DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

Market Concentration - Note by Mexico (IFT)

Hearing on Market Concentration

7 June 2018

This document reproduces a written contribution from Mexico (IFT) submitted for Item 8 of the 129th OECD Competition committee meeting on 6-8 June 2018.

More documents related to this discussion can be found at www.oecd.org/daf/competition/market-concentration.htm

JT03432499

Mexico (IFT)

1. IFT's Technical Standard to Determine the Degree of Concentration in Markets and Services

1.   The Federal Institute of Telecommunications (IFT) uses the Herfindahl-Hirschman index (HHI) as a first approach to determine the degree of concentration of markets and services from the telecommunications and broadcasting sectors. To this purpose the IFT issued a technical standard to be applied not only in the analysis of mergers, but also to scrutinize operations such as the granting and assignment of concessions, movements in the shareholder structure of economic agents, and lease or change of frequency bands of the radioelectric spectrum.

2.   According to the standard, the Institute uses the variation of the HHI (ΔHH) as a measure of the change in the degree of concentration of a specific market. The HHI is calculated by the IFT using variables as the number of users or subscriptions, audience sizes, network traffic, number of frequencies or stations, or any other participation indicator that the Institute may find relevant.

3.   The IFT considers that it is unlikely that a transaction may have the object or effect of hindering, diminishing, damaging or impeding competition and free competition when subsequently to it: (i) HHI ≤ 2,000 points; (ii) 2,000 < HHI ≤ 3,000 and ΔHH ≤ 150 points; or (iii) HHI > 3,000 and ΔHH ≤ 100 points.

4.   It is important to note that the IFT does not consider the HHI analysis and the defined thresholds as the only elements to substantiate its decisions. To do so, it actually considers the elements set forth in the Federal Law of Economic Competition (LFCE) and those provided by the regulatory provisions of the LFCE for the telecommunications and broadcasting sectors, such as barriers to entry, substantial market power, possibility of access to inputs, agent behavior, and the effects of the analyzed concentrations and the economic efficiencies derived from them.

5.   Hereby, we provide the actual text of the technical standard, as well as a couple of examples of actual cases of mergers in which it is used during 2017.

2. Technical Standard for the Calculation and Application of a Quantitative Index in Order to Determine the Degree of Concentration in the Markets and Services from to the Telecommunications and Broadcasting Sectors

Article 1. The aim of this technical standard is to make known: (1) the index through which the Federal Institute of Telecommunications (IFT) shall determine the degree of concentration of the markets and services from to the telecommunications and broadcasting sectors; (2) the thresholds that, as an indicator, will allow the IFT to identify the concentrations that are unlikely to hinder, diminish, damage or impede competition and free access, and (3) the scope of application of the index and thresholds in the procedures that the IFT processes and resolves.

Article 2. The Institute will use the index as a first approximation to assess the market structure and as an indicator of the degree of concentration in the markets and services in

the telecommunications and broadcasting sectors. In the evaluation of concentrations, the Institute will use the index and thresholds as a reference for the probability of them having the object or effect of hindering, diminishing, damaging or impeding competition and free access in the evaluated market.

Article 3. The IFT will use the concentration index known in specialized literature as the Herfindahl-Hirschman index (HHI), which is calculated from the participation of economic agents. Participations will be computed based on variables that the IFT considers relevant for the particular case of study, including without limitation: the number of users, subscriptions, audience size, network traffic, number of frequencies or stations, installed capacity, value or volume of sales.

As an example of how the index is calculated, consider the value of sales variable. Let V_i be defined as the sales value of the *i-th* economic agent, and V as the total sales value, where $V = \sum_i V_i$. Then, the participation of the *i-th* economic agent, which will be identified as α_i, is defined as:

$$\alpha_i = \left(\frac{V_i}{V}\right) \times 100$$

Article 4. The HHI will be calculated as the sum of squares of the shares of each economic agent, that is:

$$HHI = \sum_{i=1}^{n} \alpha_i^2$$

The most relevant features of the HHI are the following:

It can take values between zero and ten thousand points. A low value, close to zero, depicts a situation in which each one of the economic agents has a little significant participation. At the other extreme, the maximum value tells of a situation in which there is only one economic agent. Thus, high HHI values describe markets with a high degree of concentration.

The HHI considers all the economic activity analyzed and reflects the relative position of the economic agents, and it is not necessary to *a priori* find the most important ones to calculate it.

