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## *Full Length Research Paper*

# **Segment Analysis of Mobile Phones in Mexico: Iusacell**

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**The aim of this paper is to analyze the telecommunications industry focusing on the segment of mobile telephony in Mexico on the role of the company Iusacell plays. It takes as starting point the theory based on the industry for strategic business management, by analyzing the concentration of this oligopolistic competition market presents. The methods used to determine the level of concentration are the Herfindal and Hirschmann Index and the Index of Dominance (Pascual), then the results obtained will be used in Games Theory to determine possible strategies that can help this company to expand its market or even in the process of strategic planning, which can be attended by managers of the firm.**

**Keywords:** Industry, Iusacell, market concentration, oligopoly

## **INTRODUCTION**

The offer of phones in Mexico is young and within the telecommunications industry has become very important. Less than 30 years of the commencement of service in the country, it marked a watershed in the way they communicate in Mexico, even displacing the fixed telephony segment showing as a perfect replacement for it. The growing market in this area is mainly due to the ability in the world, to penetrate the consumer tastes through advertising campaigns that managed to turn the cell phone, initially in a distinctive luxury item to a front need (after).

Rates of cell phone users have had ups and downs, starting with a select few niche. This segment has grown exponentially to achieving double-digit rates in recent

years of the first decade of this century. Past evaluations have shown numbers below those two figures. However, it remains an ecosystem trends to increase the number of users, which in times of post-recession, are enviable for any industry.

In the present work it can be seen as though Iusacell began operations as a leader. The fact that its products were intended to be for premium market niches that resulted in an opening for its rival Telcel. Telcel took the space without hesitation, which is now the higher reach nationwide-operator, reaching strongly extended in less affluent segments. Based on the above, in this work it is analyzed the behavior of the segment of mobile telephone in Mexico, focusing primarily on the role that it

plays in lusacell Company, based on the theory discussed in the industry. Currently, Telcel has established as a power capable of displacing lusacell to the bottom in the number of users.

The aim of the industry analysis is to provide the needed tools for management of a firm can know what features of the market environment are crucial to the profitability of this. In addition, to identifying external factors conducive to a better performance. It is important to know how that is given the proper context of the market and the assets of the company to operate properly (Saloner, Shepard and Podolny, 2001). In that sense, this paper discusses the behavior of mobile telephony segment in Mexico, focusing primarily on the role that the company lusacell plays, the high market concentration that presents and some strategies that the company can use to try to reduce this.

### Defining the problem

Studying the environment in which lusacell interacts is important as it can be inferred the considerable disadvantages to the leader of the mobile phone segment, and for various reasons related to the nature that this market is born. In Mexico the market structure of the mobile telephony segment is an oligopoly because there are few competitors, but not enough for them to have a negligible effect on the price (Varian, 2010). The four major operators that provide service are: Telcel, Telefonica Movistar, lusacell and Nextel; Grupo lusacell latter represents the premium brand and also has its brand value known as Unefon.

However, the lack of regulation has created a mobile market that tends to monopoly because of its high concentration, although by its nature cannot be considered as such. It is also important to note that the strategic variable of this market is the infrastructure and the capacity to provide telephone signal as much as possible geographically in the country where the leader Telcel, has great advantages to be discussed herein.

Based on the foregoing, it appears that lusacell is a company that has lagged behind in the number of users and because of this it is important to the question of whether does the study of the industry is essential if the company has a parameter from which to generate strategies to help her have a growing market?

It starts from the assumption that the industry inhibits the growth of the firm as it interacts in a highly concentrated market with a tendency to monopoly.

### Background

For an analysis of an industry or a segment thereof, it is important to define it. It is considered as the group of companies that produce both goods, such as services with some similarity to each other (Peng, 2012). So Kuhlmann (2010) argues that the behavior of telecommunications in Mexico is the result of an interaction of technological, regulatory environment and policies of the industry and market environment of coverage, i.e., models and strategies business on the one hand and as agents which determine both the supply and demand for their services on the other.

