTC, *Communications Monitoring Report 2017*, November 2017, Table 5.0.5: Telecommunications investments made in plant and equipment, by type of provider of telecommunications service, p. 219.

rely extensively on mandated network access at artificially low rates, have not built significant infrastructure. According to CRTC reports, between 2012 and 2016, facilities-based carriers made on average \$11.7 billion worth of infrastructure investments a year, whereas resellers only accounted for \$32 million (see Figure 1-1).<sup>9</sup>

Indeed, interventionist policies aimed at helping smaller players gain market share can have harmful effects on innovation and weaken incentives to invest in and deploy new infrastructure. Considering the massive costs involved in deploying next-generation networks, it is inevitable that telcos and cable companies—not smaller players and resellers—will bear the brunt of the cost of developing these networks, and mandatory wholesale undermines the massive amount of capital needed for these projects.

**Attempts to introduce additional, artificial competition in the wireline and broadband sectors have sheltered some competitors from market forces, undermining the competitive process.**

### From Presumption of Regulation to Presumption of Competition

The presumption of regulation is the offspring of a doctrine according to which, for a certain category of goods and services (such as utilities), the market left to its own devices will not be able, in good time, to provide the right quality and quantity of service to the community.<sup>10</sup>

9. CRTC, *Communications Monitoring Report 2017*, November 2017, Table 5.0.5: Telecommunications investments made in plant and equipment, by type of provider of telecommunications service, p. 219.

10. Furthermore, in the context of antitrust laws, there is a moral bias against firms in general, which are presumed guilty of abusing their (supposedly advantageous) market positions whenever given the opportunity.

The regulator is thus justified in filling the void by initiating the process of industry creation—through the granting of licenses to operators, for example—and by ensuring that the producers' every initiative is in the best interests of the general public.

This presumption of market failure can become a self-fulfilling prophecy of sorts because when the regulator pre-empts the control of telecommunications service production, then other potential market participants can be kept at bay, prevented from entering the market and competing. Similarly, customers are deprived of certain options, as the choice they are presented with is artificially limited, and consequently, they can't play their role of spurring competition as well as they otherwise would.

**The government's exclusionary auction rules, such as spectrum set-asides or caps, as well as mandatory roaming and tower sharing rules, have undermined efficient competition.**

In contrast, the presumption of competition takes a somewhat more circumspect view of the market and of the potential results of competition. Indeed, with this approach, there is no pretense of knowing in advance what the industry could or should be like, and which firms should be leading it.

Instead, the idea is simply to let different players enter the market and compete fiercely for customers' hearts and minds. In this context, the main focus of the government is the enforcement of commercial and civil law, such as preventing fraud, theft, and potential breaches of contract. In case of conflict between operators, or between operators and customers, the burden of proof rests upon the accuser and not upon the alleged culprit. In particular, under this alternative doctrine, it is not assumed *ex ante* that a market player enjoys an unfair "dominant" position simply because of its success; it needs to be proven that this position was acquired or is being maintained unfairly by demonstrating that this firm was or is indeed shielded from competition, or that it was or is benefitting from some discriminatory legal advantage.

Fifty years ago, just a year after the CRTC was established by the *Broadcasting Act*,<sup>11</sup> central planning was still considered a reasonable alternative to the free mar-

ket. With time and many painful experiences, most regulatory authorities around the world learned to step back or to step aside in order to accommodate market forces, allowing enough space and time for fruitful competition to take place. This transition was largely a rather reluctant conversion from a presumption of regulation to a presumption of competition.

Such a transformational journey from a "command and control" mindset to a "stand back and watch" mindset is a rocky road littered with obstacles that need to be overcome. Regulatory authorities can rise to the occasion by moving progressively through four successive stages: 1) control, 2) monitor, 3) forbear, and 4) respond. These form a standard evolution pattern, where the first and second stages reflect the main focus of the presumption of regulation, while the third and fourth stages reflect the transition to the presumption of competition. As they advance through each stage, the regulatory grip gets lighter; the interventions are less proactive and more reactive, less intrusive and more inconspicuous. At the last stage, regulators intervene only when solicited to do so, and only in case of a serious problem—a real, unambiguously proven problem, preferably exposed and debated in an open forum.

The CRTC now seems to be struggling to get through the 3<sup>rd</sup> stage and leave heavy-handed oversight behind, despite the many factors converging to "push and pull" the agency in the right direction.

From the push side, there was a clear recommendation from the *Telecommunications Act* as early as 1993 to forbear from regulating as long as the industry keeps progressing toward long-term public policy goals.<sup>12</sup> Then came a 2006 Policy Direction asking the CRTC to rely on market forces as much as possible,<sup>13</sup> which built on the Telecommunications Policy Review Panel's final report earlier that year. This report stated that "the Canadian telecommunications industry has evolved to the point where market forces can largely be relied on to achieve economic and social benefits for Canadians, and where detailed, prescriptive regulation is no longer needed in many areas."<sup>14</sup>

From the pull side, the emergence of cable operators as serious contenders in the provision of telecommunications services accomplished in a few years what regulation

11. CRTC, About us, The CRTC's origins, 2018.

12. Government of Canada, *Telecommunications Act*, S.C. 1993, c. 38, s. 34.

13. Government of Canada, *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, SOR 2006/355, s. 1.

14. Industry Canada, Telecommunications Policy Review Panel, *Final Report* 2006, March 2006, pp. 1-22.





had been unable to do: bring about dynamic, facilities-based competition.

Nevertheless, and oblivious of the signs, the CRTC has continued micromanaging the wireless sector and enforcing mandatory capacity sharing on both incumbent wireline operators and cable operators. So far, these provisions (among others) have prevented consumers from enjoying the best possible value for their money, and delayed investments in remote areas and in next generation technology.

Most recently, the CRTC decided to further reduce the wholesale rate large internet providers can charge their smaller competitors.<sup>15</sup> There is no reason to believe that this new legal hardship will affect operators differently this time, nor improve retail customers' experience in a significant way in the long term. Rather, this redistribution will further reduce larger operators' incentives to develop and compete with each other on value creation. Indeed, several of them said they would scale

**There was a clear recommendation from the *Telecommunications Act* as early as 1993 to forbear from regulating as long as the industry keeps progressing toward long-term public policy goals.**

back various investment plans as a result of the change. In September 2019, five companies obtained from the Federal Court of Appeal an order suspending this CRTC decision in order to have time to debate their motion for leave to appeal.<sup>16</sup>

In order to move forward in a less interventionist mode, the CRTC will first have to let go of several erroneous beliefs that have motivated its current overregulation of the telecommunications industry. The following chapter will address these beliefs about markets and competition.

