



Information Technologies & Economic Development:  
Telecommunications and Poverty in Mexico



Cristina Casanueva-Reguart  
Antonio Pita

# Content

---

- A. **Definitions of access to Telecommunication Services**
    - 1. Principles involved in the Fundamental Right
    - 2. Requirements for the enactment of a Policy
    - 3. The double challenge of subsidies
    - 4. Dimensions of the problem
  - B. **Public Policies on universal service in Mexico**
  - C. **Evolution of Public Policies**
    - 1. Results of the compliance of Telmex's obligations
    - 2. Service obligations in Telmex's license
    - 3. Preliminary conclusions
  - D. **Government Services for communities through direct subsidies**
    - 1. Rural Telecommunication services for communities with less than 500 inhabitants
    - 2. Public Internet access: Digital Community Centers.
  - E. **Expenditure in telecommunication services by the poor based on income distribution (or concentration)**
  - F. **Conclusions**
-

# Access to Telecommunication Services as a Fundamental Right

---

## 3 Principles

```
graph TD; A[3 Principles] --- B[Universality]; A --- C[Equality]; A --- D[Continuity]
```

### Universality

Every citizen has the right to have access to telecommunications services with high standard of quality

### Equality

Universal access regardless of citizen's location and economic status

### Continuity

Maintenance of the service with quality in an uninterrupted fashion

# Requirements for enactment of Policy for Universal Telecommunication Services

---

The policy of **universal telecommunications services** requires the enactment of a subsidy in order to offer telecommunications services at affordable prices

- The economic rationale refers to the fact that the poor population can't afford these services at market prices
- The social rationale refers to the avoidance of exclusion based on income, as well as on the location of work and habitat.

# The Subsidy for Universal Service has a double Challenge in the poorest locations

---

- On the Supply Side: the *development and/or optimization* of the infrastructure (investment) to allow connectivity, because the level of geographical dispersion of these communities increases the difficulty to provide infrastructure and therefore, the cost of providing the service.
- On the demand side: the *affordability* of the provision of these services, because the people that have a potential demand for them live under conditions of poverty or extreme poverty and therefore, their income does not allow them to have these services at the market price.

# Dimensions of the problem:

---

According to the Population Census of 2005, there were in Mexico 184,748 rural communities with a population below 2,500 inhabitants, and 197,479 communities below 5,000 inhabitants.

These communities are inhabited by over 30 million men and women, that represent 29.1 % of the Mexican population.

In addition, these communities are characterized by their high level of dispersion, since 92.5 % of these communities have less than 500 inhabitants.

---

# Public Policies on Universal Service in Mexico

Under the responsibility of the telecommunications  
regulatory agencies

# Public Policy: 1<sup>st</sup> part

---

The policies incorporated into the Programmes of the Ministry of Communications (1980-2007) are designed to provide access and universal service, the most important being:

- Surveillance on the Compliance of “Teléfonos de México’s” obligation to supply universal service, as comprised in Telmex’s license of 1990, given by the **regulatory** authorities
- The Creation of the “Fund for Social Coverage” to increase coverage of rural telephony aimed at communities with 500 inhabitants or less. Operators have been invited to bid with offer of non-returnable monetary and public resources, like radio frequencies reserved for social purposes.

# Public Policy: 2<sup>nd</sup> part

---

The goals of these Programs have been to:

- ▶ **Increase Rural telephony (1980-2002):** aimed at offering services to communities with less than 500 inhabitants.
- ▶ **Provide Funds for Social Coverage (2002-2007) or “FONCOS”,** aimed at financing the provision of telecommunication services to communities with a population between 400 to 5,000 inhabitants.

## Public Policy: 2<sup>nd</sup> part (continued)

---

- Install **Digital Community Centres** (Tele-centres) in co-responsibility with government services: education, adult education, public libraries, health, e-Government, among the most important.
  - Here the infrastructure procurement is also a result of a public bidding, and
  - The **Digital Community Centres** are operated locally with content provided by the government agency in charge of the public program i.e., education, public libraries, health and e-Government.

