

Research Article

Innovation Strategies Under Uncertain Regulatory Circumstances: Argentinean ICT MSMEs¹

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Abstract

The purpose of this article is to identify the business strategies of micro, small, and medium enterprises (MSMEs) in the telecommunications sector in Argentina, considering the economic and technical uncertainties and the regulatory constraints they face. We focus on MSMEs because, even though these small businesses provide critical access to infrastructure in remote communities, there is little research about them. Departing from Michael Porter's identification of strategies, we find that economic and political uncertainties lead to significant differences in strategies. Through content analysis of company interviews, we were able to identify strategies that prevail under suboptimal regulatory conditions. These are 1) survival, 2) slow modernization, 3) infrastructure capitalization, and 4) diversification and customization. We find that these are reactive and suboptimal business strategies that impede companies' growth and constrain them to vulnerable niche markets.

1. Introduction

Despite the fact that two-thirds of employment in less-developed countries (LDCs) are generated by small and medium enterprises (SMEs) (Ayyagari, Demirguc-Kunt, & Maksimovic, 2011), we know little about their operations and business strategies, or about the factors that affect their operations. In Argentina, in the manufacturing sector alone, SMEs generate 44.6% of employment (Peres & Stumpo, 2000), and micro firms add close to another 20% of employment to that figure (Berg, Ernst, & Auer, 2006). We chose the telecommunications sector for this study because of the key role that an information infrastructure plays in the economic, political, and social development of a nation (Nolan, 2003). SMEs (firms with fewer than 100 employees) appear to have a positive impact on non-urban communities, and in Argentina, they are often the only providers of information and communication technology (ICT) services for these communities.

We emphasize the telecom side of the ICT sector because the telecommunications industry is still highly regulated.² Thus, in this article, we

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2. Information and communication technologies (ICTs) is an umbrella sector that is useful here because convergence has made the distinction between telecom and ICTs difficult. In fact, the companies we interviewed also provide services in the wider ICT field, not only telecom services.

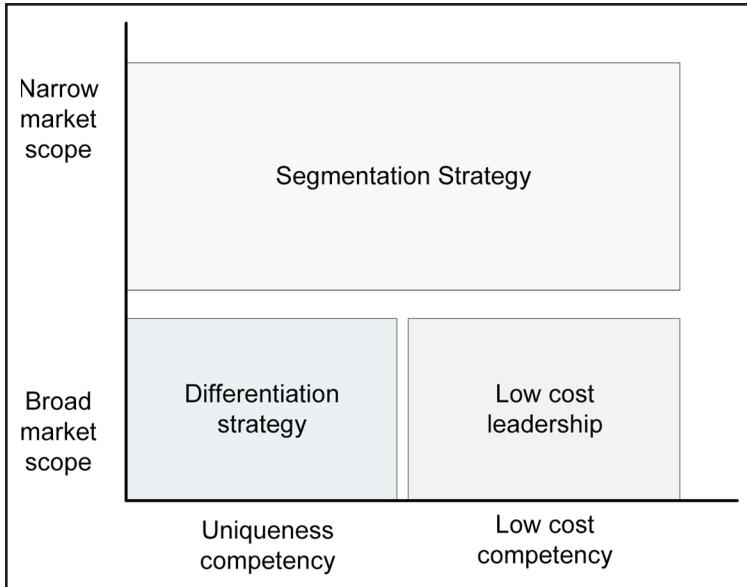


Figure 1. Porter's competitive strategies.

focus primarily on regulatory constraints, although we highlight other economic and technological constraints present in this sector in Argentina. We want to understand how these constraints affect these companies' operations and business strategies.

This article is exploratory in nature, as existing research on the field has not attempted to examine the strategies of telecom MSMEs or the ways that they are affected by economic and political constraints in less-developed countries. We hope our findings prompt other researchers to continue the exploration.

In the following sections, we review the literature, provide information about the sources of data that were used for this research, and then present an alternative framework that identifies the different strategies that small companies in the telecommunications sector have adopted as a result of the circumstances they face. The paper ends with conclusions and policy recommendations.

2. Literature Review and the Argentinean Context

There is little research about SMEs in developing countries. Ray and Ray state in this respect:

Extant literature, both theoretical and empirical, has neglected the need for and production of appropriate technologies in emerging countries—assumption [sic] being that major innovation

models of multinational enterprises (MNEs) from developed countries can be costlessly selected and applied in the former. (2010, p. 144)

In our review, therefore, we point out the differences or challenges we see in the Argentinean context.

A. Competitive Strategy

Porter (1980) observes that a competitive strategy is a formula that allows officers of a company to determine their goals, the ways they need to conduct operations, and the policies they need to put in place to successfully compete in the market. Such a strategy is thus a combination of ends (goals) and means (policies). From his study of several industries,

Porter (ibid.) identifies two factors that determine competitive strategy: 1) costs (or differentiation), and 2) market scope, defined as broad or narrow. This leads to his creation of a two-by-two matrix—type vs. scope—that defines three generic strategies for achieving performance and economic benefits: 1) cost leadership; 2) differentiation; and 3) focus, also called *niche* (see Figure 1).

