Understanding Centralization and Size in Mexico:
Strategy and Structure in the Telecommunications Industry

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Abstract

This paper offers a conceptual model that defines the structure of organizations competing in the telecommunications industry in Mexico. The model arises from an empirical research in: Telmex, Alestra, Avantel and Axtel. The historical analysis of the strategy and structure of these organizations indicated the materialization of a centralized multidivisional structure. The variables in this definition are: related diversification strategy, market oriented organizational entities, centralized decisions at the corporate level, strategic alliances and standardization. The innovation that is required for growth is replaced with alternative strategies such as collaboration agreements and outsourced R & D services.

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The complexity that organizations face nowadays is an important reason to justify the discussion of traditional management theories. Chandler (1962) proposed that growth allows the developing of the modern organization, with a multidivisional and decentralized structure, that enables it responds to product demands for diverse markets and regions. Modern organizations, with this peripheral structure, take advantage of scale and scope economies, through new technologies development. Thus, modern organization develops the capacity for new product innovation through its own technology. Given this, we build our proposal on Chandler’s main ideas in order to study organizational structure in big business in the Mexican telecommunications context.

The main competitors in the telecommunications industry face a global structural transformation (Santos, 2000). Therefore, this study, from the organizational strategy theory perspective, could guide us to understand the structural models that big business in Mexico use in their transformation process.

Our objective in this paper is to propose a conceptual model that defines the structure of organizations competing in the telecommunications industry in Mexico. This paper is organized in four parts: first, we briefly present Chandler’s main ideas that are related to the structure of big business. In the second part of this paper we describe the methods that we used in this investigation. In the third part we illustrate the history of the strategies and structure of the main competitors of the telecommunications industry in Mexico. Finally, in the fourth section of this paper, we offer a series of theoretical propositions that will allow us to advance in the field of organizational strategy theory in Mexico.

Chandler’s Organizational Structure Theory

Before Chandler (1962), the theory of organizational structure was concentrated on the study of the relations between the size of the organization and concepts such as formalization, centralization, or standardization (Pugh, Hickson, & Hinings, 1969); or size and technology and concepts such as interdependence, coordination or integration of labor (Thompson, 1967). In this section we present Chandler’s (1962) theory that
explains how an increase in the size of any organization is associated with the increase in its structure differentiation. The growth process will lead the organization to the point in which it will require a restructure that will allow it to diversify, decentralize, and survive through innovation.

Chandler (1998) found, that big business transformed from a functionally and centralized departmentalized structure (U-form named by others) to a multidivisional with a corporate office and a number of decentralized product divisions in charge of diverse geographic regions (M-form). The divisions were, at the same time, conformed by functionally differentiated departments (Chandler, 1962). The restructure by divisions was the answer to the need for decentralize decisions—a need that arose because of the increasing in the size of the organization. Decisions—every time more complex and diverse—tended to concentrate at the top management level of the organization and only few decisions were delegated to the middle management.

Chandler (1962) identified four periods during the structural transformation process of the big American organization. The first transformation period occurred as a consequence of a rapid expansion and capital accumulation, after the Civil War. The growth of organizations was the result of a vertical integration strategy. In the second period, a group of professional managers emerged and developed methods attached to the capitalist rational mentality in order to increase production activities. In this period, it was important the reduction of the unit production costs and the coordination of a great diversity of activities. Chandler (1962) associated these two periods with the development of the technology—railroads—and the beginning of the managerial hierarchies in the United States. The third period was extended just before the First Great World War. It was characterized by organizations that followed a diversification strategy which capitalized new technology for market development. After the armed conflict, Chandler (1962) identified a period of restructuring as a response to the need to pursue resource efficiency. The organizational form found in this fourth period was the multidivisional and decentralized structure, characterized by a separation of the strategic and operative decisions. The daily work and the decisions involved in the operations were delegate to the divisions’ managers and the strategic decisions were concentrated in the central office or corporate headquarters.
For Chandler (1962) any strategy followed by the organization—vertical or horizontal integration—it would benefit from the multidivisional structure. Later, Chandler (1998) indicated that the restructuring was not the panacea for all big businesses, since he identified innumerable occasions of authority and responsibility adjustments between the central office and the divisions. In spite of this, the new structure allowed the professional managers to adopt long term strategies through product development for market diversification. Given the structural decentralization of the divisions, executives followed a diversification strategy according to their competitive advantage in production, distribution, or research and development.

The internal dynamics of the organizations also were disturbed. The communication between the central office and the divisions was affected when both centers of power were separated. The central office projected a shortage of the technical and market knowledge of its divisions. For this reason, the corporate office was saturated of executives and the divisions were grouped by vice-presidencies to be managed by its own administrative team. In spite of this, the central office did not develop the capacity to analyze the performance of the divisions.

In summary, Chandler (1962) proposed that a decentralized multidivisional structure releases the executives of the central office from the overload of the daily operation decisions. The central office would be concentrated in the long term plans of the conglomerate, the supervision of the divisions’ performance, and the resources allocation for businesses of high value added. The divisions, on the other hand, are free to operate their capabilities and resources towards businesses of high value added, since the innovation strategy is decentralized. For Chandler (1962) this structure is representative of a modern organization. Up to here, we presented the main ideas of Chandler.