15. Christine Dobby, "Shaw, Quebecor join backlash against new CRTC wholesale-rate policy," *The Globe and Mail*, August 21, 2019.

16. Agence QMI, "Les grands câblodistributeurs obtiennent une injonction contre le CRTC," *Le Journal de Montréal*, September 30, 2019.





## CHAPTER 2

### Regulation by Default: A Misconstrued Approach to Markets and Competition

#### Erroneous Beliefs behind the Infrastructure Exception

As far as economic theory is concerned, the arguments against regulation described above are not new, and they are repeated regularly.<sup>17</sup> It might seem strange that government agencies persist in trying to control markets—and keep failing to achieve their objectives—as if wedded to the idea that “this time is different” or that the “general rule does not apply” to this set of circumstances. Infrastructure, in particular, is often a candidate for exceptional treatment.

Actually, the misguided policies of regulators rely on a few erroneous economic beliefs which need to be debunked. One of them is what some economics textbooks call the “atomicity” assumption of the market.<sup>18</sup> According to this view, the greater the number of small buyers and sellers the better, because all market players would then have the same bargaining power and would not be able to influence the terms of exchange to their exclusive advantage. Everybody would be what is called a “price taker.” Conversely, when there are only a few buyers or a few sellers, they are presumably capable of selling higher or buying cheaper than under the atomicity scenario. They would be “price makers,” holding significant market power.

There is a fundamental problem with imagining that price takers are competitive and price makers are not. Among other things, it begs questions of market definition, as in reality, consumers commonly substitute across markets. This was obvious, in fact, when cellular phones—originally considered separate and distinct—came to offer a compelling alternative to fixed line telephone monopolies, eliminating the market power of legacy network providers.

Even if I were the sole producer of watermelon in the world, for example, I would still have to compete with other fruit producers. Likewise, I might be the sole fruit producer in the world, but I would still have to compete

with other dessert producers. Or I might be the sole food producer in the world, but I would still have to compete with producers of clothes, cars, houses, and entertainment, among others.

In reality, what fosters the highest level of competition in any market is the absence of barriers to entry.<sup>19</sup> If I am indeed the sole watermelon producer in the world and there is no legal barrier to prevent a competitor from entering the market, it is simply because—for the time being (and this clause is important)—nobody believes they can make a better or a cheaper fruit than me for a worthwhile profit. Moreover, this state of affairs does not mean that my customers are in fact captive. If I decide to increase my price aggressively without a valid reason (like bad weather affecting the harvest), they will surely turn away from watermelon and substitute, say, mango. Incidentally, a side effect of this price increase would be to create more incentives for my latent competitors to come up with alternative watermelon options.

**Cellular phones—originally considered separate and distinct—came to offer a compelling alternative to fixed line telephone monopolies.**

This theoretical example demonstrates the danger in presuming abuse using a certain necessarily arbitrary market share threshold as a criterion for determining dominant market position.

Unfortunately, this point is not generally fully understood. In 1998, the U.S. government famously brought an antitrust case against Microsoft because customers could not uninstall the Internet Explorer browser.<sup>20</sup> This presumption of dominance, said to pre-empt competition in browserware, ignored the potential for other players to enter the market with competing products of their own, which became obvious as soon as Mozilla Firefox and then Google Chrome became available<sup>21</sup> (see Figure 2-1).

17. Recently by Tom Lehman, *6 Arguments Against Regulations*, May 2017.

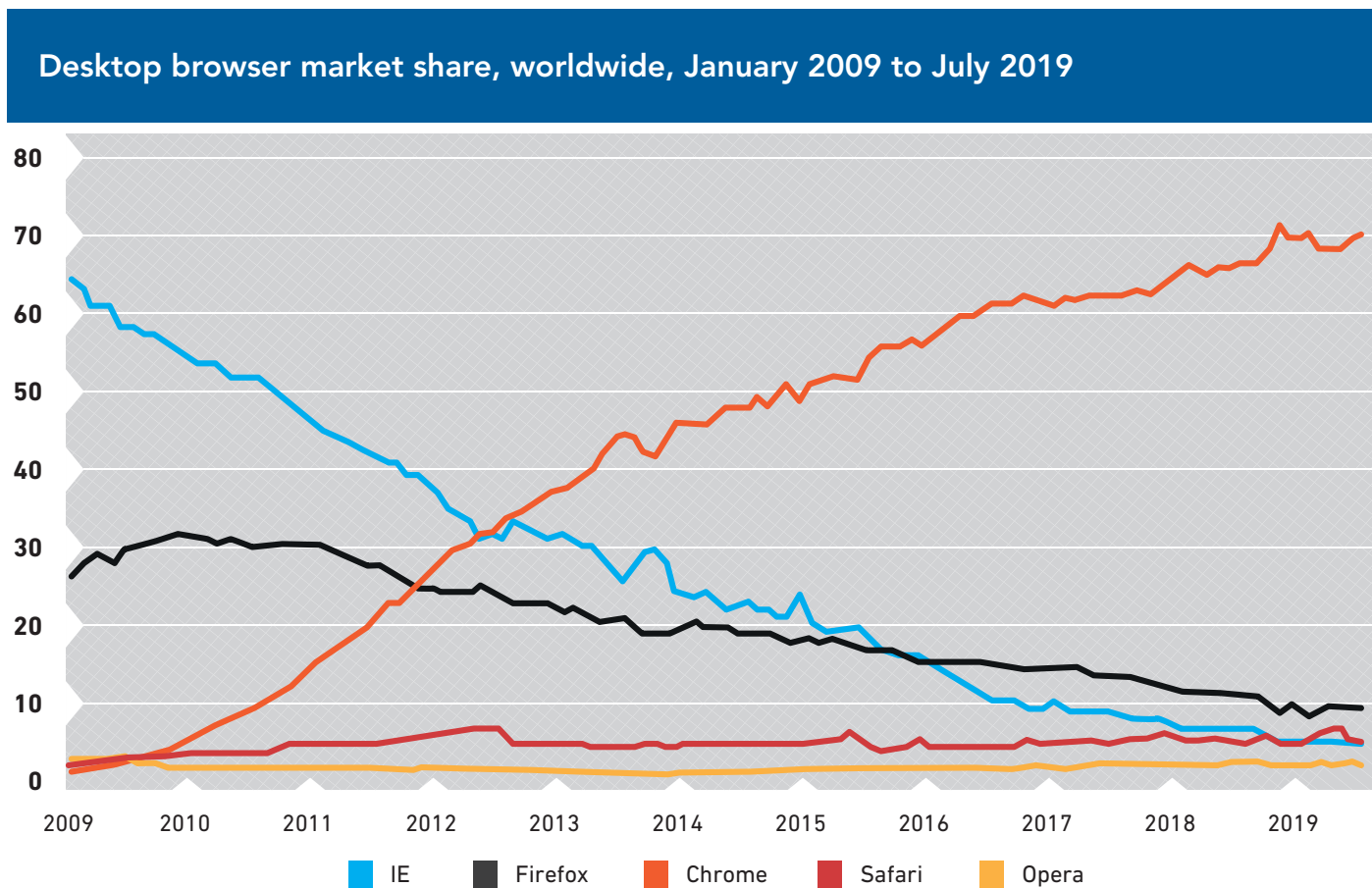
18. Daron Acemoglu, David Laibson, and John A. List, *Microéconomie*, ERPI, 2016, Chapters 6 and 7.