# Evolution of Public Policies

Conditions on Telmex's license

# Universal Service Obligations in Telmex's Licence:

---

- Condition III-I Universal Service Objective: everyone should have the opportunity to have access to telecommunication services, regardless of their income level, location of their homes and workplaces, either by a public booth or by a home line.”
  - However, this condition only applies to communities with more than 500 inhabitants.
- Condition III-I On “Regard to Telephone Booths: Telmex’s license established the obligation to provide one booth for every 500 inhabitants in towns larger than this size by 1995 and two of these services by 1998”

# Universal Service Obligations in Telmex's Licence:

---

- **Condition III-2 On “Rural Telephony Networks” Objectives:**
  - For communities between 2,500 and 5,000 inhabitants.
  - This condition could only be fulfilled by Telmex if there were at least 100 applications and an advanced payment equivalent to three months of basic rent
  - Telmex would have 18 months as grace period to deliver the service.
  - After 1998 Telmex was expected to negotiate with the regulator the conditions for the installation of more telephone booths.
- **Condition III-3 On “Programs of network expansion and modernization”:** every 4 years Telmex must agree to carry out the Ministry's (SCT) programs for expanding rural telephony.

# Results of the compliance of Telmex's social service obligations:

---

## Condition III-I "Universal Service Objective:

- ▶ Telmex's license defines as equivalent the service provided by a public telephone booth and the residential telephone line.
- ▶ However, Public Service implies that the end user should move to the location where service is provided and generally it can only be used to originate calls
- ▶ Thus, Public Service should not be considered equivalent to the service that allows users to originate and receive calls at their homes or workplaces



# Results of the compliance of Telmex's social service obligations:

---

## Condition III-I “Universal Service Objective:

- ▶ Given the way in which this ‘universal service obligation’ was drafted, there was an ambiguity on the nature of the commitment for Telmex.
- ▶ Thus, Telmex communicated rural communities mainly through telephone booths.
- ▶ Telmex negotiated a clause which is similar to that used in countries with smaller economies, and smaller public switched networks, such as: Bhutan, Ethiopia, Madagascar, Guinea and Pakistan.
- ▶ The proposed density is far below the minimum standard provided by the Union of International Telecommunications (UIT)



# Results of the compliance of Telmex's social service obligations:

---

Since Condition III-I only applied to communities with more than 500 inhabitants.

- ▶ This released Telmex from serving 170,929 communities, leaving 92.5 % of the rural communities unattended, and
- ▶ This took place in spite of the fact that Telmex was the only company that had the infrastructure to reach these communities, since it is the operator of the switched public network.



# Results of the compliance of Telmex's social service obligations:

---

## Condition III-2 On “Rural Telephony Networks” for communities between 2,500 and 5,000 inhabitants.

- ▶ In a strict sense, this clause is not related to a universal service obligation by the incumbent, but to the expansion of Telmex's commercial services, which could have been very profitable for this company, since this clause assured a lucrative operation within communities that mostly originate and receive long distance traffic.



# Results of the compliance of Telmex's social service obligations:

---

## Condition III-3 “Programs on network expansion and modernization:”

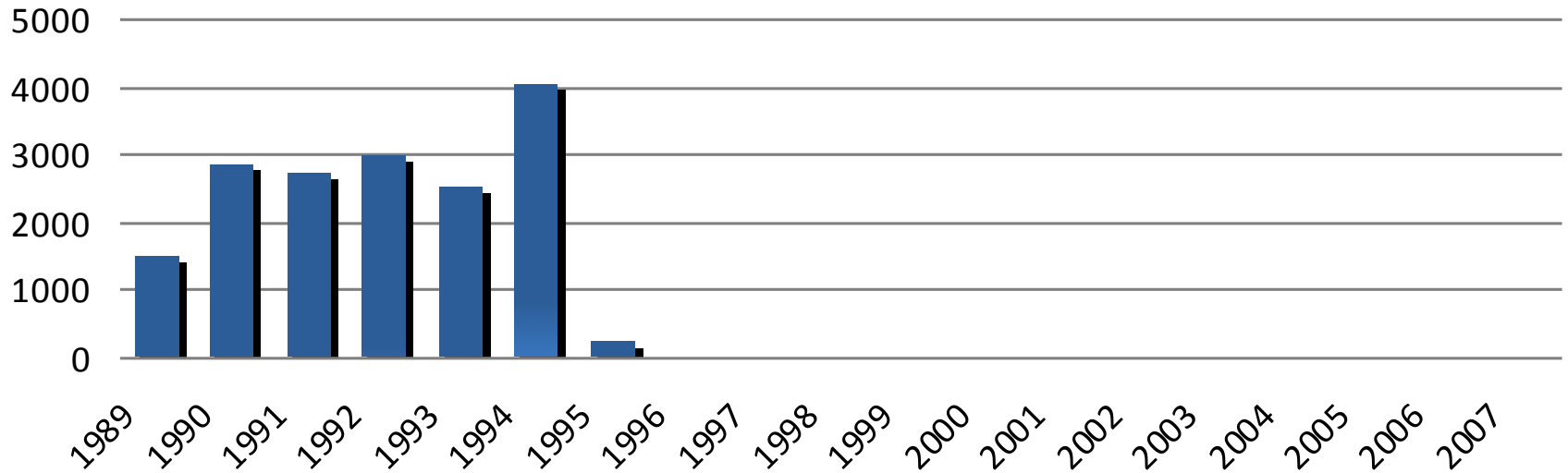
- Agree with SCT programs the expansion of the scope of rural telephony every 4 years.
  - Agreed that the network must grow at an annual rate of 12.0 %.
  - And at least maintain this rate of growth in the years to follow
- 
- ▶ Between 1990 and 1994 the telecommunication network grew at 39.6% per year, an easily attainable goal given the low density (4,350) base of lines in rural areas in 1990 (16,542 lines in 1994).
  - ▶ However, the growth of the communicated areas stopped indefinitely since 1994 (see Graph).
- 



