

Interconnection Regulation in Mexico

Martha A. García-Murillo
School of Information Studies
Syracuse University
Syracuse, New York
mgarciam@syr.edu
Tel: (315) 443-1829

James B. Pick
School of Business
University of Redlands
Redlands, California
james_pick@redlands.edu
Tel : (909) 748-6261

ABSTRACT

This paper identifies the factors that have allowed dominant carriers to maintain their monopolies in spite of the regulatory efforts to introduce competition. The paper focuses exclusively on interconnection because it is the element that allows non-dominant companies to introduce and maintain competition. It begins with a background on Mexico's environment of deregulation arising from the 1995 federal telecommunications law and resulting regulations and court rulings. Two existing frameworks and two others developed in this research explain the role of interconnection in the dominant/non-dominant carrier relationships: (1) asymmetric information, (2) capture theory, (3) minimum compliance, and (4) legal play. To make an exploratory test of these theories, the paper examines the Mexican case of relationships between dominant and non-dominant carriers.

Introduction and Background

The study presents Mexico's experience with interconnection. It includes an examination of the impact that regulation and competition have on the telecommunications infrastructure of the country.

In the history of telecommunications, regulation has played a key role in the industry's development. Soon after telephony began to grow in the early 1900s the presence of competing carriers led to the development of redundant infrastructure. Households had to have multiple wires from multiple carriers to talk with people that subscribed to networks different from their own. In the interest of developing a universal infrastructure instead of multiple networks, each profiting through its own customers, the government allowed one dominant monopoly to build the entire infrastructure of the country.

On the other hand, monopoly has posed difficulties for regulators and has not always resulted in the best infrastructure. Problems include the lack of incentives to continue innovation and upgrade the network as well as high prices for users. In the last fifteen years, as advances in technology resulted in the development of alternative infrastructures and the potential for competition, governments have deregulated the industry and allowed other carriers to enter both local and long distance markets.

In spite of the efforts by governments to promote competition, deregulation has not been easy. For instance, in the United States the Telecommunications Act 1996 has yet to produce effective competition for local residential markets. In Mexico, privatization of Teléfonos de Mexico (Telmex), the state carrier, and the 1995 "Ley Federal de Telecomunicaciones" (Federal Telecommunications Law) have not yet resulted in effective competition. One of the key elements for effective deployment of competing infrastructures is interconnection. Even though communication technologies have made the deployment of wired and other alternative wide area networks possible, few of the wired technologies have reached users. The incumbent carrier is still the only one that controls the last mile to the subscriber. Because it is neither economical nor practical to have all competing networks reach a given user, the interconnection solution prevents the need for multiple infrastructures. Because incumbent carriers have long benefited from being the sole providers, there has been little interest on their part to cooperate with potential competitors.

The goal of this paper is to analyze the factors that have allowed incumbent carriers in Mexico to maintain their monopoly status in spite regulators' efforts to

promote competition. We also examine the effects of these factors on the deployment of infrastructure for advanced services.

Frameworks of Analysis

Regulation is a process that starts with a cause and ends with monitoring and enforcement rules. Thus, to determine why regulation fails, one cannot look only at factors after the rule has passed but to the entire process. The effectiveness of a rule begins from the process of policy formulation.

Several scholars recognize three stages in the policy making process: (1) policy formulation, (2) policy implementation, and (3) policy evaluation. At each of these steps there are variables that contribute to the success or failure of a rule. We analyze the Mexican case for only the first two stages. This paper itself can be considered to be part of the policy evaluation stage.

One element that is common to all of the policy stages is information asymmetries. For this paper, *information asymmetry* is defined as the regulated having more information than the regulator and they are not necessarily willing to share it. The problem of information asymmetry can lead to other problems, all of which can contribute to the success or failure of a rule.

At the policy formulation stage asymmetric information in the market can force regulators to develop rules. In the context of interconnection, incumbents have more information than the new entrants and can impose high costs and provide low quality. Without alternatives, this can lead to the absence of competition.

Asymmetric information in the regulatory realm can result in companies not providing information to the government. They also may *manipulate information* in order to present scenarios to regulators that favor them. Asymmetric information can also lead to *capture*, which refers to the regulated compromising the government's regulatory responsibilities. Because the government has to rely on information provided by carriers, the regulators eventually see the problem in the same way that the industry does. At the policy implementation stage, lack of information limits monitoring activities and

enforcement by government officials. Without these two government tools, the regulated may *minimally comply* to the rules or not comply at all.

At this point the reader may ask why or how these factors were selected as explanatory variables. The selection of variables resulted from an iterative deductive inductive approach. This is appropriate, because this study is exploratory and based on limited prior research without an accepted conceptual theory. Initial analysis of interview data indicated that information or lack thereof was central to the formulation and implementation of Mexican government telecommunication rules. From this initial exploration, we then did a literature review to determine how scholars have treated information asymmetries.

Each of these problems is further explained in each of the sections below:

Table 1
Effect of Asymmetric Information on the Policy Making Process

Regulatory stage	Term	Explanation	Outcomes	Scholarly work
Policy Formulation	Information manipulation	Since government officials rely on companies for information, they can be misled by information that has been manipulated to create scenarios favorable to the firm	- In the presence of a monopoly information manipulation is more likely - The more homogeneous the industry's interest are the greater the likelihood of information manipulation	Ackert and Church (1998) Gal-Or (1986) Ziv, (1993).
	Capture	Because the government relies on the industry for information, regulators begin to think like executives in the industry, leading to rules that favor the advocate companies	- The presence of a monopoly will increase the probability of capture. - The more homogeneous the interests of the industry, the greater likelihood of capture	Stigler (1971) Posner (1974) Bernstein Peltzman (1976) Teske (1991) Roberts and Kurtenbach (1998)
Policy Implementation	Minimum compliance	Because regulators lack the resources to verify compliance, they are not able to enforce rules.	- The higher the benefits over the costs of a violation of a rule the lower the compliance. - The lower the resources of the government to monitor, the lower the compliance	Posner (1974) Ullman-Margalit (1977) Shelanski and Sidak, (2001).

Asymmetric Information and Manipulation

Asymmetric information is the central concept of this paper. New institutional economists have recognized the existence of asymmetric information in bargaining agreements between buyers and sellers (Akerlof, 1970). The seller in a contractual agreement has more information about a product or service than the buyer. Buyers are

only willing to pay for the average quality of goods sold, which is lower than the value to the seller of higher quality goods. Under these circumstances, sellers only offer lower quality goods. Although Akerlof's article on asymmetric information was not set within the context of legislation, his insight is pertinent to this process. Legislators work with limited information in the drafting of laws. The regulated have more information and are more knowledgeable about their industry than government officials (Marino, 1998). Thus, carriers can influence regulators due to their lack of information.

Simon (1982) states that individuals, although rational, cannot evaluate or even be aware of all of the options available to them. There are two reasons: (1) individuals cannot obtain all of the information they need, and (2) each additional piece of information to evaluate options entails a cost. The more detail required, the greater the cost of gathering and evaluating information. This cognitive limitation is known as bounded rationality.

In this paper, we begin by determining the effect of asymmetric information on monopolized markets in the telecommunications sector. Next, we examine the effect of asymmetric information on regulation.