A historical analysis of the strategy and structure of the organizations in the telecommunications industry in Mexico could help us to understand the dynamics that occurred during the growth process in its relations to their organizational structure. Next, we describe the research methods of this investigation followed by the narrative of the evolution of the studied organizations.
Research Methods

This research is a compared study of the history of the strategy and structure of Telmex, Alestra, Avantel, and Axtel. The research design, through case studies allowed us to respond to the ‘how’ and ‘why’ questions (Yin, 1989). The comparative approach to the cases allowed us to identify the organizations’ actions that we selected for our narrative—presentation of our findings. Our generalization—theoretical constructs—is inducted and based on the findings that we translated into theoretical propositions and that we present in the fourth section of this paper.

We reconstructed the history of these organizations through primary and secondary data. We used primary sources of data such as: official publications—newsletters, press communications, annual reports, official Internet sites—and interviews to selected informants at executive level. Secondary sources of data were: articles in specialized press, articles in commercial press, academic literature, as well as books of the history of the telecommunications in Mexico. We identified and differentiated facts and processes derived from the history of the studied organizations and we organized them by themes that emerged inductively. These themes were: non-related diversification strategy, market organizational united, centralization of strategic and operative decisions at the corporate level, strategic alliances, and standardization. The data within these themes were processed through visual maps (Langley, 1999) that we identified like peripheral structures. We made a deliberate effort to triangulate the data gathered in order to assure the trustworthiness and consistency of our findings. An expert in the telecommunications industry audited our findings and corroborated our interpretations. We made a few adjustments concerning our understanding of the industry structure.

We followed the narrative strategy, as Chandler (1962) did, in order to present our research findings. This strategy is adopted when the researcher uses the contextual perspective that incorporates analytical elements to clarify sequences through diverse levels of analysis, to suggest causal connections between levels, as well as to identify primary themes (Pettigrew, 1990; cited in Langley, 1999). This strategy allowed us also
to reproduce the complexity and ambiguity that exists in the social scenes that were studied.

Strategy and Structure in the Telecommunications Industry in Mexico


Alestra, an independent subsidiary of Grupo Alfa\(^2\), announced in November 9, 1994, its association with AT&T. Alfa is well-known by its long term and successful joint-ventures relations with foreign partners. Today, Alestra operates with approximately 2000 employees’ nation-wide. In October 1996, Bancomer\(^3\) and Valores Industriales\(^4\) (VISA) became shareholders of Alestra. The ownership structure of Alestra was established as follows: AT&T, 49 per cent; Grupo Alfa, 26 per cent; and, Bancomer-VISA, 25 per cent (Serrano, 2000). In March 1998, VISA sold its participation to Bancomer. The board of Alestra was integrated by the same number of members of Alfa and AT&T and all of them appointed the new CEO of the company. The board is jointly presided by Dionisio Garza-Medina (President of the Board and CEO of Grupo Alfa) and Eugenio Garza-Lagüera (Honorary President of the Board of Bancomer-VISA) (Alestra, 2003).

The company announced 1000 million dollars investments for a period of four years: from 1996 to 2000 (Cronica, December 23, 1996). This amount was planed to be oriented to the installation of two phases of an optical fiber network of 8600 kilometers, in order to interconnect 24 cities in the country. In April 1998, Alestra announced a lost of 360 million dollars in its first year of operation. For this reason, Alestra suspended its participation in the auction of the radio-electric connection for wireless fixed access. Then, company announced a change in its strategy and resources dedicated to compete in the local telecommunications market. In September 1999, the Ministry of Communications and Transportation granted two concession titles to operate, to take advantage, and to use frequency bands for the point to point service. Alestra paid to the

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\(^2\) Grupo Alfa is a major Mexican economic group with headquarters in the city of Monterrey, with big business in steel, petrochemicals, auto-parts, and processed food industries.

\(^3\) Bancomer is the second largest commercial bank in Mexico, founded in the city of Monterrey. Today, Bancomer is associated with Banco Bilbao Vizcaya (BBVA) from Spain.

\(^4\) VISA is FEMSA holding, an economic group of the city of Monterrey, with big business in the brewery and soft drinks industries.
Federal Government a total of 22 million 266 thousand pesos by these nation covered concessions for 20 years. In 2001, Alestra initiated its local operation of telecommunications services.

The strategy of the company, related to telecommunications, consisted of three phases: In the first stage, Alestra offered local services to customers who hold direct access network with AT&T as an Internet provider. In the second stage, Alestra installed a network of local access based on wireless technology for point-multipoint. Finally, in the third stage, the telecommunications operator offered services of broadband for voice, data, and Internet to commercial and residential clients. In 2002, Alestra initiated a recession phase, due to the reduction of the American market, as well as to the devaluation of the peso against the dollar, which obligated to pursue a reconstruction of the company’s debt. Alestra’s problems of liquidity caused that AT&T signed a non-binding intention letter in order to be able to sell its participation in AT&T Latin America to Southern Cross Group for a billion dollars. For this reason, AT&T would assume a charge of 1100 million dollars to annul its participation in the Latin American firm. Moreover, in December 2002, Alestra lost 15 per cent of its national market. Alfa conditioned financial aid to Alestra after the reduction of the company’s debt.