19. Vincent Geloso, “Consolidation in the Air Sector: Should We Be Worried?” Viewpoint, MEI, June 4, 2019.

20. The United States Department of Justice, Final Judgment, *U.S. v. Microsoft Corporation* [Browser and Middleware], November 12, 2002.

21. Importantly, there were no barriers to entry, and so Mozilla was able to release Firefox 1.0 in November 2004, after years of hard work, setting itself apart from Explorer by offering pop-up blocking, easier search, tabbed browsing, and add-ons. See Sebastian Anthony, “The history of Mozilla and Firefox,” *ExtremeTech*, July 18, 2011.

Figure 2-1



Source: Global Stats, Statcounter, Desktop Browser Market Share Worldwide.

More recently, the European Commission has fined Google several billion dollars.<sup>22</sup> Without going into the details of the indictment, suffice it to say that Google developed an operating system (Android OS) which is available free of charge to terminal manufacturers (HTC, LG, Samsung, Oppo, Huawei, and so on) willing and able to compete with the mighty Apple Inc. Yet however (presumably) unpleasant or restrictive the conditions imposed by Google on the manufacturers who voluntarily use its OS may be, nobody is prevented from coming up with a better OS, or indeed from taking over both the OS and the mobile application distribution business. And some firms will, inevitably. In the meantime, punishing the current market leaders for their success is preposterous, and undermines future investments.

Besides a flawed approach to competition, another erroneous belief motivating regulator intervention is see-

**The emergence of “third places” such as coffee shops offering good Wi-Fi speed and enough power outlets is a good example of how consumers can avoid changes they don’t like (such as expensive office and residential internet services).**

ing infrastructure activities as a unique market situation, sometimes misleadingly called a “natural monopoly.” At first glance, the rationale behind this appears reasonable enough: Since infrastructure facilities generally require large capital investments, they must enjoy a larger share of the market in order to become profitable and therefore viable. Consequently, infrastructure-based markets cannot sustain too many suppliers. But naturally, even if this were true, it would not justify a technocratic

22. Charles Riley and Ivana Kottasová, “Europe hits Google with a third, \$1.7 billion antitrust fine,” CNN Business, March 20, 2019.

body picking market winners itself. We could very well let firms compete, as long as there are no legal barriers to entry, and trust consumers to decide which ones deserve their business.

A case in point is Cambodia, which in 2009 had nine mobile operators with data capabilities, and many more ISPs. After a fierce competition which transformed the telecommunications landscape for the better, several companies merged. In 2018, the market still had officially six mobile players, seven landline providers, and 34 ISPs. Most importantly, the public enjoys excellent data services at very affordable prices by any international standard.<sup>23</sup>

The last motive usually invoked by regulators to rationalize their intervention is that infrastructures are “strategic” from the perspective of a country’s overall welfare. Many, if not all, other businesses depend on water and power supply, on road, railway, and airport infrastructures, on postal and telephone services, on the internet, and so on. Therefore, we cannot afford any of these services not being present in quality and quantity. Government should therefore, according to this line of argument, take it upon itself to ensure their existence and their management as public utilities.

This last statement, of course, is a *non sequitur*. To paraphrase Thomas Sowell’s aphorism about public health care, it is amazing that people who think we cannot afford to pay for telecommunications services now somehow think that these same telecommunications services will be more affordable with an extra layer of government bureaucracy to administer them<sup>24</sup> (see Box 2-1).

Unfortunately, these economic fallacies are usually enough to initially mislead regulators to the conclusion that the telecommunications industry requires regulation by default, despite the fact that—after close examination—none of them actually justifies intervention.

## Customers’ Evolving Preferences Determine Markets and Competition

The watermelon example above also highlights another issue with regard to this specific view on the market and competition, namely that it arbitrarily restricts the

definition of a market to a set of substitutable products from which consumers would supposedly have to choose. In reality, it is consumers themselves who decide which products and services are substitutable for them.

In terms of the telecommunications industry, when mobile operators compete for the bottom of the pyramid in emerging markets, their competitors are not only the other mobile operators, but also, for instance, the breweries and cigarette factories that compete for the same disposable income. In this respect, different industries can emulate each other in terms of customer service, as well as in terms of marketing and distribution strategy. As one example, when cigarette distributors in Africa started to sell cigarettes singly instead of by the pack, telecom operators came up with the idea of charging their customers per second instead of per minute, which was the previous industry norm.<sup>25</sup>

**Although RIM’s market valuation reached US\$42 billion in 2007, the company would lose 75% of its stock value within the following five years.**

If we extend this reasoning to the case of a fixed line provider in an industrialized country, it should now be clear that its customers aren’t captive at all, since alternative services (such as satellite, mobile, and cable operators) are already available and improving fast, but also because consumers can find ways to overcome the eventual hardship of price increases from any of them. The emergence of “third places”<sup>26</sup> such as coffee shops offering good Wi-Fi speed and enough power outlets for laptops and tablets is a good example of how consumers can avoid changes they don’t like (such as expensive office and residential internet services) by developing new behaviours.

In any case, companies that refuse or are unable to adapt to consumers’ fast-evolving behaviours usually do not last long, even after amassing significant financial rewards from past commercial successes. As a matter of fact, financial strength provides no immunity to protect

23. It is worth noting that the kingdom did not have a telecommunications regulatory agency—nor a telecom law for that matter—to organize the sector until 2016. Telecommunication Regulator of Cambodia, About Us, Background.