For each of these strategies, the expectation is that a company will be able to continue to grow and successfully take advantage of the approach to fend off competitors. These strategies, however, do not take into consideration the regulatory and economic constraints that MSMEs face in less-developed countries, and because of that, we see an almost entirely different set of strategies and behaviors.

We are unaware of how MSMEs strategize, as previous work has generally black-boxed their specific strategies, instead researching factors outside of the firm such as size, location, and age (Freel, 2000). Even studies like Freel's (ibid.) which sought to "open the box," fail to consider government policy constraints on the innovation strategies of MSMEs.

Porter also conceptualizes business strategy in terms of competition, as the "creation of a unique and valuable position, involving a different set of activities" (1996, p. 68). In Argentina, however, the

companies we interviewed were not motivated by competitive forces, as many of them, operating in non-urban communities, did not have competitors. Their operations were more affected by backbone access and regulatory constraints.

B. Business Strategies in Emerging Countries

The economic and political circumstances of a country, we believe, impact the manner in which MSMEs operate. Gross domestic product (GDP), currency stability, credit ratings, access to technical expertise, access to financial resources, quality of trading partners, and amount of imports and exports (Johnson, 2001) are all measures that companies take into consideration when making investment decisions. For the telecommunications sector, the presence of technologically sophisticated local industry and labor are also relevant investment factors. In less-developed countries, however, these are suboptimal. The strength of demand is weaker, although in this case, we have selected a country with favorable macroeconomic indicators.

Argentina, with a population of about 40 million people, has the second-largest GDP in Latin America with an estimated US\$14,125 annual per capita income (IMF, 2009). In 2009, however, the World Economic Forum ranked the Argentinean economy in the 85th position globally (medium-low compared to the rest of Latin America) with weaknesses in five categories: solid institutional environment, market efficiency, labor efficiency, capital availability, and financial instruments. Its "most problematic factor," selected from a group of 15 options, is policy stability.

These macroeconomic conditions affect a company's operations because they generate uncertainties and problems involving uncertainties are more pronounced in developing nations. According to Damanpour (1996), the more complex and changing the environment, the higher the level of environmental uncertainty. Freeman and Soete (1997) identify three factors that lead to uncertainty which we find particularly relevant for this study: 1) market uncertainty, 2) technical uncertainty, and 3) general political uncertainty.

1) Market Uncertainty

From an economic perspective, uncertainty may increase investment because of the positive expected value of a marginal unit of capital (Abel, 1983; Hartman, 1972). Innovative strategies operate

as instruments to counteract uncertainty and create abnormal profits as a way of "escaping competition" (Aghion, Bloom, Blundell, Griffith, & Howitt, 2005). The opposite has also been argued that for individual investors, uncertainty has a negative impact, particularly on irreversible investments such as those in the telecom sector (Dixit, Pindyck, & Davis, 1994). More recent models have found a nonlinear relationship between these two variables (uncertainty and investment). When low uncertainty exists, an increase in uncertainty positively affects investment; if high levels of uncertainty already exist, an increase in uncertainty lowers investment (Bo & Lensin, 2005).

In Argentina, there have been two periods of economic downturn, one in 1995 and another in 2002. Unemployment increased to 18% and 20%, respectively (ECLAC, 2009), and levels of poverty increased to 27.3% in 1996 and 52% in 2002 (ECLAC, 2009). Today, the situation is much improved, even with the most recent 2009 global economic crisis when the country experienced a stunted 0.9% GDP growth. In 2010, according to the most recent statistics available, between 5% and 10% of the population were considered below the poverty line, earning one U.S. dollar a day (ECLAC, 2010b), and unemployment was recorded at 7.5% that same year (ECLAC, 2010a). This is a normal state of affairs in less-developed nations where economic and political forces are not particularly stable or predictable. In addition, Caballero (1991) argues that the impact of uncertainty on investment is affected by the degree of market concentration, which, in his opinion, determines whether companies, in the presence of uncertainty, will invest or not. In the telecommunications sector, ever since liberalization, the main focus has been on expanding the network and introducing competition. It was normally assumed that competition would take care of modernizing the sector. In Argentina, however, the level of competition has been decreasing since liberalization. Carriers concentrated in the major markets and rarely moved out to tier-3 city regions (O'Keefe, 2003).

Non-urban areas have experienced a curious phenomenon which is, to a certain extent, unique to telecommunications. While many of these communities do not have providers of ICT services, those that do rely on the infrastructures of incumbent carriers. Negotiating with them is difficult because they try to extract as much revenue as they can from the

smaller players given that smaller companies have no other options. It should also be noted that both regulatory and economic uncertainties affect MSMEs more because they lack the resources to survive periods of economic downturn.

2) Technical Uncertainty

Technical uncertainty in emerging telecommunications markets stems primarily from two sources. One is the dependence that companies in these markets have on foreign equipment, which makes them vulnerable to currency exchange variations. The other major uncertainty is the fact that these are irreversible investments. Companies cannot strip out their networks to deploy them elsewhere. In addition, the sector experiences fast technological development which rapidly makes existing equipment obsolete.

MSMEs face two additional sources of uncertainty. Because most of their equipment is imported, these organizations cannot easily pay for the potential expenses related to technical or maintenance support. An even bigger concern is the uncertainty related to access to key infrastructure which results in a dependence on incumbent carriers for this resource.