Alestra holds several technological alliances. Lucent Technologies is the main designer and constructor of the company’s network. Nevertheless, other operations include the use of equipment from diverse suppliers, such as the metropolitan ring that was constructed by Alcatel (Alestra, 2003) and transmitters that were produced in Italy (El Heraldo de México, July 14, 1996). Alestra announced in December 1996 its alliance with the World Partners in order to offer global services of voice and data communication to multinational companies with operations in Mexico. Alestra and Concert signed an agreement in April 2001 that allowed the company to distribute Concert services of data transmission. Concert, is a global company owned by AT&T and British Telecom (BT) (Rodriguez, April 27, 2001). In summary, Alestra developed strong ties with technological suppliers according to each project or service required, or according to its operation stage. This allowed the company to have a flexible position during the selection of suppliers.
Strategy and Organization in Alestra

During the first three years—interviewed executives explained—the goals and strategies of Alestra were oriented to the long distance market, reason why the company dedicated all its resources to the construction of its network. In approximately ten months, an optical fiber network of 4300 kilometers was installed. Although, in the beginning, the main income of Alestra came from the long distance service, the profit margins by this service were minimized by the high costs of interconnection with Teléfonos de México (Telmex). In addition, the accelerated development of the communications technology by high technology companies such as Motorola, Cisco, Microsoft, Lucent, Nortel, Erickson, among others, dictated that the trend in telecommunications services would be oriented to data transmission and that the long distance calls would be done through the Internet using IP technology. A statement of Alestra’s Human Resources and Administration Director illustrates the strategic change of the company: “... at the end of 1999, Alestra started to develop a change in its strategy. It consisted in changing the focus on long distance calls and redirecting the infrastructure towards services of broadband, data, and Internet.” According to Bolton, Cariaga, Linares, and Chaparro this change of strategy converted Alestra from a telephone into a telecommunications company (cited in Santos, 2000).

Although the definition of the Mexican market to operate this strategy is based on the size, this “...still immature”—mentioned the Human Resources and Administration Director—with respect to the American market. The tele-density (telephone lines by the total of inhabitants) is extremely low compared to other countries. For this reason, the broadband massive services are not targeted by the company; the services are, instead, refocused to attract economic groups, big and medium size organizations.

Alestra was born with a robust, functional and hierarchic structure: CEO, Operations, Information Systems, Strategic Planning, Finance, Legal, Communications, Sales, Marketing Research, Human Resources and Administration. In 1999, the company restructured towards its customers. The first changes were the merger of the Information Systems and Operations functions, in order to make both areas responsible
for the infrastructure development of systems, maintenance, and control of the network. This new function was named Technology and a CTO was named. Other restructure strategies were: two functional mergers, strategic planning and finance, human resources and administration; and, the subordination of sales and marketing research functions to two business units—corporate and residential. “The mass market is different from the corporate market”—said the Director of Human Resources and Administration. The resulting structure of the first organizational adjustment was a hybrid form that combined functional and market segmentation. More evidence of the organization’s intention to develop towards serving corporate market was that all customer processes were certified by ISO-9000. Given this, the company became more formalized documenting all its processes.

At the beginning, the company held eleven directorships, after the restructure period, it finished with five functional areas and three business units by market segmentation. Later, it was formed the international business unit. (This unit is responsible for the international traffic and the relationships with international carriers.) The business units, as the executives of Alestra understood, are operative units directly in-charge on customers accounts and supported by the rest of the administrative functions, although each one holds its own marketing function.

It is in this organizational structure where the broadband technology is received, reason why the company was reoriented to the corporate market through a business unit. Apparently, the structure went ahead the implantation of the strategy. The business units operate in the following way: “…a project is born in the marketing research area of the business units, then a business plan is developed—a descriptive document of the product—which is sent to the CTO’s office and it is evaluated according to the infrastructure and information technologies requirements”—this process was described by the Information Technologies Manager.

The CTO’s office produces a document of feasibility impact. It dictates to the business unit where the product or new service is going to have an impact. This could be in the invoice form, in the way the product or service would be supplied, or in the way it is going be provided. The document, also, offers information concerning the infrastructure needed and the projected operating costs. The business unit receives the
document with all the technological aspects of the new product or service and it is integrated to its business model for its financing approval from the company’s board. When the request is approved, the business unit establishes a development operating procedure and the CTO is in charge to generate a detailed technical document of the product or service and its impact, establishing all the solutions to possible technical problems, in order to implement the new product or service. At this stage, production planning activities for the implementation-migration of the new product or service are initiated. According to the informants, the time invested in all this process, lasts from five to six months.

The Director of Human Resources and Administration argued that the business units are independent; however, coordination mechanisms between the units were not mentioned. Although, at the administrative and support areas it was mentioned several coordination mechanisms. For example, these areas use face to face weekly meetings to take care of the problems that the hierarchy could not resolve. These meetings are usually attended by the eight directors of the company and they last an entire afternoon. Contrary, to what one could think, the IT executive interviewed, mentioned that these meetings flow smoothly. Other interaction mechanisms among administrative and business units are through an intranet managed by Lotus Notes and the electronic mail.


Avantel is a company of approximately 2000 employees. In January 1995 it was announced the alliance between MCI Communications and Banamex-Accival to form Avantel. The investment was 55 per cent by Banamex-Accival and 45 per cent by MCI. In September, that same year, Avantel received a concession of the Ministry of Communications and Transport, to become the first company in competing against Telmex in long distance market. The company planned to invest 1800 million dollars in the next five years in order to offer the following services: long distance communications, local telephony, and value added services. In two years, Avantel tended its private network and this offered the company the opportunity to sell value

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5 Banamex is the largest commercial bank in Mexico. Today, it is own by Citibank.
added products and services with private communication lines in 60 cities of the country. This was done previously the opening of the market in January 1997 (*El Financiero*, July 31, 1996).