# Results of the compliance of Telmex's social service obligations:

---

**Number of rural communities communicated by Telmex with at least one telephone line (1990-2007).**



# Reasons behind indefinite halt of growth in communication of rural areas:

---

- ▶ Telmex anticipated the liberalization of the long distance services and the entering of new players in 1996.
- ▶ Telmex argued that universal obligations would have to be shared with the entering operators.
- ▶ This argument was short of a justification since Telmex operated the switched public network.
- ▶ Would have created negative incentives for further investment in the expansion of the new networks for areas not covered and would have created barriers of entry for potential new players in the telecommunications markets.



# Results of the compliance of Telmex's social service obligations:

---

- ▶ Before the end of 1994, Telmex should have communicated rural communities with more than 500 inhabitants, according to the 1990 Population Census (and less than 2,500 according to the definition of rural communities by Mexico's Census Bureau).
- ▶ Based on the information provided by Mexico's Statistics Bureau, there are less rural communities of 500 to 2,500 inhabitants than the number reported as served by Telmex.
- ▶ The size of this overestimation is by 2,919 communities in 24 states.



# Preliminary Conclusions

---

- ▶ The analysis on the terms agreed by Telmex in its license and its practical implications allow us to conclude that the “universal service obligations” imposed to the incumbent were not strictly social, but gave Telmex an additional opportunity to expand its network of providing profitable services.
- ▶ The clauses were then conducive to an extremely low increase of telecommunications service in the rural areas.



# Statistics:

---

Among the poorest population, with a monthly income of 102 US dollars:

- Only one household out of five had a telephone line.
- ▶ Similarly, only one person out of every five had a mobile line.
- ▶ 5% had cable or satellite TV, which has the technical capability to offer telecommunication services (triple play),
- ▶ Only 0.2% had access to the Internet in their homes.

# Statistics:

---

Regarding the households of the next decil, with an income of 218.5 US dollars:

- ▶ 45.8 % of the households had a line in their homes, close to the national average (48.9%)
- ▶ 42.8 % had a wireless line (below the national average 50.6%),
- ▶ 12.7 % had a cable or satellite TV, seven times less than the national average (23.5%) and,
- ▶ 1.7 % had access to the Internet in their homes 7 times less than the national average (12.4%).

# Statistics:

---

In contrast, in the decil that comprises households with the highest income:

- ▶ 92.6 % had a telephone line in their homes,
- ▶ 92.6 % individuals had a mobile service,
- ▶ 75.8 % of the households received cable or satellite TV and,
- ▶ 60.1 % had access to the Internet from their homes.

# Government Services for communities

Under direct subsidies

# Services to communities under 500 inhabitants with direct government subsidy

---

- ▶ The State of Mexico has the highest rate of coverage. It is difficult to explain the preference for the State of Mexico (81.6%) which is very close to Mexico City and has a relatively high income per capita, thus giving it better chances to be incorporated to the services provided by the market.
- ▶ In contrast, the State of Chiapas with the lowest income per capita, has a coverage rate below the national average (22.7%). Only 3 homes out of 10 have a home telephone line.
- ▶ Similarly with Oaxaca, which is one of the poorest states in Mexico, the rate of coverage is only 26.1 %, where only two out of ten homes have a telephone line.