The HHI increases when the number of companies decreases. This trait implies that any merger or complete acquisition between two or more companies is reflected in a higher value of the HHI. The fewer the participants, the more likely it is that changes in the number of participants or participations will modify the conditions of competition for the rest of the economic agents. These changes in the conditions of competition are captured by a variation of the HHI, as it increases when the number of competitors decreases and vice versa.

If it is not possible to identify economic agents whose participations are insignificant ("others"), in order to calculate the HHI the aggregate participation of "others" shall be obtained by assigning a symmetric participation equal or lower than the participation of the economic agent identified as the smallest to a number of agents.

Article 5. In the analysis of concentrations, the IFT shall consider the variation of the HHI (ΔHH, i.e. the arithmetic difference of the HHI value after (HHI_A) and before (HHI_B) the concentration is carried out) as a measure of the change in the degree of concentration in the market to which the concentration belongs.

For computing the HHI_A, the participation of the economic agent resulting from a concentration shall be considered, while in the calculation of the HHI_B, the shares from

each of the economic agents involved shall be taken separately. In both cases, the shares of economic agents not involved in the concentration remain unchanged. To illustrate the calculation of the ∆HH, let us consider the particular case in which two economic agents with shares α_1 and α_2 proposed a concentration. The variation of the HHI would be calculated as follows:

$$\Delta HH = HHI_A - HHI_B$$

$$= [(\alpha_1 + \alpha_2)^2 + \alpha_3^2 + \cdots + \alpha_n^2] - [\alpha_1^2 + \alpha_2^2 + \alpha_3^2 + \cdots + \alpha_n^2]$$

$$= [(\alpha_1^2 + 2\alpha_1\alpha_2 + \alpha_2^2) + \alpha_3^2 + \cdots + \alpha_n^2] - [\alpha_1^2 + \alpha_2^2 + \alpha_3^2 + \cdots + \alpha_n^2]$$

$$= 2\alpha_1\alpha_2$$

As it shows, for the presented example ∆HH I can be obtained from the difference between the value of the HHI_A and the HHI_B or by doubling the product of the shares of the two economic agents that are proposing to concentrate.

Article 6. The IFT shall consider that it is unlikely that a concentration has the object or effect of hindering, diminishing, damaging or impeding competition and free access, when subsequently to it one of the following situations occurs:

   a) $HHI \leq 2,000 \; points$;

   b) $2,000 < HHI \leq 3,000 \; and \; \Delta HH \leq 150 \; points$; or

   c) $HHI > 3,000 \; and \; \Delta HH \leq 100 \; points$.

Article 7. Even when a concentration implies that HHI and ∆HH values fall within the thresholds established in the previous article, the IFT may consider that the merger poses potential risks to have the purpose or effect of hindering, reducing, damaging or opposing competition and free access, if one or more of the following circumstances occur:

   1. The economic agents involved in the merger have or can get to have substantial power in related markets;

The economic agents involved in the concentration reach a participation higher than thirty-five percent;

The acquired economic agent is a disruptive economic agent (known as maverick) that is distinguished, for instance, for introducing or developing new technologies or business models, or for its ability to discipline prices based on its capacities and incentives to expand rapidly;

Within the last five years one or more of the economic agents involved in the concentration have participated in transactions in the same market which taken together with the analyzed concentration, exceed the thresholds referred to in article 6;

The merger can generate incentives to, or facilitate coordination among economic agents that participate in the analyzed market or related markets.

Article 8. In addition to being a reference in mergers evaluation, this technical standard may also be used in the analysis of the granting and assignment of concessions, the sale of shares, subscriptions, disposals, disincorporations or movements in the shareholder structure of economic agents, as well as of the leasing or changes of frequency bands of the radioelectric spectrum.

Likewise, the IFT may use the HHI as an indicator of the degree of concentration for the analysis of the existence of substantial power, conditions of effective competition or other matters regarding free access and economic competition conditions that the Institute has the power to study and resolve in terms of what the Federal Law of Economic Competition (LFCE), the Federal Law of Telecommunications and Broadcasting (LFTR), and the regulatory provisions of the LFCE for the telecommunications and broadcasting sectors mandate. The IFT may also use the concentration index as an indicator of the degree of concentration in related markets.