The 2001 recession—only one year following liberalization of the Argentinean telecom market—forced the government to abandon its monetary parity with the U.S. dollar. Consequently, incumbent carriers made claims before the International Centre of Settlement of Investment Disputes (ICSID) regarding the negative effects that the devaluation had on regulated, peso-denominated telephone tariffs. This led to a significant change in the regulator-incumbent relation, immersing the regulators in a kind of passive period of control and supervision with little enforcement (Zubieta, 1996).

The sector, being a service industry, relies on local consumption, which, at that time, was negatively affected by the crisis. The Argentinean telecom sector found itself with expenses denominated in dollars, but revenues made in the weaker local currency (Johnson, 2003). Not surprisingly, many telecommunications operators significantly reduced their investment. Some of them abandoned the market altogether (O'Keefe, 2003) and many small telecom providers went bankrupt (Wallin, 2002).

Mobile penetration in Argentina, which is now almost 100%, has seen declines in growth since 2006. The mobile market is approaching saturation, and incomes are still depressed. This has led compa-

nies to introduce subsidies and programs to facilitate the acquisition of cellular equipment and services (Giglio, 2008). They have introduced programs that allow people to connect to the Internet on a prepaid basis with no monthly charges (CANAEMTE, 2008). Similarly, competition in the mobile market reduced margins, but also prices. In 2003, a basic GSM phone with an annual contract cost US\$131, while in 2007, the same package cost US\$21.

The 2008 world economic crisis challenged the sector once again, slowing the recovery. The 2010 market report for the telecommunications sector indicates that the expansion rate declined, but operators continued to add subscribers looking for new services. Mobile broadband has been a particularly appealing growth area due to the low penetration rate that still exists in the country (Wahid, 2010).

During this period, the rural sector suffered from low levels of connectivity, which are more pronounced in the fixed versus the mobile infrastructure. It is often in these areas where MSMEs operate, given the opportunities they see from unsatisfied demand. In Argentina, as in any other Latin American country, there is great disparity in teledensity between major cities (in particular Buenos Aires) and the rest of the country (Galperin & Molinari, 2007).

If technological uncertainty has been a serious problem for large companies, it is even more so for MSMEs, because their margins are much smaller, and they rely on smaller markets.

3) Political Uncertainty

Many researchers have studied uncertainty and have recognized, in particular, the effect of regulatory constraints (Abel, 1983; Abel & Eberly, 1999; Bernanke, 1983; Bo & Lensin, 2005; Carruth, Dickerson, & Henley, 2000; d'Halluin, Forsyth, & Vetzal, 2002), but have failed to zoom in on the details to determine how MSMEs in LDCs design their business strategies. The main problem has been that scholarly work which focuses on the business aspects of entrepreneurship ignores the impact of government regulation.

Political uncertainty, particularly in the telecommunications sector, is associated with lack of transparency, lack of independence from political and business interests, lack of accountability, delayed decision-making processes, lack of predictability, and unfair decision-making processes (Garcia-Murillo, 2011). The main concern is that, under uncertain

political circumstances, companies will engage more in pie (market) redistribution through government lobbying than in pie enlargement (investment). MSMEs, however, lack the resources to engage in political lobbying; they are thus subject to the political and corporate decisions of larger players. Unable to influence policy, the natural course of action for these smaller players is to “wait and see” (Sauner-Leroy, 2004).

Johnson (2003) identified three factors that made Argentina’s political environment particularly uncertain: 1) government corruption and the extraction of revenue from the country, 2) lack of enforcement of laws and regulations, and 3) economic policies imposed by the IMF as a condition for continuing to obtain foreign credit (Paddock, 2002). In this section, we focus on the factors as they relate to laws and regulations pertaining to the telecommunications sector.

For the purpose of this article, we focus only on the two regulatory issues that have the greatest impact on the business strategies of small service providers: interconnection and licensing/authorization.

i. Interconnection

Telecommunications, like any public utility sector, demands that operators compete as service providers, but cooperate through interconnection (InfoDev, 2009). Argentina’s Decree 764/2000 includes in its Appendix II the National Regulations of Interconnection (NRI), specific guidelines that include the “right of request and obligation of conceding interconnection” (Art. 1, Dec.764/2000). In addition, the NRI principles of agreement between parties state that these should be compulsory and nondiscriminatory, with reciprocal compensation and an open architecture; should feature tariffs based on incremental costs; and should provide the freedom to offer services that use such interconnection (Art. 6, Appendix II, Dec.764/2000). However, according to Johnson, the Argentinean government does not have “adequate anti-competitive laws to prevent industry abuses” (2003, p. 18), and, despite liberalization, the local fixed-line market is still dominated by the two regional incumbents, Telefonica de Argentina and Telecom Argentina (2009).

Since 2000, there have been no legal requests for regulatory intervention related to interconnection. This could be considered evidence of success; however, there is evidence of low interest in active

involvement on the regulators’ part, and of the sometimes-abusive power of incumbents which offer unfavorable interconnection terms to smaller operators (Galperin & Cabello, 2008).

ii. Licensing

Normally, competition has a positive impact on innovation, and an easy, transparent, and expedient licensing regime fosters entry and, consequently, competition (InfoDev, 2009).