To have a strategic vision based on industry, Porter (1980) suggests the "five forces framework"; which are 1) the intensity of rivalry among competitors, 2) the threat of potential entry, 3) bargaining power of suppliers, 4) bargaining power of buyers, and 5) the threat of substitutes. Based on the above, this paper will address some of the forces determining both the performance of the industry as the firm lusacell, i.e., the result of business conduct.

As to what is meant by a high degree of rivalry, it is important to note that this often shows frequent price wars, proliferation of new products, campaigns of intense advertising shares competition and reaction high cost (Coor, Roller & Leleux, 1999). In this regard, it should be emphasized that this sector in the country shown an interesting phenomenon that has been characterized by high prices; OECD (2012) claims that are among the highest of its members, even though Mexico is the country with the lowest GDP per capita.

In addition to strategic wars, the number of competitors is crucial to measure the level of rivalry in Mexican mobile telephony. The more concentrated the industry is, it will be less intense competition (Peng, 2012). It is important to note as will be seen, the Mexican telecommunications market is dominated by one company, which has approximately 80% of the fixed telephone market and 70% of the mobile phone.

Continuing the vision of Porter (1980), when talking about the threat of companies wishing to compete in this market, it is considered that the dynamics has shown that, for an operator to enter and compete, must face important barriers such as infrastructure sharing, the need to apply for rights of way and the fact that it is not required to share operators, as may be conduit and cell phone base stations, which also is reflected in the monopoly power of leader (OECD, 2012).

In our country the operation Telcel had its beginnings in

1984 when it won the concession to operate the mobile radiotelephone network from analogue of the metropolitan area of Mexico City under the name "Radiomóvil Dipsa SA de CV" (Robledo, 2007). Subsequently, the Secretariat of Communications and Transportation of the Federal Government directed its efforts to support it in 1989, dividing the country in nine geographic regions for the company, from which arises the lead. In the same year, began operations Iusacell in Mexico City and later begin its expansion.

By 1990, the Mexican government initiated the privatization of Telmex who at the time was the sole operator of fixed telephony, long distance and had a cell national concession in Band Cell B in each of the regions. Among the effects that brought the process of globalization for immersion in Mexico in terms of mobile phone, it can be observed organizations that have landed in Mexico and Mexican companies going abroad: Telefonica (Movistar) and America Movil (Telcel) respectively, who in turn, are the most important operators in Latin America (Kuhlmann, 2010).

Telcel currently operates concessions Band Cellular PCS B and D in each of the nine regions, which generates a significant advantage even market penetration against its oldest competitor that operates Iusacell Cellular A-band connection in regions 5, 6, 7, 8 and 9 as well as the granting of PCS band E in regions 1 and 4. In addition to the grant in the 1900 MHz band in the other regions of PCS, on the other hand, it also has an advantage against its closest competitor, Movistar, which operates the concession Band Cell A in regions 1, 2, 3 and 4 as well as a concession in Band E for PCS nationwide (Iusacell, 2007). Based on the above and as will be seen, it can be said that the strategic variable is the infrastructure segment and signal range of each company.

From the above it can be observed that the leader has advantages since taking the concession in nine regions of the country. Even today some operators are in the need of having to pay charges to opponent's Telcel for the use of its infrastructure, making it a powerful supplier with which other firms must negotiate and automatically credited a marked disadvantage because their input costs will not be the same as those who are followers in the segment. Moreover, this market despite its shortcomings is very profitable due to its high penetration, while in 1990 the mobile phone had only 64,000 users limited only to people with higher incomes, according to the official website of INEGI users (2014). The 2013 closed 105 005 729 agents who use this service in the country.