24. Thomas Sowell, *Ever Wonder Why? And Other Controversial Essays*, Hoover Institution Press, 2006: “It is amazing that people who think we can not afford to pay for doctors, hospitals, and medication somehow think that we can afford to pay for doctors, hospitals, medication and a government bureaucracy to administer universal health care.”

25. ATCA, The sale of single sticks of cigarettes in Africa; TIGO, “Chapitre III : présentation de l’entreprise TIGO,” p. 2; IDE-JETRO, Institute of developing economies, Data & Resources, AGE (African Growing Enterprises) File, Company, Vodacom DRC - AGE (African Growing Enterprises) File.

26. The third place refers to social surroundings distinct from the first place (home) and the second place (the workplace).

## The Affordability of Telecommunications Services in Canada

A widespread claim among the Canadian political class and among certain commentators is that the prices of cellphone and high-speed internet packages are very high in Canada. This allegation is often based on an annual study produced by Nordicity, which endeavours to compare the packages offered in Canada to those found in certain other countries. Yet this comparison must be put in context.

First of all, the quality of the telecommunications services available in Canada is among the highest in the world. For example, according to Ookla, the average download speed for mobile connections in Canada is 63.40 Mbps. This speed places Canada 6<sup>th</sup> in the world.<sup>1</sup>

Moreover, Canada is among the countries with the lowest population density. It is ranked 32<sup>nd</sup> among OECD countries in terms of the number of wireless connections per square kilometre.<sup>2</sup> Canadian companies also make substantial investments. Between 2010 and 2016, they invested on average \$78 per connection, which is nearly double the average of \$40 in Europe, but less than the average of \$97 in the United States.<sup>3</sup> Indeed, Canadian companies are ranked 3<sup>rd</sup> in the OECD in terms of investment as a percentage of their revenue.<sup>4</sup>

This information throws a different light on the prices of the packages offered in Canada. It shows that Canadians can count on top quality services, and that the investments per connection are far superior to those observed in countries with which we are regularly compared. In sum, political decision-makers would have an interest in establishing an investment-friendly climate, favouring the best quality-price ratio, rather than promoting the arbitrary reduction of package prices, which would lead to a reduction in the quality of services offered to consumers and slow down innovation in the sector.

### Notes

1. Ookla, Speedtest Global Index—September 2019, Mobile.
2. OECD, OECD Broadband Portal, Total fixed and wireless broadband subscriptions by country, June 2017; World Bank, Land area (sq. km), March 23, 2017; CRTC, Communications Monitoring Report 2016, October 2016, p. 280; Federal Communications Commission, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless*, Chart III.A.1: Estimated Wireless Coverage by Census Block Including Federal Land Form 477, September 23, 2016, p. 29; OzTowers, Mobile Bands (frequencies) By Provider, Information.
3. GSMA Intelligence, cited in Jeffrey A. Eisenach, *Expert Report on Behalf of TELUS Communications Company*, CRTC 2017-259, Report presented before the CRTC, September 8, 2017, p. 29.
4. OECD, *OECD Digital Economy Outlook 2017*, Table 3.11: Telecommunication investment as a percentage of telecommunications revenue, October 2017.

firms from competition once they find themselves overwhelmed by new consumer demands.

A good illustration of how indomitable customers can be is the saga of the Blackberry, produced by Research in Motion (RIM). Back in 2006, having a Blackberry terminal in your hand was the definitive symbol of your executive status. RIM had developed the best ever text-input method for a pocket device in a context in which email had become the dominant professional communication standard. Beyond companies' management and governments cherishing its excellent security and reliable email service, the Blackberry was also increasingly popular with younger generations, as larger touchscreen devices were not yet available. RIM could pride itself on having tens of millions of satisfied customers, and, as it was breaking through the billion-dollar sales mark, could not imagine that Apple would take over the market by storm with an expensive terminal designed primarily as a device for regular consumers.

Although RIM's market valuation reached US\$42 billion in 2007, the company would lose 75% of its stock value within the following five years, falling even below its asset value, a plunge that no goodwill, brand equity, or customer loyalty could slow down. Among the many errors of judgment displayed by RIM (but also Microsoft at the time) was the belief that consumers would not do without a keyboard.<sup>27</sup>

In retrospect, it is easy to see the complacency and conservatism in these reactions, but even Steve Jobs himself (not exactly a paragon of humility) could not anticipate just how successful his products would be. As a matter of fact, back in 2008, he underestimated the success of the App Store by a factor of one hundred!<sup>28</sup>

Consumers' changing preferences are indeed the powerful force that every market participant—whether leader or follower—must ultimately contend with. Consumers demonstrate every day that they don't need help to choose their idols, nor to knock them over. Ignoring this fundamental truth can cost businesses their empires, or lead regulators to deprive the general public of its tremendous power.

## Technologies & Business Models Are Not a Given

Beyond the common fallacies examined above, there is a deeper reason why regulators should not pick winners in any market on behalf of consumers. When regulators contemplate the investment required to establish and operate a specific infrastructure on the one hand, and the revenues which can be expected from it on the other hand, they assume implicitly that both the technologies and the revenue models will remain constant in the foreseeable future.<sup>29</sup>

However, assuming that technologies and business models are a given constitutes a fatal flaw in understanding the marketplace, because it obliterates the very essence and purpose of competition, namely the constant renewal and improvement of consumer options.

**Several innovations came from less regulated emerging markets, such as international remittances, utilities payment services, and musical ring tones, to name a few.**

In contrast, market theorists such as Joseph Schumpeter see the marketplace as creative destruction, a "process of industrial mutation that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one."<sup>30</sup>

At any given time, several technical pathways are being explored and tested, and several business models aimed at conquering the hearts and minds of consumers are being tried.<sup>31</sup> It is the fate of every single technology and business model to eventually become obsolete.