# Public Internet access through Digital Community Centers

---

- ▶ At present every state, including Mexico City has Digital Community Centers through Internet.
- ▶ In the field of Public Education the “Enciclomedia” program, which came out of an agreement with Microsoft, has addressed distance education at primary school level.
- ▶ For the young and adult population who have dropped out of school mainly for economic reasons, the National Institute for Adult Education has proposed the model for education for a better life and better employment opportunities through the Internet.

# Expenditure in telecommunication services by the poorest population

As related to access and income distribution

# Methodology

---

- ▶ These analyses took as a point of departure the division of households in deciles, according to their level of income and examined their expenditure on telecommunication services.
- ▶ Each decil comprises the same amount of households, which are ranked from the lowest to highest income.
- ▶ Comparing the lowest income deciles with the highest, this latter is 30 times higher.


# Results:

---

- ▶ The expenditure of the poorest households in telecommunication services, as a percentage of their total expense is **two times higher (4.2%)** than the expenditure of the wealthiest households.
- ▶ These results suggest that the demand for telecommunication services **tends to be inelastic**; people demand these services regardless of their income.
- ▶ The larger share of the expenditure of poorest families is explained by the fact that they live in remote and isolated areas and depend more on public telephone booths, and on **mobile services**, which tend to be more expensive.
- ▶ **Mobile** services in Mexico have one the **higher prices** among developing countries.



# Main Conclusions



Successes and Pitfalls

# Conclusions

---

- ▶ Almost 20 years after the privatization of the telecommunications services by the incumbent, Teléfonos de México, the premise of “universal access” or “universal service” has not been fulfilled and is lagging behind the unattended demand for these services.
- ▶ Thus, on average, only five households of every 10 has access to basic telephone service and in some states such as Oaxaca, only two of 10 households have access to a telephone line, and three in the states of Tabasco and Chiapas.



# Conclusions (continued)

---

- The successful results have come via the application of direct government subsidies with a redistributed (progressive) perspective that have not reinforced the already privileged population, such as:
  - Sector programs aimed at providing telecommunication services to rural communities with less than 500 inhabitants
  - The application of the Sector programs to communities of between 400 and 2,500 inhabitants
  - The public Internet access through the Digital Community Centers, together with the Enciclomedia program and the model for Better Life and Better Employment opportunities proposed by the National Institute for Adult Education

# Conclusions (continued)

---

- On the other hand, the main pitfalls have been centered on the regulation and its implementation by the authorities
  - Application of policy to communities larger than 500 inhabitants
  - Ambiguity of service to rural communities by public booth or household fixed line
  - Application of policy below minimum standard provided by the Union of International Telecommunications
  - Acceptance of argument of anticipation of liberalization of Long Distance services
  - Acceptance of Telmex's overestimation of served Rural Communities