A watershed for growth in this segment is detonated and it was the beginning of the mode "calling party pays"

between cells in 1999 and that for countries like Mexico, these systems are successful because they focus on lower-income consumers, allowing them to control their telephone expenses based on their needs and especially their budget constraints. While on one hand this strategy may have caused a decrease in the power of price discrimination operators turned out to be a strategy that generated significant market uptake (IXE, 2008). It can be seen that the bargaining power of consumers who may have this service, is that increasingly opt to pay the lowest price possible without neglecting the importance of coverage.

### A. The mobile phone in Mexico

Less than thirty years ago telephone companies begun to offer mobile phone service in Mexico, and it has developed into a rapidly growing market. Comparing with fixed mobile, it is important to ask if it is talking about consumer preferences, and if the users of phone services behave as substitutes or complementary (Grove, 1996). In one hand, it can be observed that in Mexico these preferences have shifted to the acquisition of cell phones replacing landlines. Between 1997 and 2007, fixed telephone lines increased from 9.5 to 20 million, while in the same period mobile users increased from 3.3 to 72.8 million due to the benefits this service provides (IXE, 2008).

In this sense it can be said that while cell phone use in the beginning was a perfect place for consumers in fixed telephone complementary good, it later became a substitute that has shifted. Based on the vision of Porter (1980), firms interact in the market; can be calm because the technology has not yet shown any product with enough features to dare someone to ensure that cell phone use is at risk of being replaced by any other device.

Moreover, it is important to note that although Mexican mobile services at its inception was considered a luxury, nowadays is a tool of popular use in the low-income population because of its functionality, which makes it a required good. While in 2003 only 9% of those located in the lower socioeconomic levels were cell phone users, this figure tripled two years later. This segment has large advantages over landlines although in rural areas do not have the necessary infrastructure to provide that service. Despite the lack of infrastructure, the use of mobile technology given its flexibility, it achieves greater penetration in the rural market (Piedras, 2006), highlighting once again the strategic variable in this service.

As noted in recent years, the mobile telephone services

have grown at double-digit rates and have become more important than traditional landlines. Just to mention a few examples, it can be said that at the end of 2008, despite being a year of economic crisis, the number of mobile lines increased 13.4% for that year, an enviable rate for any industry in an economic recession period (Mendez, 2008). Mendez (2008) argued that while it was likely that growth tended to slow down, the operators would have to offer more services that generate value for consumers and thus belong increasingly to their preferences, since, as he argues, the demand for this segment is driven by convergent offer more and better services.

In this sense, Mexican Business Web (2013) reported that in 2012 revenues of mobile telephony in Mexico were 240 thousand 377 million, representing an increase of 8.6% over 2011, and this in turn on just one 2.2% compared to 2010. It is important to note that a slowdown in growth showed in these years by not increasing by two percentage figures, and that by the end of that year, the growth of market Telcel, the leader, was 7.7% compared to the previous year, while its closest follower, Telefónica Movistar, had a 8.8% decline in its market share, which speaks that Telcel has the monopoly power for this segment.

In Figure 1 it can be observed how the number of mobile consumers has increased in Mexico and its annual growth rates over the past 10 years has been decreasing (red line), although it is important to note that this service continues to capture the market.

### **Iusacell and Telcel**

Grupo Iusacell SA Ltd., was established with the national laws on 6th August 1989. Their trade name is Iusacell. However, its operating subsidiaries marketed both its products and services under the "Iusacell" and "Unefon" among other brands. In the field of mobile telephone, the company is mainly engaged in commercial activities with operating concessions in five areas of central and southern Mexico.

Telcel in turn, counts with a cover band in all regions of the country and also is the head of its infrastructure. It has created a barrier to stop the entrance of Iusacell wanting increasingly dabble in areas that do not have the same extent and / or penetration because the investment required is very high, showing once more the monopoly power of this leader.