Argentina has asymmetrical license regulations for telecommunications and audiovisual companies. Telecommunications licenses are open to any entity that complies with a number of specific requirements (Decree 764/2000). In contrast, audiovisual licenses are limited to companies that: 1) are not telecom providers (Decree 62/1990), 2) do not own international property—directly or indirectly—above 30% (Law 25,750/2003), or 3) are not public service providers (Law 26,053/2005).

The regulatory framework for audiovisual services is still under development based on the new law. The Federal Authority for Audiovisual Communication Services has not yet issued normative policies related to this type of license. In contrast, Decree 764 of 2000 established a single, instead of a per-type telecommunications license, which is supposed to make the technology neutral. All telecommunications companies, including those whose business model depends on “resale” of telecommunications services, have to apply for a license. The decree also includes a maximum time for the application to be processed (60 days)—“in case of silence of the Authority of Application at the expiration day, the application will be considered denied” (Busso, Negri, & Tejeiro, 2008). Some scholars have argued that this makes the Argentinean framework one of the most modern in Latin America (Galperin & Cabello, 2008). However, evidence indicates the contrary: Applications can sit for months, or even years, without being specifically denied. A paper by Garcia-Murillo (2011) documents these weaknesses in the Argentinean regulations.

3. Methodology

This article is a qualitative study. Argentina was selected because, compared to the rest of Latin America, the economy and the telecommunications sector are more developed and relatively modern. We assumed that any country that we selected would have to have a minimum level of development for its private sector to show evidence of

sophisticated business strategies. Even after the 2002 Argentinean crisis, the country's GDP has steadily increased (World Bank, 2009). Argentines are among the most well-educated citizens in Latin America (World Bank, 2009). The country has the second-highest proportion of broadband penetration after Chile, with 9.3% of the population having access (Telcommunity, 2010).

This research relied on semistructured interviews done with MSMEs in Argentina. We believe that it was only by conducting in-depth interviews with companies that we could obtain the rich information we needed to understand their business strategies in light of economic, technological, and regulatory constraints. The companies were randomly selected. We obtained a public database from the National Communications Commission of Argentina (CNC in Spanish) website, which listed all companies. From this list, a random sample of 1,222 companies was contacted by phone, but of those, 60.5% were no longer in service (i.e., we got a recorded message that the phone number in the database for that company was no longer in service). Some of the companies were discarded because they were primarily hardware vendors or cooperatives, which operate under a different business model. Through this effort, nonetheless, we were able to conduct 10 individual interviews, each with a different company. Even though this is a small sample, it generated important and heretofore unknown insights about innovative behavior among Argentinean MSMEs in the ICT sector. It should also be noted that the number of players in the Argentinean telecommunications sector is small, as it has traditionally been dominated by two or three large companies.

All the interviews were done by phone, in Spanish; they had an average duration of about 50 minutes. Of the people whom we interviewed, one was a partner in the business, three were CEOs, two were owners, and five were general managers, with one specializing in legal and regulatory matters.

Table 1 provides a short description of each of the companies interviewed for this article. Because of privacy and competitive concerns, the companies are not identified by their real names; instead, we use the Greek alphabet to identify them in the text.

We prepared a questionnaire to both guide the interviews and collect consistent data. We asked them about their company and collected descriptive information. We asked about their decision to enter

the market, and to determine whether they believed regulation imposed entry barriers. We inquired about innovative products, services, or strategies that they implemented to stay ahead of the competition, about the main obstacles they faced, and about the factors that facilitated their operations. We asked specifically about the effects of telecom regulations on their operations and in particular, about the regulations related to interconnection and licensing. We wanted to know how they adjusted their business in light of these regulations, as we knew the regulations were not adequately implemented or enforced.

The interview transcriptions were analyzed using content analysis software called QDA Miner[®] to find patterns of business behavior. In addition, the author, along with two graduate students, met every week to discuss the content of each interview to identify the business strategies of these companies. After several iterations of attempts to summarize these results in a coherent and organized manner, we agreed on the strategies described below.

4. Business Strategies of MSMEs in the Argentinean Telecommunications Sector

We should remember the three competitive strategies that Porter proposed in his 1980 study. The strategies originated from a study of larger companies in a developed country. As was indicated before, the context and the size of the firms in this study are different, and we also take into consideration regulatory constraints. The result is a series of strategies that have little resemblance to those proposed by Porter.

The review of the literature, as well as the analysis of the interviews, led to the creation of a matrix that presents the types of strategies we were able to identify among MSMEs operating under economic and political constraints. The framework considers the imperfect interconnection and licensing regime that currently prevails in Argentina. Table 2 summarizes the four strategies.

Infrastructure Expansion-Type Strategies

Survival strategy (7 companies). This strategy entails a certain level of investment in infrastructure which, if not undertaken, will jeopardize the

Table 1. Description of Companies Interviewed.