# Conclusions (continued)

---

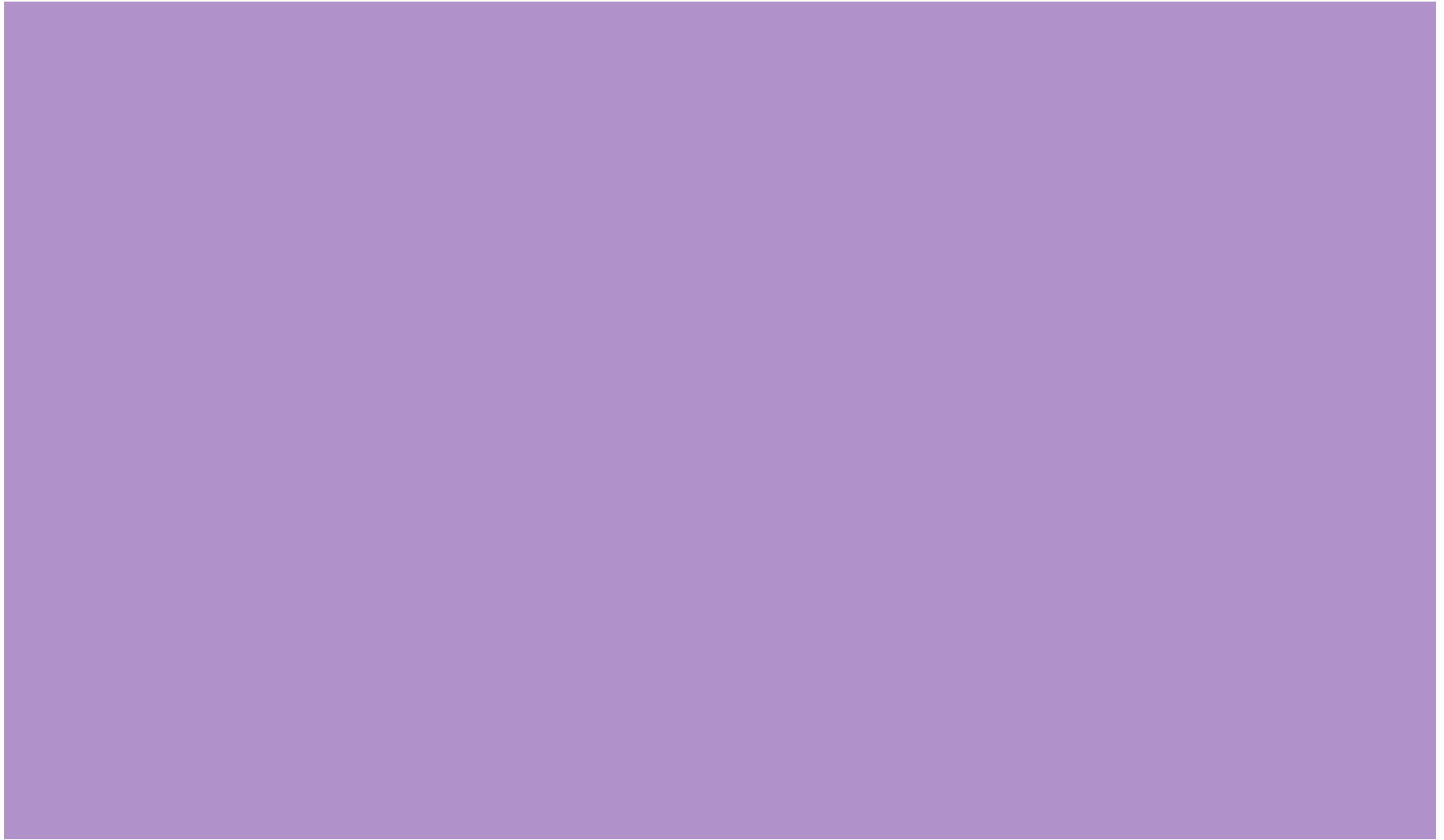
- ▶ Unfortunately and in contrast to what has been the goal of the Universal Service Policy in Mexico, namely social inclusion and overcoming the poverty situation, access and expenditures on telecommunications for the poorest households has shown that it has become a regressive tax for the poorest population of Mexico.
- ▶ Bridging the Digital Divide is not an easy task and the successful applications, as well as the pitfalls generated by public policies tell us that they should be continuously monitored in order to make the necessary changes that come out of the lessons learned.



# Information Technologies & Economic Development: Telecommunications and Poverty in Mexico

---

Thank you for your attention!



## Distribution of Telecommunications Services by Deciles.

Service	Deciles										National average
	1	2	3	4	5	6	7	8	9	10	
<b>Wireline</b>	22.6	45.8	56.4	66.5	76.2	78.5	83.4	87.7	91.7	92.6	<b>48.9</b>
<b>Wireless*</b>	22.1	42.2	52.0	65.2	70.4	77.7	82.1	87.0	91.1	86.7	<b>50.6</b>
<b>TV (cable or air)</b>	5.0	12.7	17.5	26.2	32.6	41.5	50.3	62.3	72.3	75.8	<b>23.5</b>
<b>Internet</b>	0.2	1.7	3.4	7.2	11.4	17.4	27.2	41.4	56.1	60.1	<b>12.4</b>

Source: INEGI: ENIGH, 2006. \*When at least one member of the household has a personal mobile service.

**Distribution of telecommunication services  
according to the population in towns and cities.**

	<b>% 100,000 and more inhabitants</b>	<b>% 15,000 to 99,999 inhabitants</b>	<b>% 2,500 to 14,999 inhabitants</b>	<b>% Less than 2,500 inhabitants</b>
<b>Wireline</b>	66.0	50.2	34.7	26.6
<b>Wireless</b>	63.0	52.7	30.0	24.6
<b>Internet</b>	13.9	5.8	1.4	0.9
<b>TV restringida</b>	28.4	27.9	12.0	5.8

Source: Elaboración propia a partir de datos de INEGI: ENIGH, 2006.