In 2007, realizing the relevance strategically had to have greater coverage to provide this service, the company invested a total of approximately \$ 110.4 million in capital to acquire, construct and operate its network nationwide PCS and looking manifest the preferences of

consumers nationwide to expand their market (Iusacell, 2007). Iusacell as such has always been considered a premium brand (focused on a niche select market brand) and has focused on niches of more purchasing power in Mexico. Because of that, sometimes the Mexican average consumer when choosing the service provided by this company or any other, possibly its income has pushed him to prefer the prices of competitors, so that in 2007 the Grupo Iusacell merged with Unefon Holdings.

The latter company disappearing as Unefon and subsisting as Grupo Iusacell. It is noteworthy to mention that Unefon was the holder of concessions in the 1900 MHz, 38GHz and 7GHz band at national level, representing to cover the entire country now from a brand value, focused on lower-income consumers mark (Iusacell, 2007). Iusacell also makes use of two "generic strategies" to compete in the industry (Porter, 1985). One of this strategies focuses on consumers by gating more noticeable on their income and other strategy focuses on price leadership as it currently has the lowest rate on the market, 75 cents per minute (Iusacell, 2007).

The merger was decided strategically in order to address their disadvantages in the field of consumers with different incomes in the country and also the barriers to entry to the segment that by its own nature has. Thus, the merger can cater to the niche coverage at national level. The services offered by Grupo Iusacell are aimed at any type of preferences that consumers could demand based on their communication needs. Among the services offered to the market Iusacell are the following:

- 1) Post-payment
- 2) Prepayment
- 3) Hybrid plans
- 4) Roaming
- 5) Long distance
- 6) SMS
- 7) MMS
- 8) Data

In the post-paid service is important to emphasize that its plans are designed with the aim of positioning the brand as the best alternative to the high value segment. Meanwhile prepaid plans cater to consumers demanding less specific and also most poorly used cell.

### **METHOD**

This paper focuses on reviewing general aspects of the mobile phone market based on Grupo Iusacell. To carry out this research, it is limited to use of economic analysis techniques such as indexes of market concentration, specifically the Hirschmann Herfindal index (IHH) and



**Figure 1.** Historical development of mobile subscriptions.  
Source: The Competitive Intelligence Unit (2013).

**Table 1.** Market share last three years, mobile telephony

OPERADOR	2011	2012	2013
IUSACELL	5.2%	6.1%	7.2%
TELCEL	69.8%	70.7%	70.3%
NEXTEL	3.9%	3.9%	3.1%
MOVISTAR	21.0%	19.3%	19.4%

Source: Based on data provided by The Competitive Intelligence Unit (2013).

Pascual. Both indices are measures of economic use to measure market concentration and lack of competition in an industry.

### Formuls

Hirschmann Herfidal index is calculated as follows:  
 $VT = \sum_{i=1}^n X_i$  Where:  $P_i = X_i / VT$  Where:  $P_i$  = market share of firm  $i$   
 $H = \sum_{i=1}^n P_i^2$   $1/n \leq H \leq 1$   $x_i$  = value and pinpoint the participant  $i$   
 $VT$  = total market value of the  
 $H$  = Herfindal-Hirschmann Index

Pascual index or index for market dominance. It has the same function as the IHH. It is calculated as follows:

$D = \sum_{i=1}^n (p_i / H)^2$  Where:  $D$  = dominance index  
 $P$  = Market Share  
 $H$  = Index Herfindal - Hirschmann