Article 9. In no case, the Institute shall make its decisions using the HHI and the thresholds as the only elements of analysis. The Institute will consider, as appropriate, the elements set forth in articles 58, 59, 63 and 64 of the LFCE and those related to the regulatory provisions, such as barriers to entry, substantial market power, access to inputs, and agent behavior, as well as the effects of the analyzed concentrations and of the economic efficiencies derived from them.

Article 10. This technical standard shall not be applied at a sectoral level whenever the IFT carries out the procedures provided by the ninth transitory article, first to fourth paragraphs, of the decree that issued the LFTR[1], which explicitly states the calculation and application of the dominance index, the HHI and the ΔHH.

Article 11. In terms of article 110 of the LFCE, the IFT, through its Economic Competition Unit, will offer guidance to any individual or legal entity, as well as to any public authority, regarding the application of this technical standard.

3. TELCEL / MVS MERGER CASE (FILE UCE / CNC-003-2016)

6.   On April 27, 2017, the IFT authorized Telcel to obtain 60 MHz of radioelectric spectrum in the 2.5 GHz band through the acquisition of a MVS Multivisión's subsidiary, DGICRD. The acquired undertaking held 43 concessions to use or exploit that spectrum band, with a coverage of 1,759 localities (which account for 75.41% of the national population). The 2.5 GHz band is ideal for the provision of mobile telecommunications services (MTS) –that include telephony, internet and messages– whose demand has shown an increasing trend.

7.   In this case, the IFT assessed the possible effects of allowing the economic agent best positioned in the provision of MTS to acquire 60 MHz in the 2.5 GHz band. After due analysis, the Institute determined that by the acquisition of DGICRD Telcel would accumulate up to 29.77% of the total spectrum available for MTS. This estimation included the spectrum allocated and available within the next two years in the following bands for MTS: 700 MHz, 800 trunking, 800 cellular, PCS (1900 MHz), and AWS (1.7-2.1 GHz), as well as a 2018 auction announced by the IFT that would allocate the rest of the spectrum available in the 2.5 GHz Band (120 MHz).

8.   The IFT concluded that this level of spectrum accumulation would not limit the availability of this input for the entry of new competitors or for the expansion of the current ones neither that it would generate barriers to entry or effects contrary to the process of economic competition in the provision of mobile telecommunications services.

---

[1] Spanish version available at: http://www.dof.gob.mx/nota_detalle.php?codigo=5352323&fecha=14/07/2014.

9.   One of the tools that were used to reach that conclusion was IFT's *Technical Standard to Determine the Degree of Concentration in Markets and Service*s. Although the technical standard establishes thresholds that allow the identification of operations that are unlikely to affect competition based on market shares (which does not apply in this case, because the accumulation would occur in an input and would not imply a market accumulation), it does offer a reference for situations that require a detailed evaluation in order to know whether an operation does not generate concerns in terms of economic competition. In particular, article 7, paragraph (b), of the technical standard establishes that concentrations that give rise to a participation greater than 35% (thirty-five percent) may indicate potential risks to competition and therefore must be analyzed in depth. Thusly if a merger produces a participation of no more than 35% (thirty-five percent), it is not likely to generate risks to the competition.

10.   Considering the latter, the IFT determined that an operation which would yield an accumulation of around 35% (thirty-five percent) of the available spectrum to the best positioned agent in MTS could be authorized, because a sufficient proportion of the spectrum would be maintained for both its competitors, so they could expand their networks and compete in the provision of MTS, and for the entry of new contenders.

4. Participation in the Holding of Radio Spectrum for Mobile Telecommunications

11.   In order to calculate the share of the available spectrum held per operator, i.e. the amount of MHz with respect to the sum of the total granted spectrum plus the available one that each held, the IFT firstly computed the average amount of MHz granted nationally, weighed with the national population. For example, Telefónica had 20 MHz in the cellular band in regions 1 to 4, which amount to 22.19% of the national population[2]; thus, it was considered that Telefónica had an average of $20 \times 22.19\% = 4.44$ MHz nationally in the cellular band; likewise, DIGICRD held 60 MHz in the 2.5 GHz band in regions that account for 75.41% of the national population, so it was considered that on average it held $60 \times 75.41\% = 45.25$ MHz nationally in the 2.5 GHz band. The results for all operators and all spectrum bands are shown in the following table.