Asymmetric information in the telecommunications market

In the case of interconnection of telecommunications services the incumbent, who is the dominant seller of services, has more information than competitors needing to interconnect or willing to cost share the infrastructure. In the "market of lemons," asymmetric information led to the predominance of poor quality goods (Akerlof, 1970). In a monopolized telecommunications market if the quality of services is low, the buyer would therefore be willing to pay a lower amount. As in the market for lemons, the problem is that, in the absence of alternatives, competitive carriers do not have any other suppliers from which to buy. The incumbent in turn does not need to allow interconnection, resulting in no entry at all.

Assuming that competitors know the quality but not the cost, the incumbent could potentially inflate the actual costs and request a higher price for interconnection. Under these circumstances the buyer will not be able to afford such prices, resulting once more

in the elimination of competition. Under the traditional theory of asymmetric information, market failure occurs when low quality products or services drive out products of higher quality. Even though this is a suboptimal outcome there is still a market where competition is present. This is possible because the traditional theory assumes that there is no dominant firm (Akerhof, 1970). In a market with a monopoly, asymmetric information does not result in a suboptimal market of low quality goods. Instead the information advantage of the monopolist allows it to maintain its single firm status. In telecommunications markets such as telephony and cable, where there is a dominant carrier, asymmetric information allows an incumbent to effectively reduce and perhaps eliminate the presence of competitors due to its ability to charge higher prices in interconnection agreements. This unwillingness to cooperate on the part of the incumbent increases the need for regulation.

Asymmetric information in regulation

It is not surprising that the regulated have more information than regulators. Even when a regulated monopoly is obliged by law to provide information to government officials it is difficult for them to verify its accuracy. Under Akerlof's theory, the main cause of market failure is concealed information while in a monopolized market information concealment is only one aspect. The monopolist, knowing that a regulator would not be able to verify the accuracy of information, can manipulate the data to its advantage. The reason why the regulator cannot verify the information is because there are no other firms on the market from which to obtain or compare data. This is consistent with research in financial markets. Ackert and Church (1998) find that subjects exploit their informational advantage and earn greater profit than uninformed agents. Studies in the information transfer field of economics indicate as well that in an oligopolistic market companies that compete in price tend not to share information on their costs (Gal-Or, 1986) and may present misleading information (Ziv, 1993).

In a monopolized market, therefore, the regulator faces two problems: asymmetric information and manipulated information. The effect on the market is continued dominance by the monopolist.

Capture Theory

Capture refers to the manipulation of regulators by the regulated to the point that the regulator ends up dominated or “captured” by the regulated enterprise. There are several arguments explaining the factors that lead to capture. Relatively extreme views are held by Marxian scholars who argue, as articulated by Posner (1971), that “[b]ig business—the capitalists—control the institutions of our society.” This approach is often dismissed due to lack of evidence. Political scientists have presented a different explanation. In the book *Regulating Industry by Independent Commission*, Marver Bernstein first proposes a process by which a regulatory commission begins as an independent entity. As it becomes more established its interests more closely resemble those of the industry it regulates. Subsequent studies by Stigler (1971) and Peltzman (1976) went even further to argue that regulation was initially in favor of industry because of the political and electoral power that some industries have over regulators. In general terms, capture theory acknowledges that the level of power that some companies have over government officials effectively leads them to make decisions that benefit the corporations.

In capture theory companies are able to obtain privileges that they want from the government because of the effects that they have on them. There are several factors that companies use to obtain benefits from government. Campaign contributions, economic benefits to the population, and, in the case of communication related firms such as the press, access to media can be strong motivators for politicians to be responsive to their demands. In the original capture theory the assumption was made to consider the parties seeking regulation as homogeneous groups, all of which shared the same objectives. A study by Teske (1991) about the influence of interest groups in the regulatory decision of state public utility commissions indicates that government officials are less likely to be “captured” when there are many parties. Similarly, dominant corporations tend to have more influence on government decisions. A related argument was made by Roberts and Kurtenbach (1998) who argued that the strength of the economic interests and demands

of a profession relative to their competing interest groups can explain differences in the levels of regulation. An example is limitation of entry through certification.

In the Mexican context, Telmex provides a good case to explore this theory because of the way the company moved from being a government owned organization to a privatized monopoly and now a dominant firm facing some competition. Telmex generated large revenues for the government when it was state owned and then through its sale in 1990. Telmex is now one of the ten largest companies in Mexico (Expansion, 2001) and is an important economic power that is likely to have an even greater influence on the economy as it extends its services.

Minimum Compliance

Regulated companies often face situations where rules imposed by government force them to do things that run counter to their economic and strategic interests. This is particularly true when governments impose command and control rules instead of providing incentives to make companies change their behavior to suit a mixture of their interests as well as those of the government's (Mitnick, 1980). A drawback of command and control regulation is the information required by officials to enforce the law. The information that they need is often not available or it requires resources unavailable to government agencies. Even when the agency has enough resources, the regulated companies that are requested to provide this information may not do so, or may give insufficient or inaccurate data. Companies aware of government limitations for enforcing rules can simply comply with those aspects of the law that government officials can more easily detect.

Lack of compliance or minimum compliance can occur because of two factors. First, the government may lack of information about violations and the inability to enforce. In a situation where the regulator can determine a company's lack of compliance, the firm can simply provide reasons for why it has not been able to comply. They can do this because of the inability of the regulator to verify the accuracy of the reasons provided by the company. This is consistent with Posner's (1974) argument

about the daunting tasks imposed on regulators, which lead them to fail in their efforts to regulate.

Minimum compliance by the incumbent is an even greater problem in a monopolized market because there are no competitors to indicate to regulators when the monopolist has not fulfilled obligations. In a competitive market, regulators could potentially verify the accuracy of information by comparing it with that provided by other companies. In a monopolized market this is not possible and the government depends almost entirely on the information provided by the firm. Because of this, a monopolist is likely to comply only to the point where the regulator is able to obtain information.

The second element of minimum compliance under monopoly circumstances is the inability of the government to effectively implement sanctions. Ullmann-Margalit (1977), for example, shows how penalties are the primary mechanism the army has to make soldiers remain at their posts, even when their lives is a stake. This “mortarman’s dilemma” points to the need for penalties for individuals to comply. In regulated industries that do not experience monopoly, governments can confiscate the licenses of companies that have not complied with their regulatory obligations. With a monopoly, government officials cannot take the license away because the monopolist is the only one providing the service or product. Financial penalties for monopolies may or may not be effective in forcing the monopolist to comply. Generally when penalties are imposed on regulated companies, these are already specified in the law. It is therefore possible that these fees are inadequate to change the behavior of the firm. The inadequacy of fees could result from the fact that companies are different. While for some companies a certain penalty could be adequate, for others the impact could range from negligible to bankruptcy. Fees are calculated, based on an “average firm.” Over time these penalties, if stated in specified monetary amounts, could no longer be sufficient to provide a disincentive.

The monopoly perspective on compliance is influenced by self-interest. A monopolist under the threat of being sanctioned can perform a simple cost-benefit analysis to determine whether it is in its best interest to comply or not. Generally if the benefits of non-compliance are larger than the penalty, the monopolist is not likely to comply. This is consistent with contractual law where an “optimal damage award is one

under which breach will occur only if the overall gains to the parties is greater from breach than from performance” (Shelanski and Sidak, 2001). Even though a monopolist could decide to repeatedly not comply, the monopolist nonetheless needs to maintain friendly relations with regulators. Regulators can implement rules that hurt the monopolist’s business. Because of this the monopolist has an incentive to comply.