The telecommunications industry is not exempt from such drastic mutations. The sector has actually gone through several crises over the past 30 years. Firms had to reinvent themselves to survive. Originally, an integrated

27. Jess Hicks, "Research no motion: How the Blackberry CEOs lost an empire," *The Verge*, February 21, 2012.

28. Bryan M. Wolfe, "In his own words: Steve Jobs was surprised by App Store's early success," *IDB*, July 27, 2018.

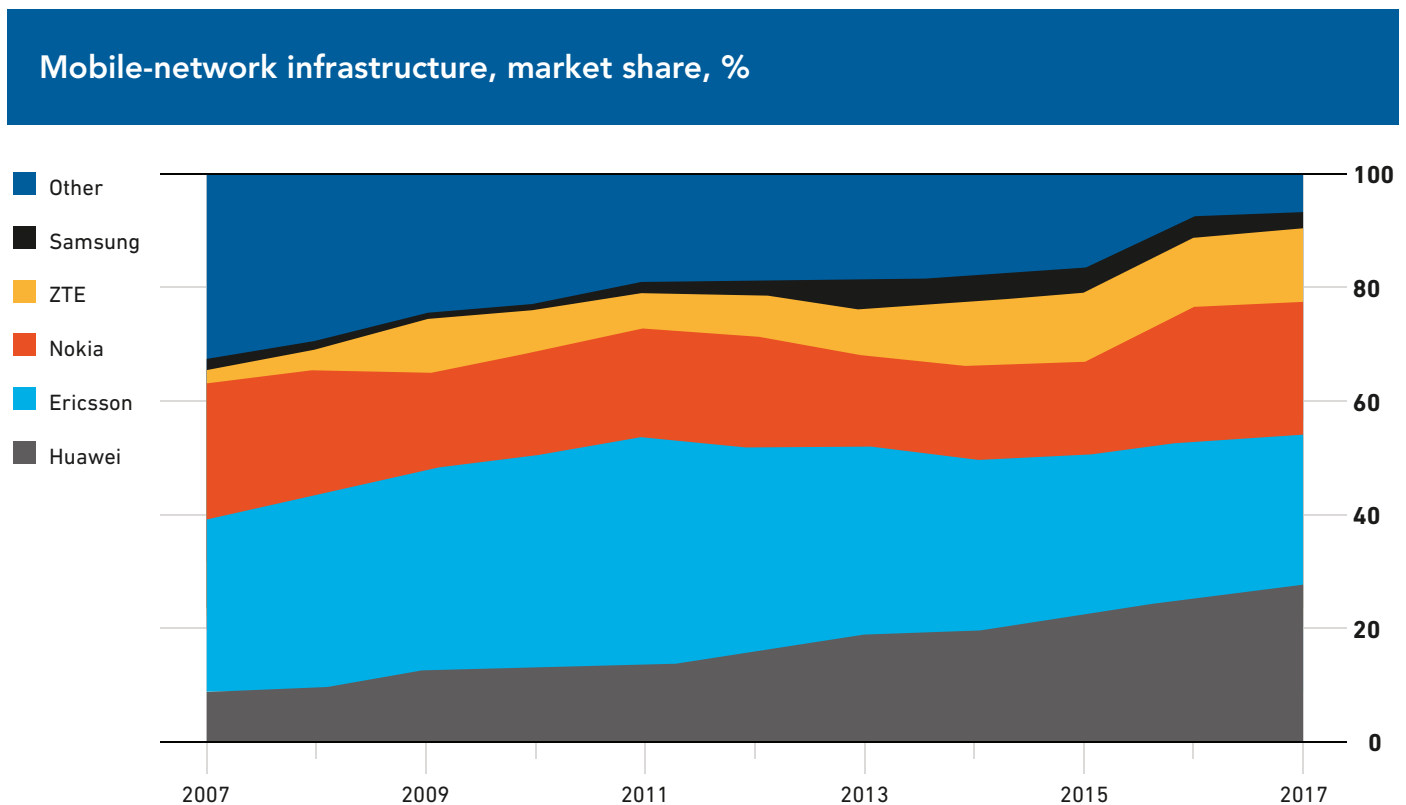
29. Otherwise, they would not be able to define the service specifications required in the tendering process to award licenses, nor determine the profile of companies eligible to participate in the bidding process.

30. Joseph Schumpeter, *Capitalism, Socialism and Democracy*, "Chapter VII: The Process of Creative Destruction," Harper Colophon, 1986 [1942], p. 84.

31. Also, these developments do not happen in isolation. Competitors look over each other's shoulders and learn from each other's successes as much as each other's failures. They are emulating each other. However, at the end of the day, all these struggles are transparent for consumers, who get the last word to decide which proposal suits them best.



Figure 2-2



Source: "Ericsson and Nokia are now direct rivals. How do they compare?" *The Economist*, March 10, 2018.

organizational model held sway, built by operators from the ground up. Then, with time and competition came specialization and re-organization. Different business models took hold. Some operators started to outsource the maintenance of their radio networks, including both their active and passive infrastructures. In some places, wireless infrastructure companies (known as tower companies) developed separately from operators as stand-alone businesses. Some operators shared infrastructure (rent, power, security) in order to reduce their operating costs; others let competitors roam their networks for a mutually agreed upon fee. Mobile Virtual Network Operators appeared whenever certain operators were willing to sell their surplus capacity, or unwilling to deploy in specific geographic areas. Some operators outsourced their commercial distribution to separate firms whenever and wherever it made business sense to do so.

Meanwhile, many emerging markets grew essentially with prepaid services. Incidentally, several innovations came from less regulated emerging markets, such as

**Financial strength provides no immunity to protect firms from competition once they find themselves overwhelmed by new consumer demands.**

international remittances, utilities payment services, and musical ring tones, to name a few.<sup>32</sup>

Schumpeter was a visionary, as he understood that progress was not happening only at the retail level—with companies and their customers—but also all across the value chain, which is to say with suppliers, and with the suppliers of suppliers. The global telecom sector's recent evolution is a perfect illustration of these kinds of dynamics. The number of mobile and fixed operators has not changed much over the past few years, but the number of their suppliers has decreased drastically (see

32. Jonathan Donner, *M-Banking and M-Payments Services in the Developing World: Complements or Substitutes for Trust and Social Capital?* 2007.

Figure 2-2).<sup>33</sup> A few equipment manufacturers competing on a global stage eventually became giant players, and their bargaining power as well as their technical leadership increased significantly. It would be very naive to look only at retail firms to assess the health of the industry, and thereby overlook the relative strength and leadership among players across the value chain.

Similarly, while overall customer spending on telecommunications has increased over the past decades, this was mainly captured by terminal manufacturers who in turn became shot callers as to what kind of data speeds should be available in the market and what technical standard (CDMA, GSM, LTE, WiMAX, or 5G) should prevail. Equipment manufacturers, terminal manufacturers, internet service providers (whether wireless, wireline, or cable companies) and content providers all belong to the same ecosystem. They must adapt their strategies to each other's progress, always driven by what final customers (the general public) want and are willing to pay for.