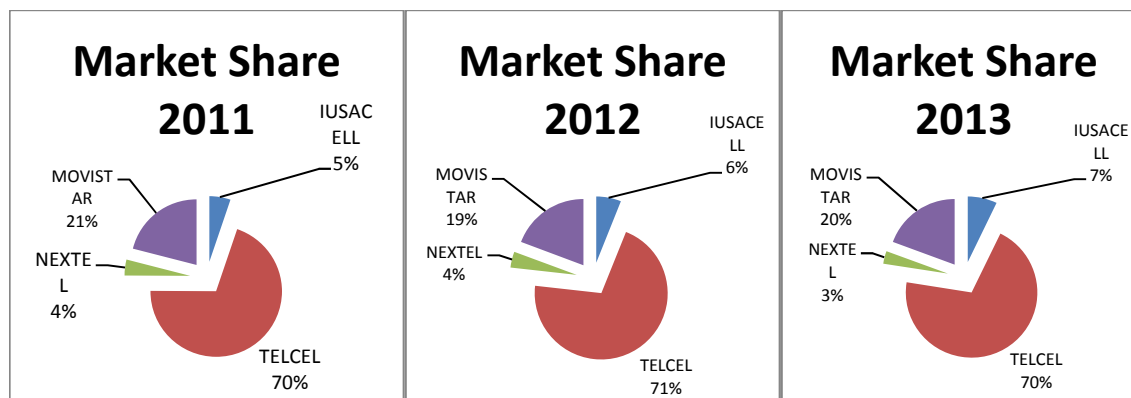
Hirschmann-Herfidal it is calculated in the same form:

## ANALYSIS OF RESULTS

### Concentration index

It is known that a monopoly is when one company dominates a market completely, which is usually under government regulation. Telephony in Mexico was a monopoly until 1989 when the privatization of the monopoly was announced looking to open the market to competition. Despite that effort, today's market share of new entrants has been as low as a few percent of the total, so it can be considered the leading company Telcel, a company with monopoly power for its market share (the Competitive Intelligence Unit, 2013).

From the above, it is important to note that although Mexico made the decision to establish an economic growth through trade liberalization (strategy urged to be reflected in the mobile sector for the benefit of



**Figure 2:** Market share for the last three years.

Source: Based on data provided by The Competitive Intelligence Unit (2013).

**Table 2.** Concentration indexes.

Operator	IHH 2011	Pascual 2011	IHH 2012	Pascual 2012	IHH 2013	Pascual 2013
IUSACELL	.002704	.00002549	.003721	0.012650754	.005184	0.01791087
TELCEL	.487204	.08276671	.499849	1.699399766	.494209	1.70750602
NEXTEL	.001521	.00000806	.001521	0.005171136	.000961	0.00332028
MOVISTAR	.0441	.00678127	.037249	0.126640129	.037636	0.13003344
<b>Total</b>	<b>0.535529</b>	<b>0.08958153</b>	<b>0.54234</b>	<b>1.843861784</b>	<b>.53799</b>	<b>1.85877061</b>

Source: Based on data provided by The Competitive Intelligence Unit (2013).

consumers), the market for mobile phones has a small number of competitors so you can consider it as an oligopoly, ie, that the few bidders individually control a significant share of the market and have the ability to collude, it can be as much as benefit and harm social welfare (Varian, 2011).

From the above, it is important to note that although Mexico made the decision to establish an economic growth through trade liberalization, a strategy urged to be reflected in the mobile sector for the benefit of consumers, the market for mobile phones has a small number of competitors so it can be considered it as an oligopoly. I.e., that the few bidders individually control a significant share of the market and have the ability to collude, it can be as much as benefit and harm social welfare (Varian, 2011). This pseudo-oligopoly is considered as such, because although there are several competitors with its percentage control of the market, much of it takes it one company, as shown in the following table relating the magazine market between competitors in the past 3 years.

Table 1 shows the monopolistic power of Telcel in this segment but also the company in question, Iusacell, is

the third best positioned in the market and in recent years has grown at rates of 1% year, has grown, although this should boost its directors to seek strategies that can continue positioning preferences of new users. Figure 2 shows the observed in Table 1.

Then the index table concentration Herfindahl-Hirschman Index (HHI) and Pascual (IP) for the cell phone market by brand the last 3 years are presented.

Calculating both indices for the market of mobile telephone in Mexico with major operators and their respective share in the segment, it can be seen that although these denote a high concentration, although in the last three years there was a higher and lower in its tendency, The Competitive Intelligence Unit (2013) claims that it is displayed in a decline since the late nineties levels were higher than .70.