Table 1. Spectrum granted at the national level (average MHz, weighed by national population), February 2017
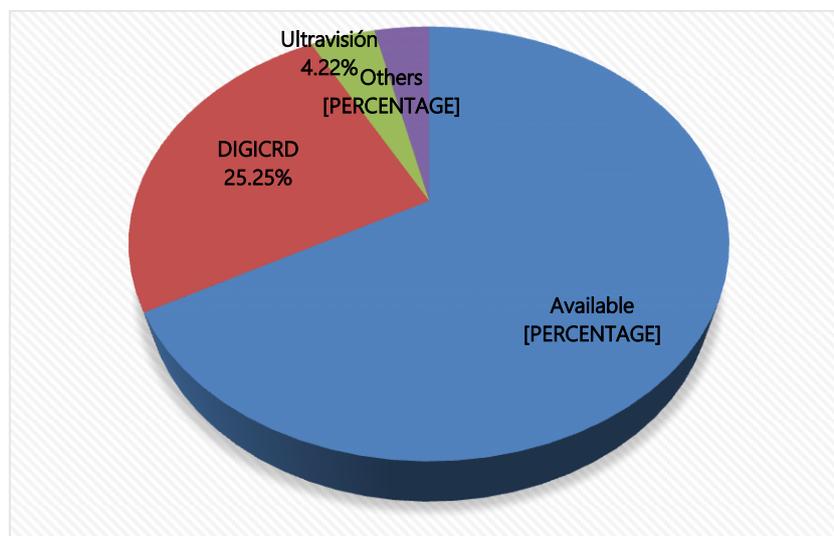
	700 MHz	Trunking	Cellular	PCS	AWS	2.5 GHz	High Bands (PCS+AWS+2.5)	Total
AT&T		22.63	16.93	32.26	50.00		82.26	121.82
Telefónica			4.51	59.34			59.34	63.85
Telcel		2.76	21.51	28.40	80.00		108.40	132.67
DIGICRD						45.25	45.25	45.25
Promtel - Altán	90.00							90.00
Others						13.97	13.97	13.97
Available					10.00	120.00	130.00	130.00
Total	**90.00**	**25.39**	**42.95**	**120.00**	**140.00**	**179.22**	**439.22**	**597.55**

Source: IFT

---

[2] The covered population is obtained based on data from the 2010 Population and Housing Census of INEGI.

12.   By February 2017, DIGICRD was the concessionaire with the highest amount of spectrum granted in the 2.5 GHz band: 60 MHz that covered 75.41% of the national population. As a result of the analyzed operation, the participation of Telcel would go from 0% to 25.25% of the total spectrum nationally granted in the 2.5 GHz band. Since the economic interest group controlled by the Slim family was not a concessionaire in the 2.5 GHz band and the analyzed operation would involve the substitution of one concessionaire for another, there would be no change in the structure of spectrum concessions per operator in this band, nor the availability of spectrum for other operators would be affected.

Figure 1. Participations per operator with respect to the sum of the total allocated spectrum plus the available one: 2.5 GHz band.

Source: IFT

13.   In other bands (700 MHz, trunking, cellular, PCS and AWS) frequencies had been granted to different operators and there was a short-term availability, subject to bidding processes, of 120 MHz nationwide in the 2.5 GHz band, and of 10 MHz in the AWS band.

14.   The frequency bands considered for the analysis of spectrum accumulation present particular features that differentiate them. Broadly speaking, a separation can be made between bands of frequencies lower than 1 GHz (low bands) and those greater than 1 GHz (high bands). The differences between them is observed mainly in their attributes of propagation, permeability and capacity. The low bands:

- • Allow signals to travel greater distances, so that less infrastructure is needed to cover large geographical areas; and,

- • Allow greater penetration of obstacles such as buildings and walls, so the signal can have better coverage in urban areas.

15.   The ability to cover greater distances with less infrastructure is an important advantage for operators because it reduces investment in infrastructure. In practice, it is estimated that one base station in a low band suffices to cover a geographical area similar to the one that would be covered by four base stations in high bands.