Company name/ Year of establishment	Location	Type of services provided	Description/ (Number of employees)
1. Alpha (1985)	Principally the Buenos Aires–Cordoba–Mendoza corridor	Value-added services	Small private company providing social conference services (1)
2. Beta (2001)	All of Argentina	Value-added services	Small private company focused on data-center, hosting, and general IT services, such as offering networking services for medium-small companies related or not to telecommunications (16)
3. Gamma (2004)	Locality in central-southern Argentina	Public, local, national, and international phone and Internet services	Private company created by an alliance of small cooperatives to circumvent regulatory limitations related to the provision of cable TV-related services. The company offers Internet over cable (1)
4. Delta (2000)	Localities in central-northern Argentina	Value-added and Internet services	Small private company that provides wireless Internet (satellite, WiFi) and network services for other companies, including the sale of networking equipment (8)
5. Epsilon (2004)	Locality in southern Argentina	Value-added, public, local, national, and international phone and Internet services	Medium-small private company that provides telecommunications services in localities with little incumbent competition (32)
6. Zeta (2003)	Small localities inside the Buenos Aires–Cordoba–Mendoza corridor	Value-added, public, local, national, and international phone and Internet services	Medium-size private company focused on medium-size cities and positioned as an alternative to incumbents and other large telecommunications companies. It provides connectivity through satellite antennas for its communities, as well as for emergency services along roads (75)
7. Eta (n/a)	Buenos Aires–Cordoba–Mendoza corridor	Value-added, local, national, and international phone, trunking, and Internet services	Medium-large private company focused on wireless telecommunications services (100+)
8. Theta (1990)	Buenos Aires–Cordoba–Mendoza corridor	Value-added, public, local, national, and international phone, Internet and video services	Medium-small private company that evolved from being a cable operator to offering cable-based Internet access (20)
9. Iota (n/a)	Principally the Buenos Aires–Cordoba–Mendoza corridor	Transmission services	Medium-large private company focused on providing long-haul connectivity to companies or other carriers (100+)
10. Kappa (2001)	Buenos Aires	Transmission services	Medium-small private company focused on providing Internet access to companies and residential users (100+)

Table 2. Business Strategies in the Argentinean Telecom Market.
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Table 2. Business Strategies in the Argentinean Telecom Market.

Type of Services	Regulatory Environment	
	Interconnection (poorly enforced)	Licensing (limited entry)
Infrastructure	<p>Survival</p> <ul style="list-style-type: none"> Invest for survival. High-risk strategy that relies on alliances, market pooling, and significant marketing 	<p>Slow Modernization</p> <ul style="list-style-type: none"> Conducts basic upgrades and experiences low pressure to invest
Services	<p>Infrastructure Capitalization Diversification</p> <ul style="list-style-type: none"> Promote “local” services (decrease interconnection requirements) Transfer the higher costs to the final customer Diversify into complementary products and services 	<p>Diversification & Customization</p> <ul style="list-style-type: none"> Circumvent regulation to provide services Find new, unregulated niche markets that are unattractive to incumbent carriers

company’s existence. This happens when a smaller entrant is unable to obtain favorable interconnection terms. Under these circumstances, the company is forced to build its own network. The strategy requires a major investment and learning for a small company to be able to install a new infrastructure successfully.

Slow modernization (6 companies). In an environment where entry is difficult, one would assume that the carrier would be protected from competitors, and that this would be a perfect opportunity to invest in alternative infrastructures. However, given economic and political uncertainties (low and weak demand, and the unpredictability of regulatory decisions and regimes), companies instead choose to slowly upgrade their existing infrastructure in basic ways—simply to keep up with demand and technological advances happening in foreign markets.

New Service-Type Strategies

Infrastructure Capitalization/Diversification (6 companies). When interconnection is difficult to obtain, carriers try to leverage their existing investments. These operators may have their own infrastructure, or they might have obtained some in the past from an incumbent carrier. Given the difficulty of obtaining network access, they try to expand their current service offerings using their existing infrastructure. In short, they try to capitalize those network segments to which they do have access.

Diversification/Customization (6 companies). If a company finds it difficult to obtain an additional license to expand its basket of services, it tries to divert regulation by offering unregulated services and offerings, or simply operates under another company and even illegally. It also looks for services that differentiate it from its competitors, but through non-telecom-related services, such as customer care.

In the following sections, we present evidence of these four strategies from the interviews with small companies that we used to generate this taxonomy.

A. Survival

For some of the companies, particularly MSMEs, confronting lack of access to infrastructure is a matter of risking their existence. Negotiating with incumbents normally results in the incumbents’ imposing economic and technical conditions unfavorable to these small players. Due to their limited economies of scale, and because of little, if any, regulatory intervention, small companies lack the capacity to influence negotiations. This puts their existence at risk, even in local, monopolized markets. This situation is more evident in zones away from the Buenos Aires-Cordoba-Mendoza corridor, where there are no options other than the incumbent. The Gamma company described its negotiation as follows: “They [the incumbent] were our only option in those days. They requested a minimum contract of 10 years, a defined and indexed tariff, and a clause that would block VoIP intercon-

nection." Because it was impossible to accept those terms, they opted for an alliance with other small companies in the region and, through a joint venture, invested in infrastructure that gave them access to the larger city of Bahia Blanca, which had more options for interconnection. As a result of this investment, they were able to obtain better interconnection terms, with costs close to one-fifth of the original amount proposed by the incumbent.

Similarly, Epsilon, which is located next to the southernmost province in Argentina, has set up its own infrastructure using satellite connections. It avoids markets where the incumbent is located or where its offerings are more expensive than an incumbent's. It has built a fiber network and connected to the backbone through one of the incumbents. Because Epsilon does not lease local lines from the incumbent, it is able to provide inexpensive Internet telephony services to its clients.