It can be seen that Iusacell has had a growth market, although this is difficult because of the nature of the competition is so you should focus on two things:

- 1) To plan a growth strategy and
- 2) To identify the extent there is a market at the expense of its top competitor's participation, not necessarily the leader.

Table 3. Matrix payments.

Juego de Colusiones: Iusacel (con Movistar) v.s. Telcel (con Nextel)		TELCEL	
		Coludir	No Coludir
U S A C E L	Coludir	(26.6%, 73.4%)	(26.6%, 70.3%)
	No Coludir	(7.2%, 73.4%)	(7.2%, 70.3%)

Source: Based on data provided by The Competitive Intelligence Unit (2013)

### Interaction (games)

In this final section an example will be given by constructing a game between all companies in the segment, which is an excellent tool to analyze the market in terms of prediction and abstraction through the use of a strategy. Game theory is a mathematical tool applied to pose models studying interactions between economic agents and their incentives to perform decision processes.

The game will be collusion between the four companies; nature will be observed when Iusacel chooses or not to join Movistar in order to cover major market and be a stronger competitor to Telcel, who in response to this action, it can choose both companies to face alone or integrate the weaker opponent segment, Nextel.

Payments to analyze will the market share, which although still show an advantage for Telcel, eventually the cartel formed by Iusacel and Movistar may mean greater risk for the aforementioned leader.

It can be seen that the dominant strategy Iusacel is colluding, which may generate greater market share. If Telcel, despite the fact to collude does not represent to have higher considerable market scope, decides to collude, it is a Nash equilibrium.

### CONCLUSIONS

While in Mexico, the cell phone use at its earlier entry was considered a luxury, now it is accessible for much of the population and can be considered as a necessary good. Consumers opt to purchase a cell as the increase

in their income allows them even if they are low-income consumers as mentioned. It is a highly functional tool for society.

Similarly, it can be concluded that initially the service of mobile phones proved to be highly elastic as to enter the mode "calling party pays" user growth was exponential because this greatly reduced price of use. However at present, this service tends to be inelastic because on one side is known to be a normal good, which tells that if the price increases, consumers are bound to use, among other things because it is already part of an inclusive culture considering it as necessary. But, history tells that the opposite is true. As this is a highly concentrated segment, companies' followers have spent efforts to increase the number of users by lowering its price, which has not resulted in an increase of considerable demand.

It has been observed in this general analysis of the mobile telephony segment emphasizing the company Iusacel, it plays an oligopolistic market structure and that although it is considered so by the number of providers of that service, the structure is similar for various reasons, more like a monopoly power company Telcel.

In this regard, it is important to note the relevance that strategically has the power to count on infrastructure and scope in terms of a signal relates to consumer uptake of mobile phone service. Based on the above it is concluded that while on the one hand this segment can be attractive for its high market penetration, on the other hand, it represents barriers to entry because it is so concentrated thereof so if a company wants to venture into this, it should think twice.

In Mexico it seeks to establish a regulatory transformation to a more competitive environment in the



telecommunications sector in general. This is because while the market plays an important role, it cannot do everything. State intervention is needed to promote competition because it leads to improved price and quality of service offered.

Telecommunications in the XXI century are fundamental to the development of society so that part under the reform process that is taking place in Mexico on this item. It is urgent for the authorities to legislate in order to improve the different services industry is directing them to a contribution to promote greater competition and that this impact on the improvement of social welfare.

## Recommendations

Considering that Telcel controls this segment, the company in question, Iusacell, is the third best positioned in the market and in recent years has grown although rates of 1% per annum, has grown. This situation beyond discourage, should encourage directors to seek strategies that can continue positioning preferences of new users with two main points:

- 1) Plan a growth strategy and
- 2) To identify the extent there is a detriment to their market share climbs the other competitors, not necessarily the leader not to block that aspect and thus decentralize the segment.

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