In November 1996, Avantel established commercial alliances with radar-localization companies such as Digitel and Skytel in order to sell these services under their brands (*Reforma*, October 15, 1996). In 1997, it was announced the world-wide alliance between British Telecom and MCI Communications in order to offer local and long distance services, that included voice transmission and wireless telephony, Internet, and Intranet. In June 1997, *Telefónica* from Spain announced a strategic alliance with British Telecom and MCI. Although, in December 1997, the American company was acquired by Worldcom and the alliance finished as Telefónica Española-MCI-Worldcom. In the same year—June, 1997—Avantel became the first telecommunications company in the world receiving the ISO-9002 certification.

In April 1999, Avantel Local Services was authorized to offer, for thirty years, basic local telephony, private lines and public telephony, among other services. In July 2000, Avantel initiated with Alcatel the construction of an optical fiber network and obtained permits to develop new projects with ABN AMRO and Deutsche Telekom. In November 2000, Avantel became the second supplier for Internet access, after Telmex. In 2001 Banamex was acquired by Citicorp and with this transaction the bank infringed the Mexican Federal Law of Telecommunications. In order to save the legal conflict, Citigroup yielded 28.05 per cent of its shares in Avantel to its approximately 32 thousand Mexican employees and retained only 26.95 per cent (*Gomez*, October 14, 2002).

Since the beginning, Avantel developed technological alliances. In July 1996, Avantel subscribed a contract with Ericsson for the construction of a main optical fiber ring in Mexico City in order to evade the necessity to interconnect with Telmex power stations (*Unomasuno*, July 4, 1996). The construction of its optical fiber was the responsibility of ICA, Fluorine Daniel, and Northern Telecom. In that same year, Avantel offered Concert international services that included virtual voice and data networking, as well as packages communications and Frame Relay (*El Financiero*, July 31, 1996).
strategy and organization in avantel

Avantel was born as the Banamex strategy to enter the telecommunications industry, reason why, it looked for MCI as a partner. “Avantel started with the idea of competing in long distance calls, local telephony, and value added services”— indicated the Associate Operations Director for the Local Network of the company. In this way, in 1996, Avantel initiated offering services that did not require a concession: such as those of value added and private lines services for long distance calls; all this previous the interconnection that initiated in January 1997 (Avantel, 2003).

According to Avantel interviewed executives, long distance is a low profitable service and, although, at this moment it is what supports the company, the technological trend indicates a growth in the demand of data transmission. Given this, Avantel made the strategic decision of segmenting the long distance market and refocusing to the corporate sector. In July 1998, Jorge Rodriguez, director of marketing research at that time, reported an increase of 50 per cent in sales with a total of one million customers, in spite of the high costs of the interconnection (Pedrero, 1998). To sum, Avantel’s strategy started focusing on broadband (voice, data and video) services and now offer convergence services. The Infrastructure Quality Manager commented that: “… probably the market does not yet identify that the services are convergence services, but this is a reality.” The Associate Operations Director for the Local Network of the company indicated, on the other hand, that: “Avantel bets to a product diversification strategy.”

The executives interviewed, described that at the beginnings, Avantel was organized through a hybrid structure of functional and products areas. The area of engineering and operations were in charge of the network functioning and expansion; marketing commercialized products through product managers. The other areas were administration and support to the operation. Organizational changes occurred because of the customers, shareholders, and competition pressures. Avantel used consulting services and initiated the process of organizational change. In 1998, the company started to design its structure by business processes. However, the interpretation of the Associate Operations Director for the Local Network of the company is that its structure
is divided by regions and then, by markets. On the other hand, the Infrastructure Quality Manager added that the structure is by products and these focus to the market needs of high profit. The product managers orchestrate the engineering and operations area for its implementation; and, sales are responsible to place them in the market.

Organizational adjustments that this company experienced—according to the Infrastructure Quality Manager—were around the centralization of several decisions. For example, decisions regarding portfolio services, product life cycles, and prices policies, were centralized in the marketing area. “It is in this area where all the information is concentrated and needed to define these elements in a more efficient way” mentioned the executive. The Associate Operations Director for the Local Network of the company argued that this centralization happened because: “…it used to happen that anybody wanted to develop new products, today all the ideas are investigated by marketing. They decide the product portfolio”. On the other hand, suppliers are administrated by the finance area; in order to reach homologation in technology equipment, the engineering and operations area are responsible. They have a great diversity of suppliers and this way of organizing gives them flexibility to select the best one.

According to the interviewed executives, the company is very flexible, since every two years redefine its core processes and, then the organization is restructured. “It is not the other way around”—said one of them. The internal coordination is done through software applications. The company uses Costumer Relations Management (CRM), among other applications. Social organizational mechanisms for coordination and communication are: directors’ meetings three times a week, committees, and operational programmed meetings.

As an example of core processes, the executives described the following: first, marketing develops a businesses plan that demonstrates that the proposed product is profitable. In order to prepare the businesses plan, marketing is helped by engineering and operations to determine the technological requirements. Once integrated the plan, it market proved in order to define the customer’s profile. Once it is demonstrated that the technology works, marketing trains sales people on how the product will be sold and who the market will be. Operations dictate how it will be supervised and how to repair
the technology in case of problems. Service receives information on how to deliver and how to charge the product. The implementation of a new product is made from three weeks to eight months.

**AXTEL (1992-2003)**

In 1992, the project *Telefonía Inalámbrica del Norte* (also TELINOR) initiated headed by Tomas Milmo-Santos together with the shareholders Milmo Zambrano, Lorenzo Zambrano-Treviño, and Alberto Santos-de-Hoyos. This company entered the telecommunications industry as a recommendation of two consultant organizations: The Blackstone Group and Rendall & Associates. Originally, TELINOR, the American partner, was interested in the convergence of services. This company assumed that in 2002 it would be used only one devise to transmit and to receive the triple call play—voice, data, and video.