16.   The larger number of sites needed to operate in high bands increases the transmission capacity by allowing a decrease in the use of each site. Because of these attribute, the high bands constitute a complementary resource to avoid the congestion of the networks in areas with high density of use. For example, it is estimated that an operator in the 700 MHz band requires five times fewer base stations to cover the same area that an operator which uses the 2.1 GHz frequencies; and that the capital costs for the deployment of a network in the 2.1 GHz and in the 2.5 GHz bands equal 328% and 455% more, respectively, than what is required to do so in the 700 MHz band. Due to the above and the relative scarcity of low band spectrum, these frequencies are the most demanded by the operators of mobile telecommunications services.[3]

17.   In this regard, Altán argued that:

(…) The development of advanced mobile services (4G) requires operators to have an adequate combination of low bands (700-800 MHz) - to achieve greater coverage - and high bands (AWS, 2.5 GHz) - for greater capacity-, in order to serve both rural and urban areas.

(…) The different radio spectrum bands to offer mobile telecommunications services we are considering like belonging to the same relevant market.

18.   Due to the need to have combinations of frequencies in low and high bands, in the processes of allocation of spectrum for mobile telecommunications the regulatory authorities seek to prevent the accumulation of spectrum in both low bands and in the total of bands, for it may go against the public interest.

19.   Considering the above, two scenarios were considered for the calculation of radio spectrum accumulation derived from the operation:

A. One that reviewed only low bands (700 MHz + trunking + cellular); and,

B. One that reviewed all bands (700 MHz + trunking + cellular + PCS + AWS + 2.5 GHz).

20.   As stated above, for the evaluation of the levels of spectrum accumulation, besides the spectrum currently allocated, the IFT also considered the spectrum that will be available for bidding within the next two years.

Scenario A. Under this scenario, the operation would have no effect on the accumulation of radio spectrum, since the frequencies that are the object of the operation are from the high bands.

Scenario B. The levels of radio spectrum allocation at the national level per operator, before and after the analyzed operation, are shown in the following chart.

---

[3] See study "The Radioelectric Spectrum in Mexico, Study and Actions", pages 16-17.

Figure 2. Participations per operator considering all the bands for mobile telecommunications.
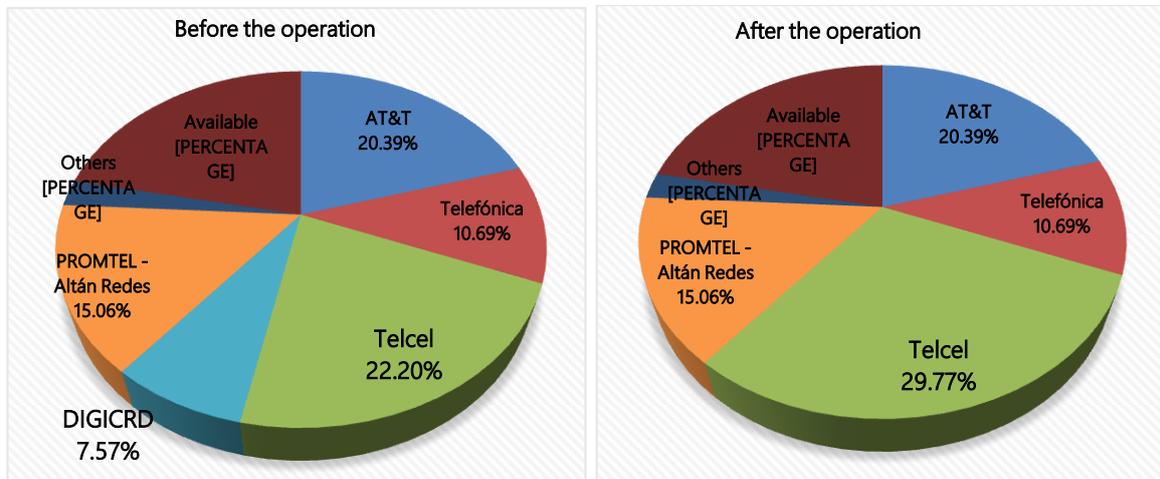
Source: IFT.

21.   Under this scenario, the economic interest group controlled by the Slim family would go from 22.20% to 29.77% in spectrum for mobile telecommunications services accumulation at the national level. It is relevant to note that the accumulation percentage reached in this scenario is below the threshold of 35% referred to in article 7, paragraph (b), of IFT's technical standard:

> *Article 7. Even when a concentration implies that HHI and ΔHH values fall within the thresholds established in the previous article, the IFT may consider that the merger poses potential risks to have the purpose or effect of hindering, reducing, damaging or opposing competition and free access, if one or more of the following circumstances occur:*
>
> *[...]*
>
> *b) The economic agents involved in the concentration reach a participation **higher than thirty-five percent**; [Emphasis added]*

22.   In this case the analysis concluded that the level of spectrum accumulation by Telcel would not limit the availability of this input for the entry of new competitors or for the expansion of the current ones neither that it would generate barriers to entry or effects contrary to the process of economic competition in the provision of mobile telecommunications services.