Legal Play

Even in the fairest of legal systems, lawsuits can be used as a tool to delay an action that can negatively affect a company’s interests. *Legal play* refers to the use of lawsuits as a mechanism to create delays in actions that negatively affect a target firm. Legal play is possible because of the lengthy period needed for the legal system to sort out facts and reach a verdict. Normal delays in the legal system can reward legal play. For the firm, this requires that the costs of a lawsuit be lower than the cost of compliance.

The concept of legal play is somewhat aligned to that of “Strategic Lawsuits Against Public Participation” (SLAPP). This term, coined by Pring and Canan (1989), refers to legal actions with no reasonable basis or merit that corporations take to stifle participation in public policy. SLAPP has often been identified with the environmental and real estate sectors violated an agreement made with the government or community. In reaction, the general public engaged in demonstrations or activities aimed to stop the violation or to attract the attention of government officials. Targeted companies then sue the protesters. Unable to pay for the lawyers during a lengthy legal proceedings, the protestors eventually settle their lawsuit and cease their protest. The implication is that such lawsuits against public participation can discourage peoples’ abilities and rights to protest if they believe that they will be sued.

The SLAPP phenomenon has been controversial. Under the legal play concept, in certain market settings, an incumbent firm can strategically use the courts to delay a trial as a way to buy time without competition. In this paper’s context of telecommunications regulation, court challenges often have taken years to resolve in Mexico.

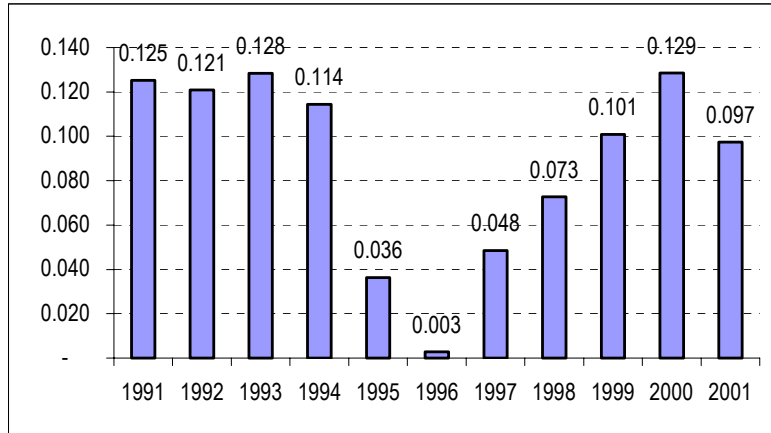
Interconnection in Mexico: Evolving Issues 1990-2002

As a result of its 1990 privatization, a consortium of domestic and foreign investors led by France Telecom and Southwestern Bell purchased Telmex. Its concession title obliged the company to comply with network expansion in both urban and rural areas and fulfill quality of service requirements. Because the company was given a period of exclusivity for basic services, it was subject to price cap regulation. The exclusivity period applied only to long distance. However, due to cross subsidization, the prices for local calls were very low, so that potential competitors did not find it profitable to enter.

The purpose of this exclusionary period was to allow Telmex to mature and grow. It was required to expand the number of lines by 12 percent per year. Figure 1 shows the annual growth rate of telephone lines in Mexico during the privatized period. It is evident that Telmex largely fulfilled its mandate with the exception 1995 to 1997, the years following a severe financial crisis in Mexico. The company was also required to reduce the waiting time for new installation requests from over one year to 6 months starting in 1995 and then to reduce waits by one month every subsequent year. Telmex did achieved this in some regions but not in rural areas. The concession title for Telmex had some interconnection requirements, specifically that the company should install interconnection equipment to allow non-Telmex public or private lines to be connected. In these cases, interconnection equipment was still to be authorized by the regulator.¹

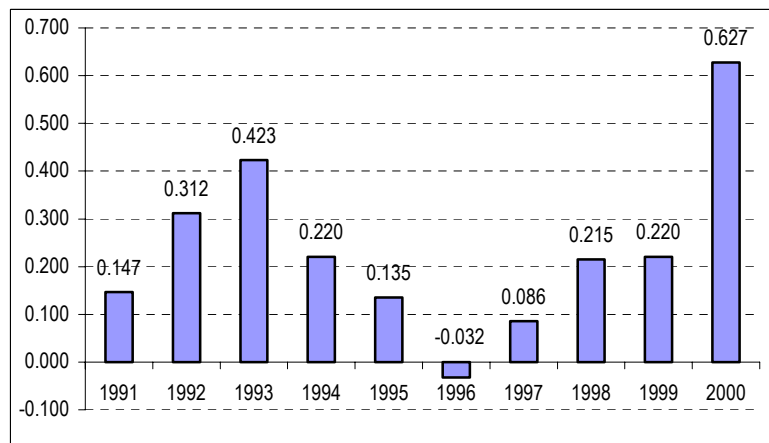
¹ *Modificación Al Título De Concesión De Teléfonos De México, S.A. De C.V.* [Website]. Secretaría de Comunicaciones y Transportes, February 2, 2001 1990 [cited June 1 2002]. Available from www.cft.gob.mx/frame_juridico_resoluciones.html.

Figure 1
Annual growth of telephone lines in México



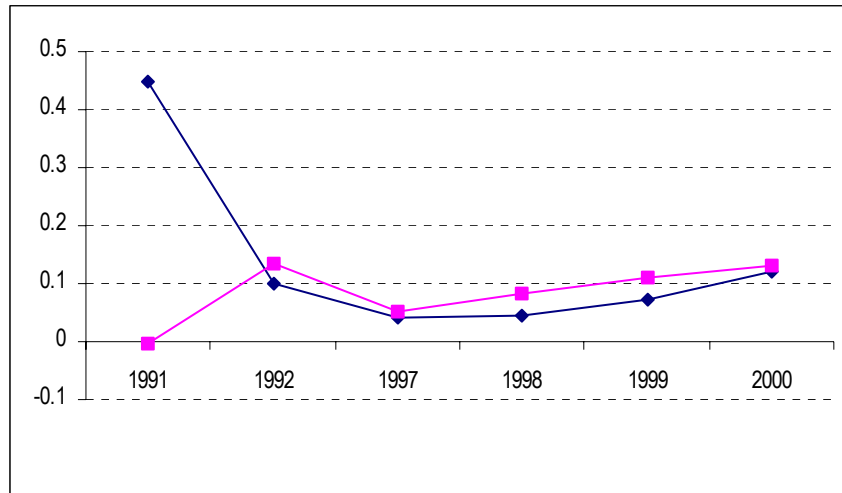
Source: ITU World Telecommunication Indicators, 2002

Figure 2
Annual growth of public pay phones



Source: ITU World Telecommunication Indicators, 2002

Figure 3
Telephone lines growth main city and rest of country



NOTE: ■ Rest of country ◆ Main city

Source: Own data from ITU World Telecommunication Indicators, 2002

The Mexican government passed the 1995 Telecommunications Law that established the framework for an openly competitive telecommunications industry. The law was positioned to meet world standards at the time. Competition was scheduled to begin in 1996. At the time of privatization, the Subsecretariat of Communications and Technological Development of the Secretariat of Communications and Transportation (SCT) was the agency in charge of regulating the industry. In August 1996, this Subsecretariat transferred some of its functions to the Federal Telecommunications Commission (COFETEL), which had originated from the 1995 Telecommunications Law. COFETEL, although separate from the SCT, is not completely autonomous because its budget, sanctioning functions, and power to grant licenses to operators have remained under the control of the SCT. COFETEL's main functions are implementation and coordination of the law, spectrum management, and auctions.