# Internet access

---

## Distribution of household Internet

Access	Households	%
Regular wireline	1,619,297.9	48.9
TV Cable	830,499.2	25.1
DSL	776,547.1	23.4
Radio frequency or microwave	67,075.0	2.0
Other	18,751.0	0.6

Fuente: Elaboración propia a partir de INEGI: ENDUTIH, 2007.

---



## Access to Internet and Poverty Index, 2007.

	Very low %	Low %	Medium %	High %	Very high %
Home	34.2	12.1	11.1	12.9	0.0
Work	18.4	11.4	8.9	11.2	0.0
School	6.0	5.9	7.1	12.9	27.9
Internet café or other commercial facility	36.8	49.1	65.0	59.5	72.1
Public center with subsidy	1.7	2.5	4.0	2.0	0.0
Public center with cost and restricted access	0.7	16.7	0.6	1.2	0.0
Public center free of charge and restricted access	0.3	0.1	1.9	0.0	0.0
Other person home	0.0	0.0	0.0	0.0	0.0

Fuente: Elaboración propia a partir de INEGI: ENDUTIH, 2007.



**Ratio of CCD's and targeted Population and Distribution  
by states, and level of development (1).**

	<b>Population 10-40 years of age</b>	<b>Poverty Index</b>	<b>CCDs</b>	<b>Population/ CCD's</b>
<b>States</b>	<b>53,175.6</b>		<b>8,740</b>	<b>6.1</b>
Oaxaca	<b>1,777.1</b>	Very High	890	2.0
Guerrero	<b>1,573.8</b>	Very High	293	5.4
Chiapas	<b>1,295.8</b>	Very High	146	8.9
Veracruz	<b>3,614.8</b>	High	602	6.0
Puebla	<b>2,784.6</b>	High	535	5.2
Tabasco	<b>1,079.7</b>	High	495	2.2
Hidalgo	<b>1,212.5</b>	High	455	2.7
Michoacán	<b>2,023.9</b>	High	320	6.3
San Luis				
Potosí	<b>1,232.2</b>	High	294	4.2
Yucatán	<b>948.7</b>	High	268	3.5
Campeche	<b>406.1</b>	High	152	2.7
Zacatecas	<b>700.3</b>	Medium	245	2.9
Sinaloa	<b>1,323.0</b>	Medium	243	5.4
Guanajuato	<b>2,559.6</b>	Medium	206	12.4
Durango	<b>773.6</b>	Medium	185	4.2
Tlaxcala	<b>569.6</b>	Medium	184	3.1
Querétaro	<b>854.5</b>	Medio	144	5.9
Nayarit	<b>481.3</b>	Medium	102	4.7
<b>Average</b>	<b>1,661.7</b>		<b>273.1</b>	<b>10.1</b>

**Ratio of CCD's and targeted Population and Distribution  
by states, and level of development (2).**

States	Population 10-40	Poverty Index	CCDs	Population/ CCD's
	years of age			
Sonora	<b>1,217.8</b>	Low	707	1.7
Jalisco	<b>3,450.7</b>	Low	422	8.2
México	<b>7,311.1</b>	Low	416	17.6
Colima	<b>1,631.6</b>	Low	234	7.0
Tamaulipas	<b>1,557.1</b>	Low	155	10.0
Quintana Roo	<b>581.1</b>	Low	107	5.4
Aguascalientes	<b>559.2</b>	Low	83	6.7
Morelos	<b>804.3</b>	Low	66	12.2
Baja California Sur	<b>268.8</b>	Low	45	6.0
Chihuahua	<b>291.9</b>	Low	43	6.8
Coahuila	<b>2,257.6</b>	Very Low	424	5.3
Nuevo León	<b>2,191.3</b>	Very Low	160	13.7
Baja California Distrito Federal	<b>1,461.2</b>	Very Low	82	17.8
<b>Average</b>	<b>1,661.7</b>	Very Low	<b>37</b>	<b>118.4</b>
			<b>273.1</b>	<b>10.1</b>

Elaboración propia a partir de la coordinación nacional del Sistema Nacional  
E-México, agosto 2008, CONAPO: Índices de marginación, 2005 y Censo 2005.