23.   Consistent with the foregoing, and as shown in the following table, in previous authorizations of concentrations, as well as in the establishment of concentration limits in bidding processes, the Institute has authorized accumulations of radio spectrum below that threshold of 35%.

Table 2. Accumulation of spectrum at the national level (average MHz, weighted by population), February 2017

|	AT&T/Iusacell-Nextel	Telefónica-SAI	AWS - Telcel bidding
MHz of spectrum accumulated by participants in the low bands (A)	39.56	(SAI did not have radio spectrum granted in these bands)	(The bidding was not carried out in these bands)
MHz of spectrum accumulated by participants in all bands (B)	121.82	63.85	132.67
MHz of granted spectrum + available one in low bands (C)	158.34	158.34	158.34
MHz of granted spectrum + available one in all bands (D)	597.55	597.55	597.55
% in low bands = (A/C)	**24.98**	**--**	**--**
% in all bands = (B/F)	**20.39**	**10.69**	**22.20**

Source: IFT

24.   In addition, if international references are considered, it may be noted that the Federal Telecommunications Commission (FCC) of the United States of America proceeds to analyze the allocation or transfer of radio spectrum for mobile Internet access only when the provider has approximately 1/3 (33%) or more of the available spectrum.[4]

Scenario C. An additional scenario, in which only high bands are taken into account, may be considered. In this case the participations per operator at a national level, with respect to the sum of the total allocated spectrum plus the available one, that are attained can be seen in the following chart.

---

[4] *See* https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-63A1.pdf.

Figure 3. Participations per operator with respect to the sum of the total allocated spectrum plus the available one: high bands
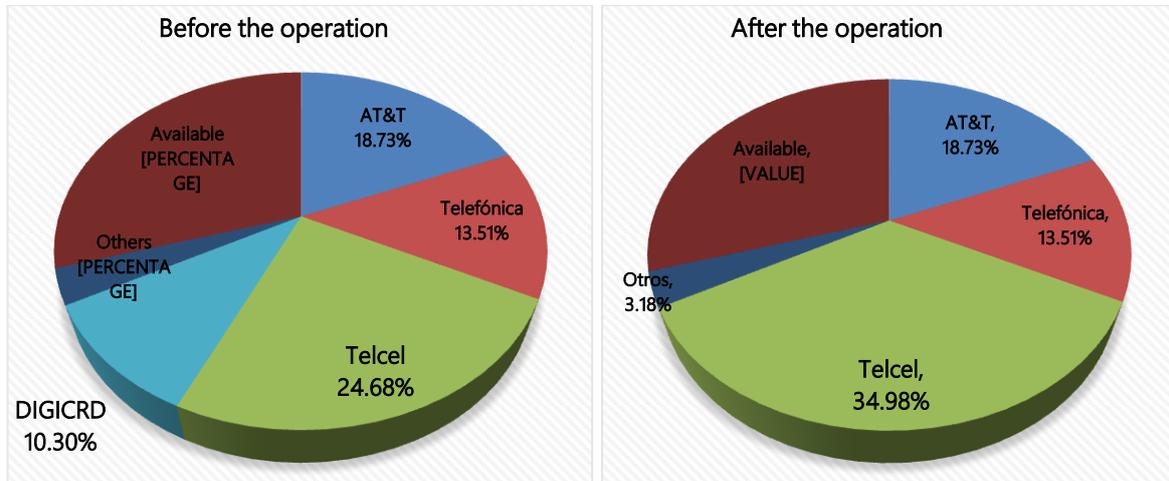
Source: IFT

25.   It may be noted that even under this scenario, the percentage of the participation in the total spectrum for mobile telecommunications by the economic interest group controlled by the Slim family would also be below the 35% threshold after the operation.

5. AXTEL / MATC DIGITAL MERGER CASE (FILE UCE / CNC-002-2017)

26.   On October 18, 2017 the IFT authorized MATC Digital, S. de R.L. de C.V. (MATC Digital), identified as a society that belongs to the economic interest group controlled by American Tower Corporation (ATC Group), to acquire assets consisting in 142 telecommunications towers from Axtel, S.A.B. of C.V. (Axtel). In Mexico, ATC Group participates in the telecommunications sector, mainly through the leasing of sites in towers and auxiliary infrastructure to telecom operators.