As observed through interviews of several COFETEL officials, the Commission lacks power. Below are some of the statements made in the course of the interviews:

- “In the negotiations of the upcoming telecommunications law, COFETEL made a proposal that focuses on the greater autonomy and capabilities of the Commission”²
- “Another problem is that COFETEL is controlled in its operations by SCT”³
- “COFETEL today does the concessioning but its rights here are limited and confusing”⁴

Members of the Commission itself would like greater autonomy and capabilities.⁵ In one report about the establishment of the COFETEL, a journalist published excerpts of a conversation that took place between Javier Lozano, then subsecretary of the SCT, and Senator Emilio Goicoechea, then a member of the Transport Infrastructure and Highway Systems Commission. In their exchange it was clear that Goicoechea wanted the COFETEL to have greater autonomy while Lozano wanted it to be subordinate to the SCT:⁶

Goicoechea: “We consider that the Federal Telecommunications Commission should attain independence and autonomy, not only technical but also operative, so that is able to fulfill impartially its social objectives.”

Lozano: “According to the Federal Telecommunications Law, the Commission should be a decentralized organ of the Secretariat. Such a commission according to Article 17 of the Federal Public Administration Law is hierarchically subordinate to the Secretariat of the State.”

COFETEL was planned for in the 1995 the Federal Telecommunications Law. As was stated by one of the interviewees, the law was intended to serve as an example for other nations. The law provided the government guidelines to be followed once competition began the following year. It recognized the importance of the private sector and the participation of foreign capital in the development of a strong telecommunications infrastructure. COFETEL is an independent agency in charge of telecommunications regulation and gathering public information. The law regulates telecommunications networks including satellite connections as well as the allocation of spectrum.

² Arreola, Jorge. Personal interview, December 3 2001.

³ Carral-Cuevas, Alonso. Personal Interview, November 20 2001.

⁴ Rios, Ricardo. Personal Interview, November 12 2001.

⁵ Personal interview.

⁶ David. “Colisiones.” *RED*, October 1 1996.

As Goicoechea stated “we cannot be improvising every few years.”⁷ The 1995 Telecommunications Law in Mexico was proposed by the SCT with the help of experts and once the Congress passed it, the SCT was supposed to issue rules for its implementation. A year later these rules had not been issued and, according to Goicoechea, “the reason why the law has been late is because many of them [congressmen] do not have any previous experience. Everything that these officials are doing is being done for the first time and they are afraid of making a mistake ...”⁸ The operators and even some regulators have questioned the effectiveness of the law. With respect to the law and the legislators who designed it, Goicoechea states that legislators need to know more about the telecommunications sector to deepen their understanding of the issues established in the law (David, 1996). The constant change of legislators stems from six year term limits. This means that once some knowledge on the matter has been accumulated, it is soon lost through elections.

The interconnection issue in Mexico was established in 1989 with one of the first cellular operators in Mexico, Iusacell. At that time, Telmex and Iusacell had exclusive market rights and the government had not yet issued interconnection rules. Formalized interconnection regulations were specified in the 1995 Telecommunications Law as a government effort to modernize the country’s infrastructure. Chapter IV, Section I, of the law is dedicated to the issue of interconnection. In general terms, the law specifies that interconnection should be nondiscriminatory and the carriers themselves should negotiate the terms of interconnection. They have 60 days to reach an agreement. If after that period they have not settled their differences, they can ask the regulator, originally the SCT and later COFETEL, to make a decision. The law specified that competition would occur in August 1996. Therefore agreements for interconnection needed to be signed much earlier.

In January 1995 the first carrier negotiations began. They included Avantel, Cableados y Sistemas, Investcom, Iusatel, Marcatel, Telmex, Telnor and Unicom. This was the first negotiating attempt for interconnection in Mexico. It is not surprising that at the time these carriers could not reach an agreement. Because COFETEL had not yet

⁷ Aldaco, Yolanda. “Los Legisladores Frente a La Ley De Telecomunicaciones.” *RED*, September 1 1996.

⁸ Aldaco, Yolanda. “Los Legisladores Frente a La Ley De Telecomunicaciones.” *RED*, September 1 1996.

been established, the parties submitted a formal request for a decision to the SCT. In these negotiations the carriers had to determine the tariff for interconnection as well as the competitive carriers contribution for the upgrade of the infrastructure. In these negotiations TELMEX wanted the interconnection charge to be U.S. \$0.145 per access minute of interconnection while the new entrants offered U.S. \$0.005 cents. Similarly Telmex wanted the new entrants to pay U.S. \$1.6 billion for the one time expense for the upgrade of their network to accommodate competitors. This amount was rejected by the other carriers and thus became another point of contention with Telmex that they could not resolve.

Given the formal request the SCT then issued the first interconnection resolution that set the tariffs for interconnection. The resolution specified an interconnection rate per minute of \$0.190 pesos (U.S. \$0.0257) in tandem cities and \$0.180 pesos (U.S. \$0.0243) for non-tandem cities. Those tariffs were scheduled to change in 1998 to \$0.73 pesos (U.S. \$0.0987) for tandem cities and \$0.64 (U.S. \$0.866) for non tandem cities. In this resolution the SCT also indicated that competing carriers would need to pay Telmex 58% of the inbound international revenue, in addition to the interconnection rate. This fee was assessed on competitors because it was assumed that international traffic had to pass through the Telmex/Telnor network. The resolution also specified that the SCT would select an outside expert to calculate the costs associated with the Telmex infrastructure upgrade to accommodate new entrants.⁹

Jorge Arredondo, from Select IDC, commented that Telmex had requested amounts of USD \$2,700 for the upgrade of each of its lines while the international average for new lines is \$1,500. In his opinion the higher cost was related to the replacement of old technologies that have not made any profits for Telmex.¹⁰

Soon after SCT issued the resolution all of the carriers criticized it. Competitors argued that the tariff favored Telmex, and Telmex argued that the tariffs gave 75% of the revenue to the new entrants. The press as well as one of the study interviewees stated that the tariff was established to maintain Telmex's value in the Mexican and U.S. stock

⁹ "Resolución Administrativa Para La Regulación Tarifaria Aplicable a Los Servicios De Interconexión De Redes Públicas De Telecomunicaciones, Autorizadas Para Prestar Servicios De Larga Distancia." Secretaría de Comunicaciones y Transportes, 1996.

¹⁰ Arredondo, Jorge. "Mexico, Un Mercado De Telecomunicaciones En Transición." *RED*, May 1 1996.

markets and to prevent a decline of more than 30% in its revenues.¹¹ Other interviewees explained that an inexperienced regulator is more likely to listen to a powerful and wealthy company.¹² Another criticism of the resolution was the lack of transparency on the part of the authorities. Officials from the carriers interviewed, did not know how these charges and the percentage were calculated. Similarly, a COFETEL official stated that “many facts are suppressed from public view – it is hard to have all of the information in Mexico. Public servants cannot write about anything while they are in office.”¹³ These types of incidents around tariff resolutions suggest that there may have been capture of government officials.