### Rural Telephony (more than 500 inhabitants).

State	Communities 500 y 2,500 inhabitants (thousands, 2005)	Rural communities communicated according to Telmex	Real Communities / communities communicated according to Telmex	Marginalization Index
Chiapas	1210	950	0.8	Muy Alto
Guerrero	824	932	1.1	Muy Alto
Oaxaca	1,010	1,362	1.3	Muy Alto
Puebla	995	1,040	1.0	Alto
Tabasco	609	678	1.1	Alto
Hidalgo	681	735	1.1	Alto
Veracruz	1,541	1,779	1.2	Alto
Campeche	111	135	1.2	Alto
Yucatán	190	322	1.7	Alto
Michoacán	707	1,036	1.5	Alto
San Luís Potosí	483	646	1.3	Alto
Tlaxcala	152	109	0.7	Medio
Querétaro	263	309	1.2	Medio
Nayarit	196	257	1.3	Medio
Guanajuato	908	1,179	1.3	Medio
Sinaloa	432	632	1.5	Medio
Zacatecas	320	516	1.6	Medio
Durango	236	436	1.8	Medio
Morelos	126	107	0.8	Bajo
Baja California	34	29	0.9	Bajo
E. de México	1,254	1,137	0.9	Bajo
Quintana Roo	115	122	1.1	Bajo
Jalisco	442	584	1.3	Bajo
Colima	40	56	1.4	Bajo
Sonora	178	230	1.3	Bajo
Aguascalientes	126	181	1.4	Bajo
Chihuahua	156	372	2.4	Bajo
Tamaulipas	152	373	2.5	Bajo
Baja California Sur	116	24	0.2	Muy Bajo
Coahuila	132	238	1.8	Muy Bajo
Nuevo León	75	232	3.1	Muy bajo
Distrito Federal	5	0	0.0	Muy Bajo

**Cuadro 27. Localidades de menos de 500 habitantes comunicadas,  
Por grado de marginación y PIB per cápita en cada entidad, 2006.**

	Número de localidades rurales	Localidades rurales comunicadas	% Comunidades	Grado de marginación	PIB per cápita
<b>Total Nacional</b>	<b>184,748.0</b>	<b>50,480.0</b>	<b>27.3</b>	---	---
Chiapas	19,237.0	4,366.0	22.7	Muy Alto	28.6
Oaxaca	10,025.0	3,625.0	36.2	Muy Alto	32.5
Tlaxcala	1,138.0	226.0	19.9	Medio	37.3
Guerrero	7,066.0	2,532.0	35.8	Muy Alto	39.4
Zacatecas	4,498.0	1,332.0	29.6	Medio	39.7
Michoacán	8,965.0	2,897.0	32.3	Alto	39.9
Hidalgo	4,442.0	2,316.0	52.1	Alto	41.6
Nayarit	2,547.0	610.0	23.9	Medio	42.1
Veracruz	20,294.0	6,163.0	30.4	Alto	44.2
Tabasco	2,430.0	1,602.0	65.9	Alto	47.6
Puebla	6,082.0	2,852.0	46.9	Alto	50.8
Estado de México	4,378.0	3,572.0	81.6	Bajo	51.3
Guanajuato	8,511.0	3,438.0	40.4	Medio	52.0
Sinaloa	5,790.0	1,508.0	26.0	Medio	55.1
San Luís Potosí	6,827.0	1,944.0	28.5	Alto	57.2
Yucatán	2,228.0	497.0	22.3	Alto	59.1
Morelos	1,276.0	313.0	24.5	Bajo	64.9
Durango	5,968.0	1,143.0	19.2	Medio	65.0
Jalisco	10,464.0	2,514.0	24.0	Bajo	69.5
Colima	1,095.0	138.0	12.6	Bajo	70.0
<b>Media nacional</b>	<b>5773.375</b>	<b>1577.5</b>	<b>23.3</b>	---	<b>70.5</b>
Tamaulipas	7,452.0	1,035.0	13.9	Bajo	83.1
Querétaro	2,518.0	878.0	34.9	Medio	83.3
Sonora	7,320.0	845.0	11.5	Bajo	85.4
Aguascalientes	1,826.0	313.0	17.1	Bajo	85.6
Baja California Sur	2,450.0	244.0	10.0	Bajo	89.2
Baja California	3,918.0	272.0	6.9	Muy Bajo	93.0
Coahuila	3,894.0	615.0	15.8	Muy Bajo	98.3
Chihuahua	12,095.0	1,223.0	10.1	Bajo	102.9
Quintana Roo	1,800.0	299.0	16.6	Bajo	107.5
Campeche	2,595.0	375.0	14.5	Alto	121.7
Nuevo León	5,169.0	793.0	15.3	Muy bajo	133.1
Distrito Federal	450.0	0.0	0.0	Muy Bajo	185.5