In June 1996, *TELINOR Telefonía* received the concession to operate local telephony, long distance—national and international—services and value added services. In 1997 the company associated with Bell Canada International (BCI) and with WorldTel Limited of Canada. The Mexican shareholders were with the control of 51 per cent of the company, whereas BCI acquired 27 per cent, and WorldTel 22 percent. In 1999, several events happened: first, the company changed its name to Axtel due to a divergence by the use of the commercial name. Second, Axtel and Telmex signed an agreement for the interchange of calls between their networks. Finally, Axtel signed a contract with Nortel Networks by 450 million dollars, so this company became the main technology and communications supplier, and responsible for the construction of the fixed wireless network telephony of Axtel.

The objective of Axtel was to offer local and fixed wireless telephony and, thus to develop basic telecommunications infrastructure in the country. In March 2003, Axtel renegotiated its debt capitalized by Nortel Networks (Nyse: NT). It was reduced 70 per cent—according to the local press. On the other hand, Axtel extended its procurement

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6 These shareholders are members of important Mexican economic groups based in the city of Monterrey and members of the extended families of early entrepreneurs in Mexico. For example, Zambrano-Treviño is Cemex’s president of the board and CEO; Santos-de-Hoyos is president of the board and CEO of Industrias Santos and uncle of Tomas Milmo-Santos; and, Milmo Zambrano is the father of Tomas Milmo-Santos.
contracts with Nortel to five more years (Axtel, 2003). In other words, its main partner and technological supplier is Nortel Networks. All the power stations of the company are Nortel equipment. The company has an alliance with SR Telecom—a Canadian company, that develops digital wireless access to Internet which include voice and data networks.

**Strategy and Organization in Axtel**

The Market Intelligence Director said that in its beginnings—1992—, the company considered that the services convergence would occur in ten years. That is to say, by the year 2002, we would be using a single device with the capacity to send and to receive voice, data, and video. For this reason, the company’s goal was to participate in this market as supplier of local access and as a provider of the equipment. The strategy of Axtel did not experience any changes, as the other carriers. The company continues concentrated on local telephony, long distance, and Internet services. Its concession forces them to focus on local telephony. In addition, Axtel does not have an international port nor optical fiber connections among the cities in which it operates reason why they must negotiate the communications traffic of long distance with other carriers.

Throughout five years, Axtel proved several organizations models. First, it adopted the model “… of Telmex” said the Market Intelligence Director. This model is a matrix structure—geographic and administrative functions. This model was used to open concurrent operations in several cities of the country. At this stage, the matrix scheme was very useful—according to the executive—because it allowed them to decentralize decisions during key expansion moments: “For example, decisions on facilities construction for radio bases, consumption products supplier contracting, installations to customers, all were decentralized, among other things—commented the Strategic Accounts Executive.

Once the growth process decelerated, it was seek an organizational integration. Thus, the company restructured into a functional type scheme, where a national CEO centralized all the operations. The functional areas depending from the CEO were:
finance, marketing, and operations. Later, the company used a model of geographic structure where there were directors by cities. Under this directive position several functional areas of the company were replicated: sales, marketing, and operations. At the time of this study, the company uses the model of strategic business units “… just as Alestra does it” said the Market Intelligence Director. These business units are two: residential and corporate. These two units are supported by Technologies and Finance functional areas. There are two other functional areas: strategic alliances in charge of lobbying with suppliers and government, and legal.

When a new product is incorporated, the process initiates by a market need to verify its potential as product or service. Then, it is analyzed the technical requirements in order to offer the product. This process lasts three months. At the beginning, the management style of the company was formal and, according to the Market Intelligence Director, the use of memoranda exceed because they had to document all the activities. Although, with the time “… the company makes considerable efforts in using software tools for its internal administration” said the Strategic Accounts Executive. This change had the intention to improve the information flow and in this way to obtain better product feedback with better information in order to act in a proper way and time.

The administrative and staff areas use their own software to coordinate themselves between the business units, as well as informal meetings. A weekly meeting is held by the CEO where “… he calls the roll” said one of the executives. For the administration of the company, it is used SAP (a coordinator information system with integrated modules), data bases by segments of interest (with privileges) and, at the time of this study, the company was implanting CIBEL a CRM.

**TELMEX (1987-2003)**

Telmex\(^7\) initiated the year 1991 with a growth, technological renovation, and quality of the telephone service Triennial Program. In this year, the operation of the company and its subsidiaries were reorganized in order to offer better services to their customers. The investment began to materialize in power stations, external plants, long

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\(^7\) For a detailed history of Telmex, see Santos (2002) and Serrano (2000).
distance services, central stations, equipment and materials for terminal facilities, furniture, and service equipment.

The efforts towards service modernization and improvement continued during 1994, as well as a definition of a new organizational culture oriented to the customer, quality, productivity, and growth (Santos, 2000). In addition, it was introduced digital telephone services of value added. In 1996 the social mission of the company constituted an organized effort, when it was created the Telmex Foundation. With an investment of more than thirteen billion dollars in the modernization, expansion, and diversification of the telephone plant, Telmex was the only company ready to compete on time by the opening of the industry in 1997. At the same time, the company started a program to conserve, retain, and recover customers (Telmex, 2002).