Once Telmex had issued its tariffs as required in the Interconnection Resolution, the company indicated that the interconnection rate specified by the authorities did not cover all interconnection costs. It indicated that non sensitive interconnection elements such as ports, links and collocation points were complementary and thus not subject to regulation. In spite of a complaint filed by all non-Telmex carriers and COFETEL about Telmex tariffs, Avantel signed an interconnection agreement with Telmex in October 1996. In response to the complaints, COFETEL held a public hearing that December in which the competing carriers expressed their concerns about the rates. During this hearing an interim rate was determined but, because it was not enforced, Telmex billed the extra charges. COFETEL later issued another resolution to formalize the Telmex position, and so the interconnection rate was subsequently increased.

Avantel filed several amparos¹⁴ (lawsuits) against COFETEL arguing that the resolutions violated constitutional rights and international law. Specifically the company complained about the lack of transparency and explanation in the calculation of both the rates and the 58% surcharge on inbound international traffic. This lawsuit lasted for more than a year and to a certain extent helped competing carriers because they benefited from decisions made in favor of Avantel.

Lack of information disclosure occurred in the calculation of costs for the upgrade of Telmex’s network. Telmex intended to pass on some of these costs to interconnecting

¹¹ Orozco, Victor. “Larga Distancia: La Sct No Dejo Satisfecho a Nadie.” *Petroleo y Electricidad* 1996.

¹² AMITI, Official. Personal Interview, November 20 2001.

¹³ Officer, COFETEL. Personal Interview, Dicember 3 2001.

carriers. As was indicated in the Interconnection Resolution, the SCT contracted an independent party from the United States, Bellcore, to make these calculations. As stated by the press, Bellcore's original upgrade cost estimate was U.S. \$250 million.¹⁵ Carriers later complained that even though the report was given to the SCT in February it was not available to them until July.

The amount was later questioned. According to Avantel, Bellcore calculated this amount as U.S. \$230 million. Telmex officials, on the other hand, later indicated that they had never seen such an amount.¹⁶ When the SCT issued the Special Projects Resolution, the amount that the authorities specified was U.S. \$422 million. The difference between the Bellcore and SCT amounts occurred because the latter included two additional elements: signaling and numbering, which were not originally specified as part of the infrastructure upgrade. According to Avantel, Bellcore did not consider Signaling (SS7) as an interconnection issue. It was instead a technology issue that would benefit Telmex, enabling it to provide more sophisticated services. The numbering issue was related to a user's ability to dial up to 22 digits if he needed to make an international call. This again was not considered to be part of interconnection. Of the U.S. \$422 million charge only 15 percent was to be divided among the nine carriers that originally requested interconnection.

The distribution among carriers of this payment was determined according to their participation in the market. This turned out to be another point of controversy. The problem was that market participation was determined based on the presubscription ballots that took place at the beginning 1997.¹⁷ At the time the distribution of payments was calculated, the first phase of presubscription had just finished. Telmex obtained 50 percent of the ballots, but this did not reflect their actual market share, which was 75

¹⁴ In Mexican legal terms an amparo is a lawsuit against government agencies for violations of the constitution.

¹⁵ Cortes, Maricarmen. "Desde El Piso De Remates." *El Excelsior*, September 22 1998. This amount has been reported also as \$280 million: Cortes, Maricarmen. "Dese El Piso De Remates: Las Razones De Amparo De Avantel." *El Excelsior*, July 28 1997.

¹⁶ Gorraí, Jorge, Luis Iglesias, and Rodríguez Sergio, Telmex officers, Personal Interview, April 11 2002.

¹⁷ With the advent of competition, the government decided to have a system of ballots by which households could decide on the carrier that would service their long distance calls. There were a few problems with the ballots. Even though the Mexican post office was assigned with the distribution of the ballots, some companies hired people to go home to home to distribute and collect the ballots. These individuals apparently were pressuring people to choose the company from which they were hired.

percent. This disparity led Telmex to pay approximately U.S. \$140 million and Avantel and Alestra, which had approximately 25% of the market split evenly between them, to pay U.S. \$130 million.¹⁸ The payment for special projects in turn reduced the interconnection tariff to U.S. \$0.0053 per minute.

The remaining 85 percent of the infrastructure upgrade was to be paid with revenue from traffic. However, a problem associated with this resolution was that more recent entrants tended to be unable to pay their charges. ATSI for example has talked to COFETEL about changing this requirement. COFETEL, however, cited that by law interconnection should be non-discriminatory. Thus if ATSI was able to obtain a lower Special Projects amount, this would constitute discrimination against the other operators that had to pay the going rates. The issue nonetheless remained that, if the amount were calculated to recover the infrastructure upgrade, any additional payment by entrants would simply represent additional revenue for Telmex. By 2002 COFETEL had not decided on this issue.¹⁹

The emergence of disputes among carriers prompted some competitors having investment from U.S. firms to take advantage of their institutions at home by pressuring the Mexican government to more forcefully regulate Telmex. Requests were made, for example, to the U.S. Federal Communication Commission (FCC) and Trade Representative (USTR). In 1997 after the FCC reviewed the rules governing telecommunications competition in Mexico, it determined that the rules were transparent, fair, and equitable. Also, the FCC was pleased about the speed of Mexico's introduction of competition.²⁰

Interconnection negotiations did not run smoothly. Because of problems associated with the calculation of both interconnection rates and the Special Projects amount for infrastructure upgrades, three companies, Avantel, Iusacell and Alestra, considered filing a lawsuit against SCT. In the end, only Avantel did so. The others decided instead to file an administrative complaint with SCT. The first response from the SCT was to dismiss the complaint on the grounds that it was filed out of schedule.²¹

¹⁸ Yuste, Jose. "Los Argumentos De Avantel." *Crónica*, July 28 1997.

¹⁹ Salas, Elvia. Personal Interview, February 19 2002.

²⁰ Flores, Mauricio. "Junta De Consejo." *El Economista*, November 4 1997.

²¹ "Cofetel Lineas Telefónicas." July 1 1997.

When the court granted Avantel a temporary suspension of the special projects and interconnection payments, the SCT decided to proceed with Alestra's and Iusacel's complaints. Because of the division of power across the two regulatory agencies, the SCT was responsible for answering the administrative complaints and lawsuits, even though the amparos were directed against the COFETEL.

The decision issued by the court prompted other carriers to halt their payments to Telmex even though they were not part of the lawsuit. They considered a protest against the Special Projects decision. They also wanted Telmex to keep separate accounts between its local and long distance services to make sure that their payments were not going to subsidize Telmex's long distance operations.²² The amparo against COFETEL took more than three years to settle. Therefore, for smaller carriers, this was not an appropriate tool. As was stated by a legal officer at ATSI, a smaller carrier: "[w]e prefer to negotiate because the courts take a long time and we cannot work without a contract. At the moment we do not have an interconnection agreement with Telmex. We have to contract with other companies for call termination."²³ The legal play mechanism was working.