27.   One element considered by the Institute in the analysis of the operation was the HHI, which was computed by considering the number of towers and masts with telecommunications equipment installed in the country by supplier and their shares. Applied to the operation, the IHH reached 3,582 (three thousand five hundred and eighty-two) points, with a variation of the HHI of 29 (twenty-nine) points. According to IFT's technical standard, it was unlikely that the merger could have the purpose or effect of hindering, diminishing, damaging or impeding competition and free competition.

28.   Other elements considered in the authorization were that the increase in the number of ATC national towers was marginal; that Axtel used those towers for its exclusive use, and that the ATC Group faces important nation-wide competitors.

29.   In its analysis, the IFT did not foresee that this concentration had or could have the purpose or effect of conferring substantial power to ATC, nor did it establish barriers to entry, prevented third parties from accessing the corresponding services, or facilitated the exercise of any conduct prohibited by the Federal Law of Economic Competition (LFCE).

6. Service Providers and Degree of Concentration

30. Considering the information presented by the parties following article 63, section II, of the LFCE, there are currently two main service providers for mobile RPT concessionaires and operators: Telesites, S.A.B. of C.V. and subsidiaries (Telesites) and the economic interest group controlled by ATC.

31. Telesites, S.A.B. de C.V. was constituted as a result of the split of América Móvil, S.A.B. of C.V., which is part of the preponderant economic agent of the telecommunications sector. As a result of the break up transaction Telesites received 11,766 (eleven thousand seven hundred and sixty six) telecommunications towers and it currently, reports 14,917 (fourteen thousand nine hundred seventeen) towers.[5]

32. The parties stated that they did not have data on the total size of the market, since there is no database or information for this purpose; and that, therefore, they could not reliably estimate the market shares of AXTEL and MATC Digital. However, they submitted the information contained in studies of the TowerXchange company on the nationwide number of towers and masts on rooftops which have telecommunications equipment installed on, by supplier. This information was used to identify and estimate the shares of Mexico Tower Partners, IIMT, Centennial, Torrecom and other smaller operators. The information on Mexico Tower Partners coincided with what was reported by that economic agent to the IFT in 2013[6]. The information for MATC Digital and AXTEL was reported by the parties, and the data on Telesites was taken from that company's first quarterly report of 2017. Overall, available information showed that the group controlled by ATC is the second economic agent with the largest number of telecommunication towers, while Telesites holds the first place.

33. The following table shows the values of the Herfindahl-Hirschman Index (HHI) before and after the operation.

Table 3. IHH in the telecommunications tower market before and after the operation

HHI before the operation	HHI after the operation	Increase in the HHI (ΔHH)
3,552.8 points	3,582.1 points	29 points

Note: To compute the HHI, 9 economic agents with symmetrical shares of 1% each were considered in the "others" category.
Source: IFT with information provided by the parties, contained in page 7 of the CNC-002-2017 file.

34. As shown in the table, the HHI associated with the provision of the service reaches 3,582 (three thousand five hundred and eighty-two) points after the operation, with a variation of the HHI of 29 (twenty-nine) points.

---

[5] Public information of its website, in its 1st. Quarterly Report 2017, available at: https://www.telesites.com.mx/pdf/Telesites/Informacion-Inversionistas/Reportes-Trimestrales/2017/SITES-1ER-TRIM-2017.pdf.

[6] See *"Resolution by means of which the Plenary of the Federal Telecommunications Institute authorizes the realization of the concentration filed under file UCE / CNC-007-2014, notified by Mexico Tower Partners, S.A.P.I. of C.V. and TGA Tower Ventures, S.A. de C.V. "*, Redacted version available in Spanish at: http://apps.ift.org.mx/publicdata/vppift18031593.pdf.

35.   The analysis of the operation concluded that the acquisition of a total of 142 (one hundred and forty-two) telecommunication towers from AXTEL increased the participation of the group controlled by ATC only in a non-significant way for, according to subparagraph (c) of article 6 of the technical standard, in markets with HHI levels greater than 3,000 (three thousand) points, it is unlikely that increases in the HHI of less than 100 (one hundred) points may have the purpose or effect of hindering, diminishing, damaging or impeding competition and free access.