**Equipment manufacturers, terminal manufacturers, internet service providers and content providers all belong to the same ecosystem. They must adapt their strategies to each other's progress.**

From this more complex and realistic perspective, it is clear that it is impossible for a central regulator to anticipate and plan for the many business arrangements the industry can adopt in the course of its development. There is a constant flow of trials and errors, and sometimes successes, and more rarely enduring successes. We never know which businesses and organizational models are going to emerge, or how long they will last.

The only sure thing is that when a regulator is favouring one of them (such as service-based competition) as a typical pattern for regulation purposes, it is preventing many others (such as facilities-based competition) from emerging and competing for the chance to satisfy customers. The market can't be tamed, and it certainly can't be created from the top down. As a consequence, the CRTC should embrace the view that the market is an organic and dynamic process whose final state is never

reached, as it is always pushed further back by market players competing for consumers' business.

33. Lucy Hooker and Daniele Palumbo, "Huawei: The rapid growth of a Chinese champion in five charts," BBC, May 20, 2019; "Ericsson and Nokia are now direct rivals. How do they compare?" *The Economist*, March 10, 2018.





## CHAPTER 3

### Reintegration of the Telecommunications Industry under the General Competition Regime

#### Immediate Economic Impact

Rescinding the specific regulation of the telecommunications industry will create immediate economic value. First of all, some financial and human resources currently devoted to compliance matters will be freed up and made available for productive use. Indeed, while the compliance effort may be coordinated by a single dedicated department, employees from across the entire organization either report on or review corrective action plans in order to prepare for regular internal and external audits.

Unlike other business-related risk management activities (such as fraud prevention and business continuity planning), compliance activities have no positive influence on a firm's bottom line. On the contrary, they divert employees' time from productive activities. Managerial time in particular will be rapidly reallocated to creating value for both customers and shareholders.

Then, as soon as the mandatory sharing policy is rolled back, incumbent wireline operators and cable operators, who were reluctant to make further investments that would have also benefited their competitors, will be encouraged to put more money to work. Projects which were held back because of an uncertain return on investment (remote area rollouts, next generation technologies) will be completed earlier.

Formerly subsidized operators will have to up their game or go out of business (although their brands could be creatively redeployed elsewhere). This will have a positive impact on the industry, and will also benefit the rest of the economy. Indeed, the resources employed in subsidized activities generally perform below par, as they are kept viable by the artificial lowering of the costs of goods sold. In fact, if their profit margins are lower than the value of the legal discount they enjoy, then they do not actually create any economic value. Once these operators start operating in a non-subsidized environment, they can become profitable on their own merits and demonstrate actual productivity.

Finally, commercial offers which were banned by the regulator even after having already found their customers will likely be reinstated if possible. This is probably

the most compelling case for a bureaucratic agency never being in a position to micromanage any sector. To begin with, it is very odd that operators offering promotions aiming to create value for their customers are targeted as evildoers by the regulator. Such promotions can create value either directly (by reducing prices) or indirectly (by offering pay-per-use services instead of a flat rate, or a flat rate instead of a long pricing menu, or a chronometer instead of a "datameter" for video streaming, and so on).

**The 2017 ban on zero-rating practices by the CRTC illustrates the regulator's narrow conception of business models and pricing.**

The 2017 ban on zero-rating practices by the CRTC<sup>34</sup> illustrates the regulator's narrow conception of business models and pricing. A zero price or even very low prices commonly come under fire as predatory pricing, which refers to the notion of charging below cost long enough in order to squeeze out competition and end up enjoying a monopoly or quasi-monopoly position. Yet there are several objections to this theory, in particular the fact that, as long as there is no barrier to entry, this practice is not sustainable. Even very deep pockets are not infinitely deep, and it is impossible for a private operator to throw money away forever. Once prices rise above costs again, competitors will be back, and blaming the "predator" for disturbing the customers' peace of mind. Fear of the use of predatory pricing to achieve market concentration is therefore unfounded.

Furthermore, the practice of having loss leaders on display to attract customers to your shop is as old as commerce itself. Supermarkets use it all the time. They regularly offer certain food items at cost, or close to it, in order to entice customers to shop inside their stores. Again, the regulator's conceptual mistake here is to look at product profitability instead of customer profitability. Telecommunications operators generate revenues through a vast array of services. For example, when wireless operators charge each other interconnection fees, the calling number from network A spends money, but the receiving number in network B creates revenue for its operator, which gets the interconnection fee from

34. CRTC, *Framework for assessing the differential pricing practices of Internet service providers*, Telecom Regulatory Policy 2017-104, April 20, 2017.

its counterpart.<sup>35</sup> Similarly, an operator can offer free (or unlimited) network calls hoping that other services, such as text messages, ring tones, international calls, cross-network calls, and remittances will make it worthwhile.

Skype's business model was built according to the same logic: As long as some people sometimes pay for calls to landlines or to wireless phones, the company can make a profit, even if 90% of its traffic were free of charge.<sup>36</sup>

When Bell and Videotron decided to offer TV streaming services at a flat rate per hour instead of charging for data consumption,<sup>37</sup> they probably calculated that they would be able to entice the customers who went for it to spend extra money on other services too, including competing TV content with extra data charges! As a consequence, there was value created on both sides, and preventing these deals from happening deprived both operators and customers of that value.

## Most Favourable Conditions for Innovation

As explained above, the current mandate for wireline incumbents and cable operators to share their networks, while aiming to boost the size of new ISPs, ended up creating a discriminatory playing field where some operators can grow and prosper at the expense of others (literally, being financed by their competitors). As a consequence, rescinding the regulation would create a level playing field for facilities-based competition among wireline and cable operators.

Given that cable operators, while entering late in the telecommunications services game, managed to grasp some serious market share (not because of but despite the regulatory landscape), we can be optimistic about the future. Nor should we forget that the present sizes and positions of industry players are not a reliable indicator of their future sizes and positions.