The decision by other competing carriers not to file an amparo against COFETEL or a lawsuit against Telmex is an indication that they did not see the courts as a solution to the interconnection problems. The courts were only used by the larger players, that had the necessary resources to continue operations in the absence of an interconnection arrangement.

The legal course that Avantel decided to take indicates that lawsuits were successful in allowing competitors to obtain more favorable terms. Initially Telmex was only involved in the legal disputes as an affected third party, but towards the end of the interconnection disputes, Telmex took a more aggressive legal stand.

When Avantel stopped paying the interconnection fees, it was afraid that Telmex would disconnect its network. This led them to request the court to broaden the amparo to prevent Telmex from disconnecting Avantel's network. Early success in the court also

²² Perez, Bernardo. "Los Nuevos Pagos Por Interconexión Se Convertirán En Subsidios Si No Hay Claridad Entre Servicio Local Y Larga Distancia De La Empresa, Advierten a Cofetel." *El Economista*, June 23 1997.

²³ Salas, Elvia. Personal Interview, February 19 2002.

gave Avantel a reason to extend its amparo even more, to avoid paying charges to Telmex for bypass operations provided to residential customers for several months.²⁴

Information non-disclosure problems continued to plague the dispute between Avantel and the regulator. During the course of the amparo, when the court began asking for evidence, SCT needed to request another copy of the report from Bellcore because the original was lost in a move of the organization's offices to another location. Similarly, as part of the evidence, Judge María Guadalupe Rivera requested an audit of Telmex accounts to verify that the amount decided by the SCT was accurate. Days before the audits were about to take place, COFETEL submitted a formal complaint to prevent the audit from taking place.²⁵ The judge did not accept the complaint and requested the selection of auditors. When COFETEL was asked to submit information about Telmex the Commission refused. The judge at this point stated that Carlos Casasús, head of COFETEL, was posing obstacles to the case. Because the Commission failed to issue the requested information, Avantel once again expanded the scope of the amparo to also include lack of transparency and deficient cooperation in the provision of information requested by the court.

During the course of the case, legal representatives from Telmex, Alestra and Avantel held negotiations to try to solve the mushrooming interconnection disputes, but they could not reach any agreement. In April 1998, a year after the amparo was originally filed against COFETEL, Judge Amanda García González decided to make permanent the temporary suspension of payments that Avantel was to pay Telmex. It covered the amount specified by Special Projects resolution that included a 58% surcharge on international inbound traffic or failed call attempts.²⁶ COFETEL in turn decided to request a revision of the decision in an attempt to prevent the permanent suspension.

In October the court denied Avantel's extension of scope of the amparo to include the bypass operations, and at the same time gave Telmex the authority to disconnect

²⁴ Flores, Renato. "Impide El Juez a Telmex Desconectar a Avantel." *Uno Mas Uno*, July 15 1997, P1-E.

²⁵ Flores, Renato. "Pide Avantel Investigar a Fondo De Inversiones De Telmex Para Interconexión." *El Economista*, August 18 1997, P37.

²⁶ Flores, Renato. "Logra Avantel La Suspensión Definitiva De Nuevos Cobros." *El Economista*, April 21 1998, p. 45.

Avantel's network if it failed to pay the bypass charges.²⁷ In January 1998 MCI and AT&T filed a lawsuit against Telmex for the high termination charges that they were obliged to pay. This added to the pressure on Telmex.

The judge had given auditors the authorization to enter Telmex's premises. Days before they were scheduled to visit the company, Telmex submitted a formal complaint that led the court to suspend the audit once again and even reverse the decision that had made permanent the suspension of Avantel's payments to Telmex for special projects.

In April of 1998 Carlos Casasús resigned as head of COFETEL. In his place Javier Lozano, the subsecretary of SCT, was appointed as leader of the Commission. From the beginning of his appointment, Carlos Casasús was severely criticized for being the head of COFETEL when he had previously been a top level official at Telmex when it was state owned. He was also criticized for being slow and unresponsive to the demands of the court. The details of the political disputes between COFETEL and SCT are nonetheless unknown. According to an interviewee, the head of the SCT, Carlos Ruiz Sacristán used these allegations as a pretext to make Casasús resign and appoint Lozano, who wanted to take over the COFETEL.²⁸ With Lozano's appointment all of the functions that were part of the SCT subsecretariat that he headed passed to COFETEL. As soon as Lozano took over COFETEL, he decided, like his predecessor, that Avantel was still responsible for the payments specified in the Special Projects Resolution. He nonetheless made a surprising decision when, in March 1998, he invalidated a resolution issued by COFETEL that increased interconnection charges and provided a surcharge for failed calls.²⁹

Because Avantel was no longer under court protection for the payments of interconnection, Telmex threatened to disconnect it from the network. At the same time, Telmex filed a lawsuit against Avantel's executives accusing them of false statements.

As part of Avantel strategies to protect itself against Telmex, the company also requested the Mexico's Federal Competition Commission (CFC) to investigate Telmex. The objective was for the CFC to declare the company a dominant market player and thus

²⁷ Cardoso, Victor. "Telmex, Autorizado a Suspender El Servicio De Interconexión a Avantel Por Adeudo." *La Jornada*, October 8 1997.

²⁸ Anonymous. Personal Interview, February 21 2002.

be subject to more stringent regulatory oversight. Avantel's efforts paid off in March 1998 when the CFC issued a resolution that stated exactly that. The CFC left it to COFETEL to decide the rules that Telmex would have to abide by.³⁰

In July 1998 all carriers had to begin negotiations to determine the interconnection rates for 1999-2001. At that time, Telmex decided to cut Avantel's network. As a result, Avantel felt obliged to pay U.S. \$4 million for private connections that they owed. While all the other operators began negotiations, Avantel decided not to participate. Negotiation between Telmex and the other carriers ended in April and it was not until July that Avantel decided to begin negotiations with Telmex. An additional issue in that year's interconnection negotiations was a request by Telmex to implement a single interconnection tariff to all carriers regardless of technology. The company expected that this action would eliminate bypass, in this case, the use of lower tariff connections to Telmex's network. Some carriers nonetheless oppose the single tariff because they believe that it leads to the subsidy of competing technologies. As a result of the carrier-Telmex negotiations, the interconnection tariff was reduced to U.S. \$0.0027 per minute. This agreement also included the payment of the U.S. \$422 million for Special Projects and the ability for competing carriers to be able to enter Telmex's facilities to install their own equipment. It further stipulated that the signing parties would not use legal instruments or administrative complaints. While the operators negotiating this agreement were ready to accept the conditions, Avantel was still reluctant to do so. This was because the U.S. \$422 million had by then increased to almost U.S. \$700 million due to interest rates and inflation adjustments.

Even though the other operators were willing to sign an agreement, they did not actually do so because they did not want Avantel to obtain better terms and conditions for interconnection as a result of its amparo. Avantel in turn did not give up its demands. It continued pressuring the authorities to eliminate the charges specified in the Special Projects Resolution.

²⁹ Cardoso, Victor. "No Autorizó La Sct El Aumento De Tarifas Acordado Por La Cofetel." *La Jornada* (1998): P18.

³⁰ Cortes, Maricarmen. "Desde El Piso De Remates: Telmex, Poder Relevante De Mercado: Cfc." *El Excelsior*, March 23 1998.