In this way, some of these companies have come up with creative strategies to overcome the incumbent problem. They form alliances with other small companies or provide services to several small communities (those with fewer than 50,000 inhabitants) to expand their resources and client base when investing in infrastructure. Such investments, made as a result of survival decisions, are, like Gamma's, usually oriented to supply capacity requirements.

In Gamma's case (low traffic and marginal benefit), there was no reason for the incumbent, beyond eventual enforcement from the regulator, to provide better interconnection conditions. The limited economic capacity of the local market did not allow Gamma to pass high costs to the consumer, as that would have eliminated the demand for services. Generating an alternative, low-cost infrastructure, even with some technological limitations, was the only feasible solution for providing communication services, including Internet access, at an affordable price.

Eta, one of the larger companies, was able to survive in the market by installing its own microwave towers, given that the interconnection charges made it unprofitable for them to use the incumbent's network.

Zeta was another company that invested in infrastructure soon after liberalization. Its survival relied not only on having the infrastructure, but also on convincing potential clients to switch away from the incumbents. As they indicated, "We had to invest

heavily in the marketing of our products and brands. . . . [I]t was a bit of an educational campaign [to let consumers know] that we were a viable alternative."

Some of the companies interviewed (Beta, Delta, and Epsilon) mentioned that there were several localities in the north and south of Argentina that had no networks that supported broadband, or in some cases, had no phone services at all. This situation was exacerbated by the fact that a planned universal service program was never implemented. This forced any provider that wanted to offer telecommunications services to provide its own local infrastructure and access to affordable backbones. Epsilon, for example, developed an entire public telecommunications service in a rural area where there was limited incumbent infrastructure. The risks associated with investing in infrastructure were exacerbated by the conditions that the incumbents normally request for interconnection, as well as by the fact that there was little intervention from the regulator. An interviewee from Beta commented, "[If we complain to the regulator,] any process would take two to three years to get resolved. We could not afford such a wait." For several of the companies interviewed, investment in infrastructure was motivated by a social need of little value to potential competitors.

Companies that relied on this strategy were forced to do so because unfavorable interconnection terms would have made it difficult for them to provide affordable services to their potential clients. The high prices and harsh terms increased their costs and restricted service provision of emerging services, such as VoIP. Their strategies, which consisted of investing in infrastructure by acting alone, by aggregating markets, by forming alliances, or by mounting marketing (educational) campaigns, enabled them to exist in the market, which is why we call this the *survival strategy*.

This strategy differs significantly from any of those proposed by Porter because the goal for these Argentinean companies was not necessarily to be better than competitors, but simply to survive in a market that poses significant challenges. Infrastructure investment was not intended to provide specialized or low-cost service; it was necessary for the business to exist.

**B. Infrastructure Capitalization/
Diversification**

Another company strategy generated by poorly enforced interconnection regulations is related to the services provided to the final customer.

The development of either new services or improvements to existing ones, therefore, is limited by the existing network, and they are not offered at all if the company does not have network access. In this regard, Iota stated: “If someone invents a new service not considered previously, it may or may not be provided [due to interconnection limitations].” Companies that do come up with innovative strategies made statements such as this: “We look for services that do not depend on obtaining interconnection” (Gamma). Under these conditions, companies like Gamma and Zeta have promoted services that will keep traffic within their network, such as a plain tariff for phone services for their own clients, voice messages, and other mailbox services. However, they are conscious that one of their limitations is the incumbent itself: “[W]e could provide VoIP [and other services], but we have a contractual limitation [with the incumbent] that prohibits us from doing so” (Gamma).

A third and more common strategy resulting from poorly enforced interconnection regulation is the provision of products and services, in many cases, beyond what could be considered core. Small companies venture into the provision of complementary products and services, such as hardware sales and network and software services, which are offered in conjunction with telecommunications services as a way to generate additional revenue. Companies like Beta, Delta, Epsilon, Zeta, and Theta present examples of this. Beta officers mentioned that they complement their income by selling hardware; by installing and procuring networking equipment, such as the cabling of buildings; and by providing hosting services, including billing and certified e-mail, which, the company argued, could be used as evidence in court. Delta sells hardware, networking support, and video security services for local companies. Epsilon also sells hardware. Zeta installs video security systems that allow clients to access cameras via the Internet. In conjunction with their connectivity, Zeta provides e-commerce services, thanks to an alliance with another MSME. Alpha provides a very specific niche value-added service—telephone chat sessions that have national

and even international clients, while Theta has developed commercial, customized software that uses its telecommunications services. These are strategies that capitalize on those networks to which the companies do have access. There is an emphasis on generating new services that complement their existing revenue. As the Beta representative stated, “Reinventing oneself is what lets small companies survive against the big ones.”

Even though there is a positive effect related to the availability of these services in these markets, it is unclear whether the dispersion of focus results in positive developments and improvements in telecommunications services. These companies, unable to get better interconnection terms and limited by their contracts, channel their ingenuity toward complementary services that take advantage of the networks they already have, and they expand their offerings with related products that generate additional revenue. Initiatives such as trying to keep traffic within their own networks allows them to capitalize on their existing infrastructure at lower costs, while the diversification of their service gives them additional revenue and shields them, to a certain extent, from the uncertainty of the regulatory environment they face.