In this regard, one of the most fascinating innovation case studies in the history of business is the advent of the Xerox company. In the fall of 1959, the first fully-automated plain-paper copier was exhibited to the press in New York City. It was not the result of any large company's research and development centre such as

Eastman Kodak or IBM at the time, but from Chester Carlson, a New York patent attorney who carried out the initial R&D in his apartment kitchen as early as 1938. Carlson had tried to approach both Kodak and IBM with his invention, but they rejected the idea on the basis that there was no potential market.<sup>38</sup>

Carlson finally found a small company, Haloid, a photographic paper manufacturer with sales under US\$7 million, which took the gamble and bought the rights in 1947, then developing the first commercial prototype, the Xerox 914. Haloid became Haloid Xerox and then Xerox, and the rest is history. By the mid-1980s, the photocopier market was worth just over US\$8 billion, and was largely dominated by Xerox. Still, by that time, competition (mainly from Japan) had already reduced Xerox's market share from 75% in 1975 to less than 40% in 1982.<sup>39</sup>

**Skype's business model was built according to the same logic: As long as some people sometimes pay for calls to landlines or to wireless phones, the company can make a profit.**

But the innovation story does not end here. In 1973, the Xerox Research & Development company (Xerox PARC) came up with the Xerox Alto,<sup>40</sup> the first personal computer with graphic user interface, which also used a mouse.<sup>41</sup> In a curious irony, it was now the Xerox management's turn to reject a game-changing innovation, thinking that the unit cost was too high for it to find a market.

The lessons to be learned from the Xerox story are that a lone inventor can launch a revolution; that a small company can outcompete giants; and that success generally breeds the wrong mindset (complacency, conservatism) for keeping up with fast-evolving consumer demand.

35. Believe it or not, once upon a time, operators used to charge customers for receiving calls too.

36. Jack Schofield, "5 reasons why Microsoft buying Skype makes sense," ZDNet, May 13, 2011; Zaw Thiha Tun, "How Skype Makes Money," Investopedia, June 25, 2019.

37. Martin Masse, *The State of Competition in Canada's Telecommunication Industry – 2018*, Research Paper, MEI, May 8, 2018, p. 33

38. Murray N. Rothbard, *Making Economic Sense*, Ludwig Von Mises Institute, 2006 [1995], pp. 199-200.

39. *Ibid.* Incidentally, this shows the futility of the 1978 Xerox anti-trust case. See Justia US Law, "Scm Corporation, Plaintiff-appellant, v. Xerox Corporation, Defendant – appellee, 645 F.2d 1195 (2d Cir. 1981)," March 12, 1981.

40. Michael Aaron Dennis, "Xerox Park," *Encyclopedia Britannica*, November 17, 2000.

41. Ali Montag, "Here's why your computer has a mouse, according to Steve Jobs in 1985," CNBC.com, May 21, 2018.



Setting up better conditions for innovation in the telecommunications industry will certainly unlock new avenues for value creation. One interesting scenario would be for facilities-based operators to finally manage to extract money from the OTT (Over-the-Top) firms<sup>42</sup> which benefit greatly from their infrastructure without having to pay for it. One way to achieve this would be to re-organize the segmentation of the data usage market. Until now, customers have often paid a flat fee for a certain level of data service measured in bits. However, one-size-fits-all is rarely the optimal strategy.

On the one hand, some customers would be happy to pay less for lower technical quality (which would not affect their own user experience of, say, browsing through their email or their social media accounts), while others would be happy to pay more for higher technical quality, as it has a very significant effect on their entertainment experience (think of online poker players or gamers, for example) or their business (think of the owners of the “third places” mentioned above).

**One interesting scenario would be for facilities-based operators to finally manage to extract money from the OTT (Over-the-Top) firms which benefit greatly from their infrastructure without having to pay for it.**

What regulators mistakenly refer to as “service discrimination” is actually called “segmentation” in the business world.<sup>43</sup> Actually, the ability to differentiate your level of service (both your cost structure and your performance) for different segments of the market increases value for all parties. Moreover, there have been peak and off-peak tariffs, which is price differentiation by time of usage, for almost as long as telecommunications services have existed; why not also accept the possibility of differentiation according to the type of usage?

42. Like Netflix, Hulu, and Amazon Video.

43. For a fairly typical discussion of price discrimination, see Neil Howe, “A Special Price Just for You,” *Forbes*, November 17, 2017.



On the other hand, OTT brands are certainly able, and could be willing, to pay for their platforms to be more readily available to customers. Indeed, you may have had the experience of not being able to complete an online purchase (say, a last-minute plane ticket at a bargain price with only three seats left), whether because pages could not load in time for secured payment to take place, or because the connection was interrupted while you were on the move and you were asked to start the whole process all over again (which you may have decided not to do).

As the share of online spending made by Canadians with their smartphones keeps growing,<sup>44</sup> the stakes for online retail platforms to ensure access quality and reliability are getting higher (see Figure 3-1). There could come a time when they decide to participate in facilities-based networks' efforts to increase mobile customers' access. They might want to hold operators accountable for ensuring reliable access, against financial compensation.

We don't know whether this scenario will unfold or not, and if it does, which market players (consumers, network operators, content providers) will pay extra for uninterrupted platform access.

What is important here is that, with the freedom to innovate and with the ability to try and fine-tune new revenue models, the next generation of services will arrive much faster and will be much more gratifying once the most favourable conditions for innovation are in place. This means, once again, rolling back current industry-specific regulation and relying at last on the presumption of competition.

## A Clear Path Forward

There is a clear and compelling case in favour of the presumption of competition as a guiding principle for policy-making, and against the presumption of regulation.

In the first volume of his trilogy, *Law, Legislation and Liberty*, Nobel laureate Friedrich A. Hayek gave us a very sensible perspective on the superiority of principled policy-making over expedient policy-making:

Since what makes freedom so precious is that it opens opportunities to initiate courses of action nobody could predict or anticipate, we rarely realize what we miss because of a certain restriction of freedom on a particular point. Every restriction of

this kind, every limitation other than required for the enforcement of general rules, aims at obtaining a specific predictable result, while what will thereby be prevented from occurring is usually ignored.<sup>45</sup>

Regulatory expedients may give some visible results in the short term, but most indirect and longer-term effects will not be taken into consideration. Consequently, we are never able to envision and account for the total cost of such intervention. That is why the cautionary rule "First Do No Harm," quoted at the top of this Research Paper, should always apply in matters of public policy as much as in medicine. If you can't measure the amount of damage a specific remedy will inflict, you should refrain from prescribing it.

Truth be told, it is easier for most people to comprehend the expected results of a regulation than to imagine the future benefits derived from the freedom to innovate, for the very reason that the latter don't exist yet and still need to be invented. This cognitive bias induces many people to lean toward what already exists, instead of trusting that better things are coming.

**The ability to differentiate your level of service (both your cost structure and your performance) for different segments of the market increases value for all parties.**

Nevertheless, human creativity and entrepreneurship are all around us every day. This should be a cause for a less pessimistic outlook on the future, especially given that experiments all around the world are proving Hayek's point over and over again.