The recovery of the market in all its segments continued and new services were introduced: telephone bill with the control service detailed, access to the telephone bill through Internet, and Precise the Telmex Card. For corporate customers was introduced the Invoice Analysis System (SI@NA). In 1999, Telmex lounged the program Prodigy Internet Extra. The average educational level of the employees was increased to 14 years of school in 1999, similar to most international companies—in 1990 the average employee had seven years of school. During 2000, the company subscribed an alliance with Microsoft to create the T1msn Internet site. In addition, Telmex signed an agreement with the Media Laboratory of the Technological Institute of Massachusetts in which it was contemplated the establishment of the Telmex Laboratory for Information Technologies and Development in the MIT Media Lab.

**Strategy and Organization in Telmex**

After the privatization of the company, there were abrupt organizational changes. A great effort was made to decentralize technologies in order to diminish the power of the union and, thus, to change traditional practices (Santos, 2000). Greater importance was given to personnel qualifications, mainly in the customer service areas. The interviewed executives mentioned that after the privatization process, the company had to change its form to conceive the end user with a customer identity. The response of
the customer approach was the market segmentation. A business unit, named Telecorp, was created and dedicated to take care of the corporate needs. On the other hand, a commercial area was created to focus on the needs of the mass market (residential customers), being up today the most profitable segment of Telmex, with a contribution of 47 per cent market participation. The company did not continue its investments in research and development projects and information systems, since none of these two areas were central. The company considers itself a leading company in telecommunication services, no a technology developer.

The Associate Director for Long Distance Network Operations, mentioned, that the divisional role arose shortly before the privatization (in 1987). The divisional director role was created to administer “…his business independently, but receives orders from functional areas at the corporate headquarters.” The organizational structure consisted of three corporate divisions, two staff offices—one of them for corporate image—and five operational divisions that would function as profit centers. The functions of the corporate divisions (human, finances and administration, resources and planning, and corporate development) would be to establish institutional policies; to authorize investment plans and infrastructure; to establish goals and operation policies; and, to make high level personnel appointments (Santos, 2002). From the five operational divisions, three were Telephone Operation (North, South, and Metro), Telephone Development, and Long Distance.

Each of these operational divisions had a Planning and Development, Finances, and Human Resources independent departments. The Telephone Development division was first in market segmentation and it created the Big Users department. Once the company was privatized, all administrative policies became rigid. This was the time when performance started to be measured through productivity indicators. This generated more bureaucracy and less flexibility, although, an interviewed executive said that bureaucracy is already reduced, because top management understood that technicians’ creativity is reduced when all their activities are controlled. Today, Telmex works under a matrix structure.

Telmex is organized around eleven divisions coordinated around the long distance service. The corporate administration establishes the business policy, an
operations frame of reference, and procedures so that divisions operate under a
decentralized and homogenous system. However, corporate office has the last word on
budget decisions and growth. The CEO meets with each division director and they
deﬁne new projects. Special cases or important decisions that are not established in the
operations frame of reference are solved at the divisional and corporate level, together.
The challenge is to make the independent business units respect the operations frame
of reference of the corporate office. It is clear, indeed, that the corporate office can not
grant too much freedom to the business units. There was a moment where they
wanted to establish independent units of business but “…it became a jungle” mentioned
the Associate Director for Long Distance Network Operations. The assumption was that
each division operates as an independent business units, although, independent only
from the implementation point of view.

In order to provide contract services to customers such as Axtel, Alestra, Telcel,
among others, it was created the Carriers Attention Center (CAO). This center supplies
the interconnection and it is dedicated only and exclusively to the attention of these
 carriers.

What lessons do we learned from the historical analysis of the strategies and
structure of the big business in the telecommunications industry in Mexico? We present
next, our theoretical propositions.

Theoretical Propositions

Our purpose in this research is to offer a conceptual model that defines the
structure of organizations competing in the telecommunications industry in Mexico.
Chandler’s argument is quite clear in his theoretical proposition: When big business
reaches certain size requires a restructure in order to exploit its resources in an efficient
form through innovation; its structure transforms into a multidivisional decentralized
organization with product divisions oriented to diverse markets or to the administration of
different geographic regions. In this section we intent to advance in Chandler’s work by
presenting a conceptual model that describes an alternative structure for growth, derived
from the study of the organizational structure of the big telecommunications business in
Mexico. Organizational growth permits the generation of other type of structures, and organizations continue being big. The innovation that Chandler argues, and that only occurs within the decentralized divisions, in other definition of structure, could be replaced by different organizational strategies. Following the history of Alestra, Avantel, Axtel and Telmex we conclude the following:

A multidivisional centralized structure is the organizational form that contains a central office named corporate headquarters as a nucleus of the strategic and operational decisions as well as the resources allocation, with market oriented divisions inserted in the corporate office, managing units that operate at the regional level.

In order to explain this we fragmented it into theoretical propositions that we will explain in this section. Chandler (1962) identified that during the growth of the big American business, the strategy changed from focusing to unitary markets or geographic regions to compete with diverse products for multiple markets or regions. Without a doubt, a strategy of this kind—non-related diversification—was supported by a multidivisional structure. Chandler assured that when competing with a non-related diversification strategy a multidivisional structure is needed. This thesis explains much of the behavior of big business for more than four decades. Nevertheless, it also was the cause of the economic adjustments of many large conglomerates that nowadays were reoriented to industrial concentration. Reason why, we propose that this thesis cannot explain anymore the behavior of the big business, since we found two factors that were not contemplated in Chandler’s theory: (a) the internationalization of the industry; and, (b) the pressure of the shareholders to generate wealth through the operation of valuable resources.