**Household expense on telecommunications services  
as a percentage of their income.  
(2006=100)**

<b>Decile</b>	<b>Household income per quarter (Mex pesos)</b>	<b>Household income per quarter (US Dollars)*</b>	<b>Telecommunication expenses / of total expense</b>
1	3,320	303.4	4.2%
2	7,174	655.6	4.1%
3	10,042	917.7	4.3%
4	12,739	1,164.2	4.3%
5	15,845	1,448.1	4.4%
6	19,506	1,782.6	4.5%
7	24,246	2,215.8	4.2%
8	31,472	2,876.2	3.8%
9	43,796	4,002.4	3.2%
10	99,215	9,067.1	1.9%

INEGI: ENIGH, 2006 and \*Banco de México: Third quarter, 2006.

<http://www.banxico.org.mx/PortalesEspecializados/tiposCambio/indicadores.html>

**Average Revenue per Capita in selected developing countries, 2007.**

		<b>GPU (ARPU)</b>	<b>PIB per cápita</b>	<b>ARPU /PIB per cápita*</b>
<b>Latin América</b>	<b>Colombia</b>	<b>131.0</b>	<b>7,400.0</b>	<b>1.8</b>
	<b>Mexico</b>	<b>178.0</b>	<b>12,400.0</b>	<b>1.4</b>
	<b>Brazil</b>	<b>17.2</b>	<b>9,500.0</b>	<b>0.2</b>
	<b>Chile</b>	<b>17.0</b>	<b>14,300.0</b>	<b>0.1</b>
	<b>Argentina</b>	<b>12.2</b>	<b>13,100.0</b>	<b>0.1</b>
	<b>Venezuela</b>	<b>1.2</b>	<b>12,800.0</b>	<b>0.0</b>
	<b>Peru</b>	<b>0.3</b>	<b>7,600.0</b>	<b>0.0</b>
<b>Europe and Middle East</b>	<b>Irak</b>	<b>12.3</b>	<b>3,700.0</b>	<b>0.3</b>
	<b>South Africa</b>	<b>20.7</b>	<b>9,700.0</b>	<b>0.2</b>
	<b>Egipto</b>	<b>9.7</b>	<b>5,000.0</b>	<b>0.2</b>
	<b>Hungary</b>	<b>26.5</b>	<b>19,300.0</b>	<b>0.1</b>
	<b>Czech Republic</b>	<b>28.5</b>	<b>24,500.0</b>	<b>0.1</b>
	<b>Turkey</b>	<b>13.7</b>	<b>12,000.0</b>	<b>0.1</b>
	<b>Poland</b>	<b>17.0</b>	<b>16,200.0</b>	<b>0.1</b>
	<b>Ukrania</b>	<b>7.0</b>	<b>7,000.0</b>	<b>0.1</b>
	<b>Russia</b>	<b>10.0</b>	<b>14,800.0</b>	<b>0.1</b>
<b>Asia</b>	<b>India</b>	<b>8.6</b>	<b>2,600.0</b>	<b>0.3</b>
	<b>China</b>	<b>10.8</b>	<b>5,400.0</b>	<b>0.2</b>
	<b>Korea</b>	<b>45.0</b>	<b>25,000.0</b>	<b>0.2</b>
	<b>Taiwan</b>	<b>23.0</b>	<b>30,100.0</b>	<b>0.1</b>
<b>Asia-Pacific</b>	<b>Singapore</b>	<b>348.0</b>	<b>49,900.0</b>	<b>0.7</b>
	<b>Hong Kong</b>	<b>22.5</b>	<b>42,000.0</b>	<b>0.1</b>
<b>TOTAL</b>	<b>Average</b>	<b>----</b>	<b>----</b>	<b>0.3</b>

\*ARPU o Average Revenue per user as a percentage of GDP

Source: Merrill Lynch, 2008 and CIA Factbook, 2008.

# Main conclusions

---

- ▶ An additional factor that influences a larger expenditure for the poorest areas is related to the outdated definition of the *Areas of Local Service*, which has no technical or economic (costs) support and artificially imposes a definition of a call as a **long distance**, which has a **higher charge**.
- ▶ This particularly affects the rural area population, where the largest share of their **traffic consists on long distance calls**.
- ▶ The higher expense in telecommunication services has an **opportunity cost** for the poorest population in terms of other expenses like health, nutrition, education, home maintenance, as well as a higher investment in productive activities.