After erring on the side of net neutrality for a couple of years and having suffered the consequences, namely a significant drop of investment in their telecommunications industry, in 2017, the U.S. FCC repealed the vague "general conduct standard," finding that the cost associated with it outweighed its benefits.<sup>46</sup> With internet freedom restored, their industry got back on track in terms of growth.<sup>47</sup>

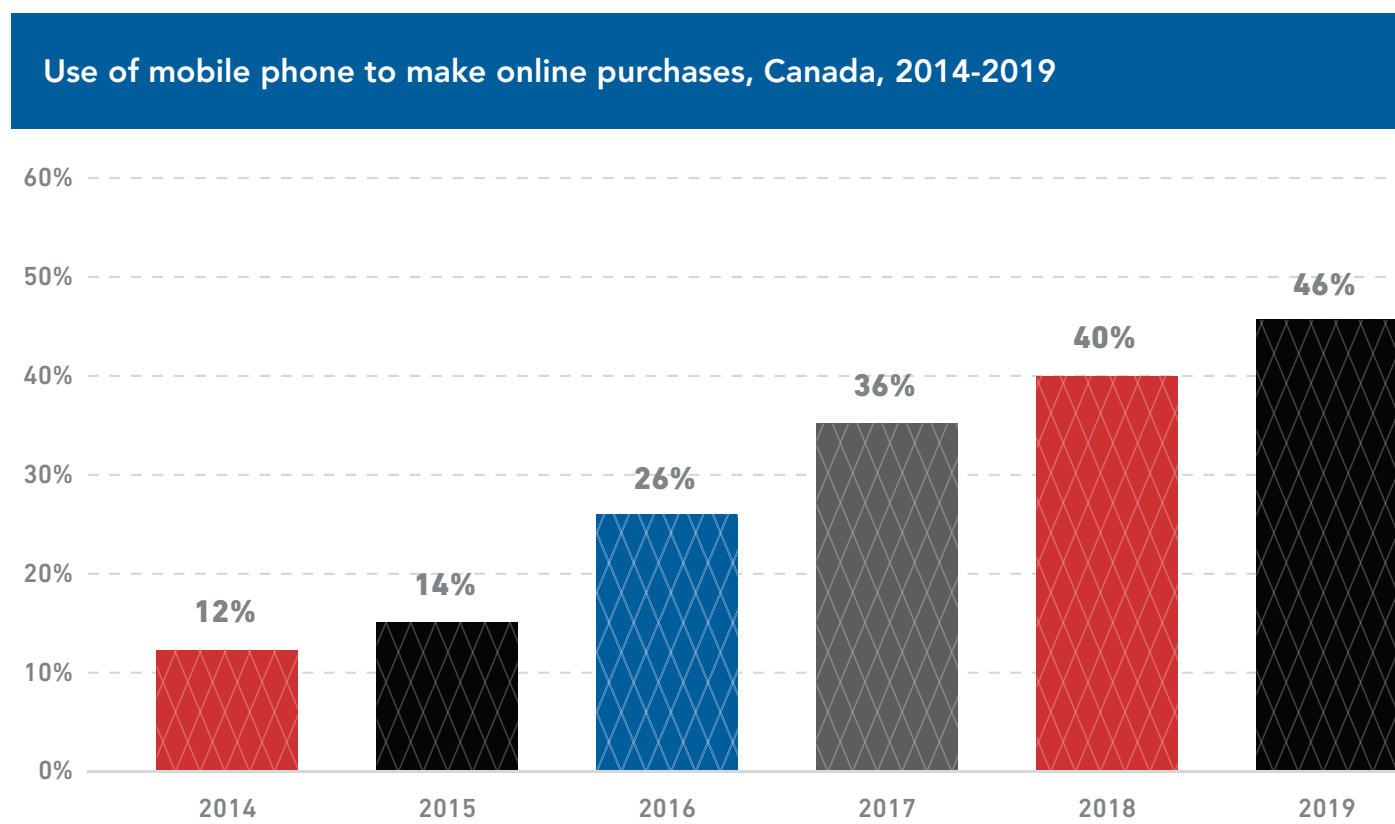
45. Friedrich A. Hayek, *Law, Legislation and Liberty*, 1973.

46. Hal J. Singer, 2016 Broadband Capex Survey: Tracking Investments in the Title II Area, personal blog, March 1<sup>st</sup>, 2017, cited in Martin Masse, *op. cit.*, footnote 37, p. 31.

47. The best in class in this regard is Denmark, which in 2011 eliminated its regulator altogether with outstanding results, ranking 4<sup>th</sup> in the world according to the 2017 ITU report (measuring access, use and skill levels in information communication technologies). See Martin Masse, *op. cit.*, footnote 37, p. 38.

44. Canadian Internet Registration Authority, "2019 Canada's Internet Factbook," CIRA, April 2019.

Figure 3-1



Source: Canadian Internet Registration Authority, "2019 Canada's Internet Factbook," CIRA, April 2019.

On the other end of the spectrum lies the European Union, which has strictly enforced a mandatory network sharing policy, and given new competitors access to incumbents' next generation networks, with catastrophic results. A 2016 study found that Europe, once a leader in the digital economy, had overall next-generation access coverage of 54%, compared to 82% in the United States.<sup>48</sup> Canada is in between the EU and the US as far as regulation is concerned.

Both theoretical arguments and public policy experiments point toward more freedom and less intervention. The CRTC must rescind its special regulatory policies as soon as possible and let the sector fall under the general competition regime in order to enjoy the proceeds of unhampered competition.

From a long-term policy goals standpoint, the cumulative positive effects of any innovation is worth considering. Besides rendering previous technologies

**As the share of online spending made by Canadians with their smartphones keeps growing, the stakes for online retail platforms to ensure access quality and reliability are getting higher.**

completely obsolete in a specific industry, an innovation can at the same time inspire bigger and more impactful inventions far beyond its original scope. A perfect illustration of this point is the epilogue of the Xerox saga. After Xerox PARC was asked to abandon the Alto project, most of its ideas were then picked up by two relatively unknown entrepreneurs named Bill Gates and Steve Jobs, who separately created two giants of the digital economy as we know it. Rescinding current regulations will unleash the creative potential of the telecommunications industry—both insiders and newcomers—but it will also inevitably benefit the entire Canadian economy.

48. Andrea Renda, *Winners and Losers in the Global Race for Ultra-Fast Broadband: A Cautionary Tale from Europe*, Macdonald-Laurier Institute, August 2016, p. 16.



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