Industries that tend to the convergence, as it is telecommunications, competitors develop more a product-related diversification strategy. Alestra, Avantel, Axtel and Telmex initiated as telephony companies—long and local services—in order to quickly become telecommunications companies. We can identify three contextual factors that pressured these companies to change their strategy: (a) the Mexican economic opening
process in this industry that promoted the industrial structure which we know today; (b) the technological development of the industry worldwide—Internet, for example—and the obsolescence of the industry in Mexico at the time of the economic opening; and, (c) the proximity, through strategic alliances, of the Mexican companies to the main technology developers in the world. Given this, these companies had viable access to a wider variety of products and with more legislative comfort to operate them.

On the other hand, we identified three factors in the internal dynamics of these companies that, also, we considered pressed for this strategy to occurred: (a) immersion in the national market by all competitors since the beginning; (b) technology subordinated to the service concept; and, (c) constant search for product niches and markets forgotten by Telmex. From this discussion, we concluded the following theoretical proposition:

**Proposition 1:** A strategy of product-related diversification is a necessary condition to develop a multidivisional structure.

Chandler (1962) found in his study that the divisions were in charge of the operation of the allocated resources and, that they could multiply them by means of product innovation through the development of their own technology. The divisions had complete freedom to find the appropriate markets for their products and, thus they initiated a growth process independent from other divisions, and from the same central office. Innovation was a competency of the divisions. It was clear that the divisions were designed by products. Nevertheless, in an industry of recent economic opening and flourished by world-wide technological development—but not local—the thesis to structure by product oriented divisions seems not to notice market particularities. In constrained markets, with extreme differential needs, as it is Mexico, where a tradition for technological innovation does not exist and therefore, companies incapacity to manage their technological developments, a multidivisional structure by markets provides more light to a product-related diversification strategy.

The evidence that we presented above indicates how the technological strategy is subordinated to the concept of service in the telecommunications big business in
Mexico. The four organizations studied understood the need for a market definition in order to create their product portfolio. Alestra changed its organizational structure to adapt its technological infrastructure resources according to its costumer needs. Avantel, decided to concentrate in the increasing demand of data transportation and it only focused on the corporate sector. Axtel identified, first, costumers’ needs and later evaluated the products that would be offered to them. Telmex, on the other hand, initiated with deep efforts to reorient its organizational culture to quality, productivity, and growth. In addition, the company bet to dedicate its infrastructure to be a carrier of carriers. Finally, the evidence in this study presents an absence of signs towards the subject of innovation. Simply, the concept is nowhere in the official discourse. For this reason, a multidivisional structure by products would be out of the line considering the resources and services of these companies. We transformed our conclusion of this discussion in the following theoretical proposition:

**Proposition 2:** A high market dependency is a necessary condition to form a multidivisional structure with units oriented to the market.

The roll that Chandler (1962) gave to the divisions of the big business, by its decentralized condition, of growth and innovation had a limit. The growth of the divisions was exponential. Resources were multiplied because of their allocation by the central office, as well as by the strategy of the division. The central office became aware of several organizational problems generated by this decentralization: (a) lack of communication between the central office and its divisions; (b) strategic disconnection among the divisions as well as between the divisions and the central office; (c) incapacity of the central office to process all the information provided by the divisions; and, (d) uncontrolled volume of decisions demanded to the central office by the divisions. All this forced the central office to incorporate diverse control and coordination mechanisms for and among the divisions. For example, vice-presidencies and administrative staff were added in an attempt to group the divisions by products synergy, more than to make the central office’s work efficient. Centralization and growth do not go hand by hand for Chandler or for Hofstede (1991; cited in Montaño, 2000).
In the context of the Mexican telecommunications industry we found that: (a) strategy develops around the products that the markets demand; (b) markets are small; (c) in spite of growth, business are born functional and centralized and they become multidivisional and centralized; and, (d) the competing business belong to traditional economic groups and are governed by entrepreneurs-managers-owners (Flores, 2002).

Reason why we considered, natural in the Mexican telecommunication business, the divisions’ top managers are part of the corporate central office or headquarters and, therefore, this office centralizes strategic and operational decisions. In this same vane, we did not identify the organizational problems that Chandler (1962) found in his study. We found a smooth process of organizational transformation with the centralization as a constant dimension. We assumed that this pattern of restructuring seems to be successful because it fits with the idiosyncrasy of the Mexican national character, and we attributed it more to a cultural factor of power distance (Hofstede, 1980). Under this scenario, the divisions’ units only have left the generation of information so that the corporate office has better elements for decision making and, thus, to operate what it is decided at the top management level.

For example, Alestra has a functional structure around administrative and staff activities, by ‘market business units’ at the second level of authority. Avantel has centralized the commercial and marketing functions, and technology tells them how deliver and invoice the product. Axtel, after several restructuring changes, centralized all the regions in corporative functions and only decentralized costumer service by operational units named ‘strategic business units’. Telmex, on the other hand, continued with its multidivisional structure that had time before the privatization of the company. Nevertheless, it inherited the centralization of the divisional directors that are part of the corporate office. Santos (2002) identified the functions of the corporate divisions with the primary target to establish the business policies of the institution, to authorize investment and infrastructure programs, to establish operational goals and policies as well as to appoint top level personnel. Telmex and its directors are conscious that the centralization of the company is a consequence of the divisional directors being part of the corporate decisions. The following theoretical proposition contains the elements discussed in this section:
*Proposition 3: The insertion of the divisions as part of the corporate office is a sufficient condition to centralize strategic operational decisions.*

The study of Chandler (1962) at the divisional level determined that these had such a decentralization that the directors were highly motivated to diversify because of the freedom they felt to open new businesses or to create new divisions. This attitude was facilitated by the understanding that the divisions developed competitive advantages—production, distribution, and research and development. For the divisional directors it was clear that they had to innovate and to improve products and processes because otherwise their competitors would do it. We interpreted this as a decentralization of the functions that add competitive advantage to the division. Therefore, in the process of growth of the big American business the division was the owner of all those functions that added value to the company, as well as those that only facilitated operations.