Unlike Porter’s identified strategies, these companies rely not on a focused strategy involving a few products, but on a dispersion of product offerings, some of which are related, while others are a bit removed from the core business. If the objective of a company is to grow, having such a diversified portfolio may actually impede its success, because it may not be able to support all of these product offerings as it tries to expand. None of them, however, engages in any type of differentiation strategy that could set it apart, which makes them more, not less, vulnerable.

C. Slow Modernization

The Argentinean regulatory framework related to licenses is considered modern because of its technology-neutral approach and single-license model (Galperin & Cabello, 2008). However, failures in the implementation of the regulations (procedures) and licensing delays into the different categories of services have led to limited entry.

We found evidence that these circumstances had two negative effects on infrastructure investments. One was associated with limited competition, which

puts companies in a more reactive mode—responding primarily to customer and supplier requests or legislative requirements (Freel, 2000); the other, an absence of investments, was due to the complexity of the process and the length of time that it takes to get a license for a new service offering.

We found that companies do not expect much competition to emerge—except in areas located near the Buenos Aires-Rosario-Cordoba-Mendoza corridor. Under such conditions, business strategies related to infrastructure investments are primarily reactive: “We passed from analog to digital mode, and then ADSL [when the market demanded it]” (Gamma). “[If the technology] works then [we] will not change it; it is still evolving” (Alpha). “There are customers demanding [modern technologies]. [However], others accept less expensive technology [that solves their present needs]” (Kappa). Companies that operated as local monopolies expressed no interest in significant infrastructure investments unless their clients demanded them.

Soon after the market was liberalized, a few small companies facing the threat of new entrants decided to enhance their services. Zeta, for example, introduced flat telephone tariffs for their clients, something that was not offered by any other carrier at the time. Before they did this, calls were metered by the minute. Companies interested in infrastructure investment reported frustration with the length of time and the uncertainty associated with obtaining a telecommunications license or an authorization of service, which, they indicated, practically paralyzed any desire to invest. In this respect, companies noted: “It takes such a long time [to get a license] that we could not do any investment” (Gamma); “We have been requesting phone service authorization for more than one year and, right now, we are re-evaluating the feasibility of entry into that line of business” (Delta). In addition, in a dynamic technology environment, companies are reluctant to invest unless they are assured that they will be allowed into the market: “It is possible to invest only after getting the license . . . technology evolves, and by the time that you get the license approved, the proposed technology is obsolete” (Delta). There was reluctance among the companies we interviewed to invest when obtaining a license to capitalize the new infrastructure was so uncertain.

There are companies that have been in business

for a long time—like Alpha, with 26 years in service—that still rely on much of the equipment they had when they first started. When Alpha started, it used a mainframe to provide automated poll services and marketing; the same equipment is used today to enable social audio conferencing. As the owner stated, “If it works, we are not going to touch it.” In the beginning, Alpha used dial-up, but now it uses IP lines.

It should be noted that slow modernization is also due to the slowness of the regulator to issue a license. Gamma, for example, wanted to offer Internet service using its cable infrastructure, but it could not do it because it had not gotten a license, and interconnection regulations with the incumbent took a year. Similarly, Eta, one of the larger companies, would like to invest in broadcasting using the mobile technology it has, but because telephone carriers are not yet able, by law, to provide this service, they cannot do so.

We see, therefore, that companies have little incentive to invest and innovate because of an uncertain economic and political environment with little entry. There are few incentives to take risks by buying equipment or investing in infrastructure to provide new products or services, unless doing so is absolutely necessary. Those that do proceed generally do so because of a clearly recognizable demand for the service or because they wish to avoid becoming obsolete. Slow modernization, as indicated above, is also a result of the often excessive and uncertain length of time it takes for a regulator to issue a license or for an incumbent to grant interconnection.

Unlike the context faced by companies in developed countries, a context like Argentina’s, with its significant economic, technological, and regulatory uncertainties, leads to a set of strategies almost completely opposite to those proposed by Porter. Companies, instead of looking for opportunities to improve, actually delay improvements.

D. Diversion/Customization

A fourth set of strategies that we identified as resulting from difficulties in obtaining approval for a license (or even authorization for a new service) encompasses two approaches: 1) diversion from regulation, and 2) customization.

Under the “diversion from regulation” scenario, companies lacking a license find an alternative way

to provide services through other entities. Delta and Theta are examples: “[We] had to provide services for which we had no license under another company’s license” (Delta); and “We sub-rented our license to other companies” (Theta). Other companies have created entities to qualify for certain licenses: “Because here in Argentina cooperatives cannot offer cable TV services, we made an agreement with a cooperative for them to be able to offer it. The company is private” (Gamma). However, this alternative tends to create the additional and unnecessary administrative expenses entailed by running multiple independent companies under a single umbrella entity. Another strategy, implemented by Theta to circumvent license limitations, was to create an entirely different entity that allowed them to offer Internet access, which is considered a transport service, and which they were not legally able to offer as a cable TV provider.

A few companies opt for a riskier strategy: illegal operations. Even though it is not a common practice, some companies mentioned it as a “feasible” option: “Companies that could not obtain a license after four or five years were forced to work under another’s license, cancel services, or operate illegally” (Delta). In some cases, such behavior is even excused because of market conditions: “There are companies that operate without licenses that resolved a social need,” so the regulator is less rigorous with them (Iota).