In December 1998 additional pressure came from the United States when MCI and AT&T filed a complaint against Telmex for its excessive settlement rates, which at that time were U.S. \$0.034. This sum included the 58% that Telmex requested from its competitors. Pressure from Avantel, CFC, and the FCC, eventually prompted COFETEL to issue a resolution containing several changes favorable to competitors. It eliminated the 58% surcharge, a U.S. \$0.027 charge for interconnection and changed the cellular calls payments to the calling party pays regime. However, Avantel was still unsatisfied with the resolution. It felt that the interconnection tariff was still too high because it included charges such as collocation and ports that should not be considered in calculating the rate. Additionally the company stated that the December 1998 rate was equivalent to the original 0.19 pesos 1996 adjusted for inflation and that, while monthly inflation adjustments were authorized, productivity offsets were not.

Avantel also claimed that COFETEL gave neither explanations nor published studies that justified how the rates were determined. Similarly Telmex's costs were not reviewed. Instead, the Commission stated that Telmex, on its residential local services rate, was not yet recovering its costs. This was a surprising assertion due to the fact that Telmex had reported at the Securities and Exchange Commission in the U.S. that re-balancing had concluded at year-end 1997.

Another controversial issue of this 1998 resolution was the calling party pays decision. While cellular carriers were in favor, Telmex opposed it. Wireless carriers knew that countries that had adopted this policy also increased the number of cellular subscribers. However, Telmex was worried about the increase in the cost to its subscribers for calls to wireless phones. Telmex officials were also concerned about the interconnection charge that they would have to pay to the wireless providers. In this respect, in January 1999, the new Secretary of COFETEL Javier Lozano specified that Telmex would pay wireless carriers the world's lowest interconnection rate, which would be reviewed every six months.³¹ Telmex, in spite of the favorable terms of interconnection that were specified by the secretary, filed an amparo against COFETEL for the calling party pays decision as well as for the interconnection tariff. Upon revision of the amparo filed by Telmex, the court decided to impose a temporary suspension on

³¹ Yuste, Jose. "El Que Llama Paga." *Cronica*, January 18 1999.

the new payment instrument. This decision is expected to delay the payment mechanism up to three years.

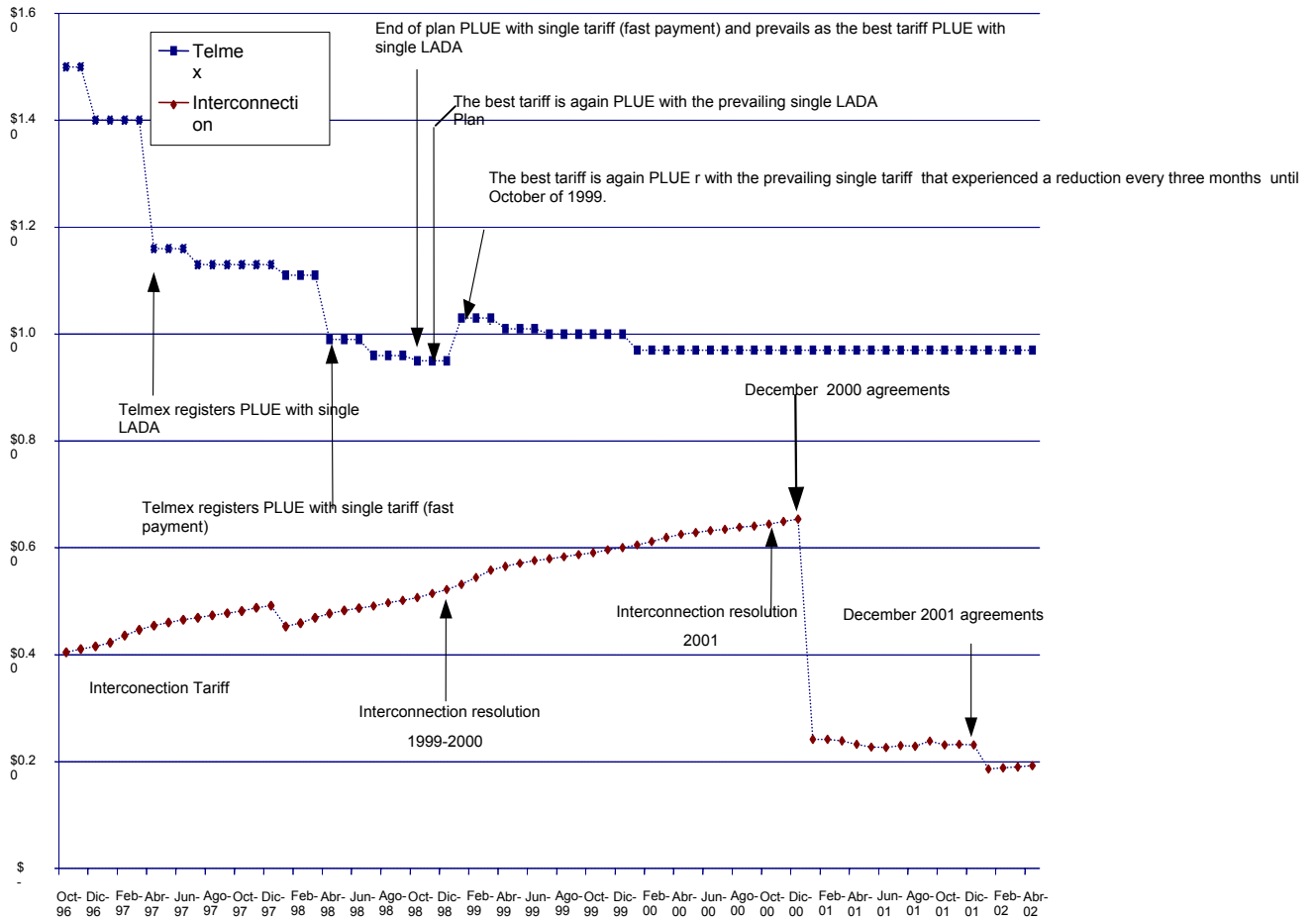
Over the course of the dispute there were several occasions when Telmex threatened to disconnect the networks of Avantel and other competitors. In September 1999 Avantel filed another legal complaint against Telmex, which had refused to provide access to telephone and data links. The few successes that Avantel had in using legal instruments seemed to have prompted the company to use them even more. In July 1999 the company filed another amparo against COFETEL for allowing Unefon to pay the spectrum licenses that Unefon had won. Avantel's argument was that this was not allowed under the initial rules, and that this type of payment concession was a violation of the law. Unefon also filed an amparo against COFETEL and wanted to have part of the U.S. \$300 million returned to them. Their argument was that the spectrum is a national good and should not be charged for.

To add to the pressure the U.S. Federal Communications Commission filed another complaint with COFETEL about Telmex refusing to interconnect lines for Avantel. The FCC also warned Telmex that its refusal could endanger its application to provide long distance services in the United States. Because of this pressure, Telmex agreed to gradually reduce the settlement rate from 37 U.S. cents for 1998, to 25 cents in 1999 19 cents in 2000 and to 13.5 in 2002.