The internationalization of the industries allows us to question this diversified model of functions—the divisions—under one administration—the corporate office—because it prevents the development of industrial specialization. Moreover, the war for technology standardization, in particular, in the telecommunications industry among the big world-wide suppliers situates under interrogation this model. The transformation of this industry is oriented towards the integration of all its actors—the old and new ones—around the supply chain. This integration allows the emergence of business forms that go from cooperation to competition in the same scope of the market—i.e. through strategic alliances. Nevertheless, this industry is composed by powerful technology suppliers that are able to concentrate the economic and technologic power, thus, obtain domination for the future of the industry. Therefore, it is natural to find that hardly a technological supplier is allied in exclusive with an operator of telecommunications services. Furthermore, technology suppliers are varied and extremely specialized; its administration requires a centralization function at the corporate level.

The Mexican telecommunications companies maintain multiple alliances with technology suppliers. For example, Alestra has suppliers such as Lucent Technologies
and Alcatel, among others. Avantel has suppliers such as Alcatel, ICA, Fluorine Daniel, and Northern Telecom, among others. Axtel, on the other hand, has Nortel Networks as its main supplier. Finally, Telmex is supplier of these three big telecommunications companies in México—Telmex positions itself as a carrier of carriers. The administration of the technology in the studied companies, we found it to be at the top management level within the corporate office. The theoretical conclusion of this discussion follows next:

*Proposition 4: The establishment of multiple alliances with technological suppliers is sufficient condition to centralize at the corporate office the strategic technological decisions and the allocation of resources.*

Chandler (1962) found innumerable organizational adjustments among the central office and the divisions during the restructuring process of the big American business. Nevertheless, Chandler reduced these adjustments to power games among the divisions and the central office, or to the creation of new hierarchic levels for control and coordination of the divisions. In order to advance in the study of the multidivisional structure it is necessary to identify mechanisms that allow the organizational adjustments among the units without causing conflict. The standardization of telecommunication services could be a mechanism that facilitated the centralization of the operation and the decisions for resources allocation. With the purpose of seeking standardization, management information systems were adopted by Mexican companies that allow the centralization of many decisions—i.e. SAP and CIBEL helped to standardize daily work, therefore, to centralize management decisions. In addition, there were other social mechanisms such as work meetings used to standardize procedures.

The telecommunications companies in Mexico matured quicker than companies in any other industry. Alestra, Avantel, Axtel, and Telmex faced a redefinition of the market early in their organizational cycles. Reason why they transformed their product portfolio so rapidly—less then seven years. This facilitated them the understanding that a company in telecommunications services requires standards that are demanded by a
specialized market. We found certain constant elements in the operation of these companies that make us think about this proposition as determinant of the centralization process: (a) the use of formalized procedures to offer services or new products; (b) the use of high tech suppliers; (c) one of the main functions of the corporate office and the divisions is to develop the business operation policy of the company nation-wide; (d) companies invest large amounts of money in the technological training of their technical personnel; (e) the investment in technology—not its development—is a priority for these companies.

For this reason, we found companies with organizational entities that have their responsibilities and activities clearly defined through standardized formalization procedures. Traditionally, the organizational principle is that the process and products standardization allows the centralization of decisions and the decentralization of the operation (Pugh, Hickson, & Hinings, 1969). However, it is important to mention that the early organizational structures of these companies projected a ‘test and error’ than a strategic planning. This is reflected in the following theoretical proposition:

*Proposition 5: The search for standardization of services is a necessary condition to centralize at the corporate level the operational decisions and the allocation of resources.*

The organizational structure of the big Mexican business in the telecommunication industry is defined as multidivisional centralized. The proposed conceptual model and its elements are outline in Figure No. 1.
Conclusions

Our aim in this work was to advance in the study of the big Mexican business by developing a conceptual model that defines the structure of organizations competing in the telecommunications industry in Mexico. The theoretical lens that we used was the proposed by Chandler (1962) in his study of the big American business. Chandler argued the importance of a decentralized multidivisional structure to define modern organization.

In this work we demonstrated how big business can generate other type of organizational structure and also to be able to growth: the centralized multidivisional structure. The innovation that is required for growth is obtained from large technological organizations by means of agreements of collaboration—i.e. strategic alliances—or by outsourcing the research and development function—i.e. Telmex’s finances a laboratory at the MIT Media Lab. Innovation, as a strategy, is not practiced in these companies because it is replaced by the strategic alliances with foreign suppliers. In addition, there is little tradition of technological innovation in Mexico—from specialized groups or
individual talents. Nevertheless, innovation must be present in the organizational structure design, either generated internally or replaced through alternative strategies.

The proposed model was constructed by the understanding of the relationship of the variables that emerged from the empirical study and not by those discussed conceptually in the literature. Therefore, this model could be only valid for the Mexican context and its telecommunications industry. Future research will allow us to know if this model could be used to understand the behavior of big Mexican business in different industries. In this way, Mexican organizations could make their growth process and innovation strategy more efficient and adapt their organizational structures to our local mentality.

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