Regarding customization, Beta commented: “[SMEs] stop being competitive if they provide commoditized products or services.” These organizations have realized they cannot compete with the larger players, as their scale and limited resources prevent them from obtaining cost advantages. Thus, they focus on products that are unattractive to incumbents and innovate through greater customization or more personal customer care. Closer communication with clients is a common strategy for these small firms. For example, Zeta’s slogan is “Closer Communication,” meaning that it is closer to its customers, with a “personal touch” (Zeta).

In light of the fact that larger companies are slower to adapt, “[SMEs] occupy smaller spaces that present opportunities for them” (Beta). They look for niches where incumbents have no interest. As explained by an officer at Zeta, “When an incumbent is going to attack a market, it is going to go for the \$10K clients, not the \$35 one.” Similarly,

Epsilon commented, “The incumbent does not invest because of lack of volume. A town of 50,000 people is not profitable.” While a large company may be able to offer its customers connectivity, it may not be able to provide on-site technical support, which is often needed in these remote communities that lack technical expertise.

We see here that companies work and develop strategies according to the context that they face. In this diversion strategy, they circumvent legal and regulatory constraints using ingenious business maneuvers, such as working under another company’s license, creating a different entity, operating illegally, or entering unregulated niche markets that allow them to operate.

Compared to the types of strategies that companies can use in developed countries with fewer regulatory inadequacies, these MSMEs spend much of their resources trying to overcome the obstacles they face. The strategies are, at times, not the result of a careful consideration of market conditions, but a response to challenges. In the case of Argentina, circumventing regulations was an unavoidable strategy for a company that wanted to stay in business.

These companies do have strategies that pertain to their customers’ needs, but regulatory circumstances drive them to the margins, unable to expand either the scope of their services or their geographic coverage.

5. Discussion

There are some important insights that we can glean from this study. First, these organizations, although immersed in such an economic and political environment—and perhaps accustomed to it—make decisions based on what they expect to happen in the future. MSMEs, like their large counterparts, need to consider whether they will face competition in the future, whether they will get access to the resources (in this case, infrastructure) that they need to operate, and whether they will be able to afford equipment upgrades they may need to introduce new products or services. It is clear to us from the data collected and analyzed that their business strategies are more reactive than proactive, and that their objectives are survival and the generation of enough income to remain afloat. Argentinian companies are engaged in what we believe to be sub-optimal business models: reactive, gradual,

defensive, and survivalist types of innovation that are unlikely to generate the economic benefits that economists associate with MSMEs that have the potential to grow and develop into larger entities.

Having identified a matrix of four strategies, we also found that a given company did not choose one strategy to the exclusion of another. In other words, these strategies are not mutually exclusive; in fact, they are complementary. Companies use them depending on where they find themselves in their business evolution.

In our opinion, creativity and productive business strategies are impaired by the inadequacy of regulation and regulators. We find that these companies, which face no competition, instead of taking advantage of this situation by investing and growing their businesses, are reluctant to do so because of regulatory uncertainties. We find that inadequate regulatory implementation and enforcement compel companies to invest at the minimum level necessary to survive.

6. Conclusions, Recommendations, and Limitations

In this study, we identified the business strategies of MSMEs in the Argentinean telecom sector, given the economic and political environments. We discovered that the current literature focuses primarily on developed nations, and that little attention has been paid to small and medium-sized companies that operate in riskier and more uncertain political and economic environments. We began by looking at the strategies identified by Porter, but we quickly realized that although there were similarities in the Argentinean case, there were also significant differences. In the case of Argentina, the business models we found related more to maintenance and survival.

Argentina was selected because of its comparatively modern and advanced laws and markets, and because it still faces uncertainties and risks—like any other developing nation.

Under these circumstances and, in particular, considering the less-than-perfect interconnection and licensing regime that governs entry, we identified four strategies related to infrastructure and service provision innovations. We termed these four strategies “survival,” “slow modernization,” “infrastructure capitalization,” and “diversion/customization.” Under a survival strategy, companies are forced to invest in infrastructure; otherwise, they

would cease to exist. Under the slow modernization strategy, companies, knowing that there is little or no entry, modernize their infrastructure only on an as-needed basis. Under the infrastructure capitalization strategy, companies unable to obtain interconnection focus on services they can provide with their existing facilities. Under the diversion and customization strategy, companies provide services through another company, or they develop new ones based on the licenses they already have.

We find that, for the most part, these companies use mainly reactionary business models that are the result of their circumstances, as opposed to more carefully designed strategies. Companies able to remain in the market adopt business strategies that allow them to escape competition by purposefully positioning themselves in areas where no competition exists, or by taking advantage of low-margin markets.

We recognize that the sample used to reach these conclusions is small, and further research is necessary to negate, verify, modify, or extend the results of this study. In addition, the study suffers from the inherent limitations of its scope—the Argentinean economic and political environment, and the telecommunications sector. We understand, however, that further validation research may need to extend the scope of the regulatory constraints and determine whether MSMEs in other sectors use similar strategies.

Given the creativity and imagination that these companies exhibit, it is clear that a stable and more predictable environment could enhance their operations and lead to more productive and innovative business strategies. ■

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