Negotiations between Alestra, Avantel, and Telmex began again in January 2000. By that time, interconnection charges should have already been defined. Competing operators had complained that high interconnection rates prevented them from covering their costs. In March they increased their long distance tariffs by 14.16%. They hoped that Telmex would cooperate in the increase so they would not have to lose customers. Telmex, however, refused to increase its long distance tariffs arguing that they would not subsidize inefficient operators.³² COFETEL similarly made an official request to Telmex to increase its tariffs, which the company refused. Avantel has examined Telmex tariffs to determine if they show a predatory trend. Figure 4 presents both Telmex long distance rates and the interconnection tariffs.

³² "Avantel Aumenta Tarifas." *La Jornada*, March 18 1999.

**Figure 4
Telmex Price Changes**



Plan Lada Unión Empresarial con Tarifa Unica (PLUE) is a program by which Telmex lowered prices to its clients over the course of several years after competition began.

Avantel and Alestra have traditionally focused on the provision of long distance services. In 1999, they obtained concessions to offer local telephony, and were scheduled to start offering services in January 2000. They were not able to do so because of uncertainty in the interconnection rates. In addition Telmex suspended the delivery of circuits and links to its competitors for six months.

In February 2000, negotiations began again but broke down soon afterward. At this point the Secretary General of the SCT requested that the carriers resume negotiations, but they refused to do so. During the time that negotiations were taking place among carriers, COFETEL was also negotiating with Telmex about the legal requirements that the company would have to comply with as a result of the dominant carrier resolution issued by the FCC. Even though competitive carriers requested to participate in these negotiations, the new Secretary of the COFETEL Jorge Nicolin refused to accept their input, arguing that the commission is the only one that determines who is able to participate.³³ The FCC issued its dominant carrier resolution in March 1998. By 2000 COFETEL had not yet decided the rules that would impose asymmetric regulation on Telmex.

At the end of the year Avantel, Alestra, and Telmex signed an interconnection agreement. They set the interconnection rate at U.S. \$0.0125. It also ended all of the pending amparos that Avantel had filed against COFETEL. The operators finally agreed to pay Telmex the amount specified in the Special Projects Resolution. The agreement also stated that Telmex would not pay its competitors any pending charge. This was an agreement that excluded other smaller operators. Not surprisingly, they complained that the agreement not taken their interests into consideration.

Mexican law specifies that interconnection agreements have to be non-discriminatory and that any favorable conditions that were granted to one party would have to be extended to all parties. It is therefore surprising that even though one agreement should be apply to all, Telmex was given the right to negotiate individually with each company. Avantel has argued against this and said that one agreement should apply to all. Smaller carriers prefer having individual agreements because even though the main points of the agreement are the same, they can obtain better payment options.

³³ “Long Distance Competitors Demand Participation in Regulation of Telmex.” *Reforma*, April 4 2000.

For Telmex the individual agreements were better because they could more easily reach consensus and obtain better terms than they could if they faced 10 different operators at the same negotiating table. Avantel argues that this gives Telmex the option of delaying and imposing its own conditions for each of these agreements.

The 2001 interconnection agreement was a major breakthrough in the relationships between competitors and Telmex. It facilitated the interconnection negotiations of the following year. Private agreements between the operators eliminated the need for COFETEL to issue the interconnection rate.

July 2001 was the beginning of negotiations to determine the interconnection rate for 2002. This time, Telmex and Avantel hired experts to determine if the interconnection rates in Mexico are comparable to others, particularly those of the United States.

Telmex hired Charles River Associates, which concluded that Mexico's interconnection rate for call termination, U.S. \$0.032, was lower than the one charged in the U.S., \$0.0343. The average access charge in Mexico was calculated to be \$0.0411 compared to \$0.0383 in the U.S. With respect to access revenues per subscriber line, charges in Mexico were found to be lower than in the U.S. Per subscriber line annual access revenues in Mexico are \$116 compared with \$162 in the U.S.

As a result of the surprising results from CRA, Avantel hired Pablo Spiller, an economist from the University of California at Berkeley, to analyze these numbers. His report concluded that:

- CRA inappropriately excluded resale and, possibly, long distance links from Mexican access revenues.
- CRA relied on obsolete U.S. access rates, rather than the rates currently in effect.
- CRA inappropriately included the subscriber line charge, which is paid by the end user and is not associated with LD calling.
- CRA incorrectly estimated intrastate rates so as to significantly inflate them.
- The effect of these deficiencies was to increase the estimated U.S. access rate and decrease the Mexican rate.
- In 2000 Mexican rates were up to 215% higher than the corresponding in the U.S.

In spite of their differences the operators signed an agreement and established the interconnection rates at U.S. \$0.00975. As in the previous year, there was no need for

COFETEL to intervene to set the rate. Both small and larger carriers were satisfied with the decisions made in the negotiations.

The generation of information that both Telmex and Avantel produced provides an indication of its importance in the negotiation among carriers. Regardless of the reputation of the parties involved, both companies have specific interests to show that their rivals are making unreasonable requests. In the absence of a neutral party to verify the accuracy of this information, one cannot rule out the possibility of some information manipulation. Avantel's results seem to indicate that Telmex was engaging in such practices. A challenge for the Mexican regulator is to determine which information is correct. This is particularly true in an environment where the parties involved do not trust each other. The new entrants are skeptical about Telmex and all parties are skeptical about the regulator, which, over the course of the interconnection negotiations, has made mistakes that have undermined its credibility as a neutral party.

Implications for Infrastructure Deployment and Future Regulation

This case implies that interconnection can be exploited by an incumbent so that it stifles competition. The incumbent can use various legal and regulatory means to be successful. To achieve open competition, the regulator has to strike several types of balances. It needs to assert the rights of competitors to have full access to interconnection. On the crucial issue of pricing for interconnection, it needs to ensure transparent information on cost so that the parties in the negotiations all have similar and accurate information. The regulatory agency needs to have sufficient powers to achieve these objectives.

In the case of Mexico, many of the problems occurred because the regulatory agencies either didn't have substantial powers to take actions or enforce, or because strength was lost in the confusion between two regulatory agencies. Another problem was fuzziness in the law regarding interconnection. The lesson here is that the agency and its legal authority need to be spelled out specifically and be sufficiently strong to achieve results.

Theoretical Implications

The four frameworks presented all seem to have a place in a conceptual model of interconnection. For Mexico, the most important framework was that of asymmetric information. Mexico's COFETEL was blamed for keeping secret information in many of its decisions and the corporations have done the same. At every turn of the case, the incumbent denied competitors and regulators information that would have made negotiation issues more transparent. The other three concepts of legal play, capture theory, and minimum compliance all pertain to this case as well.

In summary, all four frameworks together appear to provide the appropriate conceptual base to understand interconnection in an international context. We have not attempted to weave the four together into a unified theory, which will be the topic of further research, and may require more testing with other cases. It is evident from the cases, that the four frameworks work together and have cross-linkages.

Conclusions

This paper has presented four conceptual frameworks for understanding the problem of interconnection in evolving national telecommunications sectors. The frameworks are asymmetric information, legal play, capture theory, and minimum compliance. The Mexican case study illustrates actual interconnection disputes between dominant companies and their competitors. The research does justify the importance of the frameworks for interconnection. Determining which is more important depends on the technological, legal, and governmental environment at a given time in a particular country. At its root, interconnection provides a way to avoid monopoly and advance national competitiveness as well as the potential for technological advance and consumer choice.

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