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Digital gap in business

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The information and communication technologies have triggered a huge progress in the society, economy, health, government; however, there is a drawback for those who do not have access to them. The digital divide takes an important role in the economy development of a society or a country.

IT, Economic development, Economic growth.

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Introduction

Information technologies are important. because of all the services that it provides. for being an essential part of the recent changes in economy and society.

All these changes have increased the spacing (gap) of low-income social sectors compared to those with higher incomes and with possibilities and options of access to information.

Only a small percentage of the world population has benefited of the advantages of technology and only a few are those who have access to the full range of services it offers. This condition is known as the digital gap.

Access to information and knowledge has become an important tool for countries and social groups to evolve to higher levels of development.

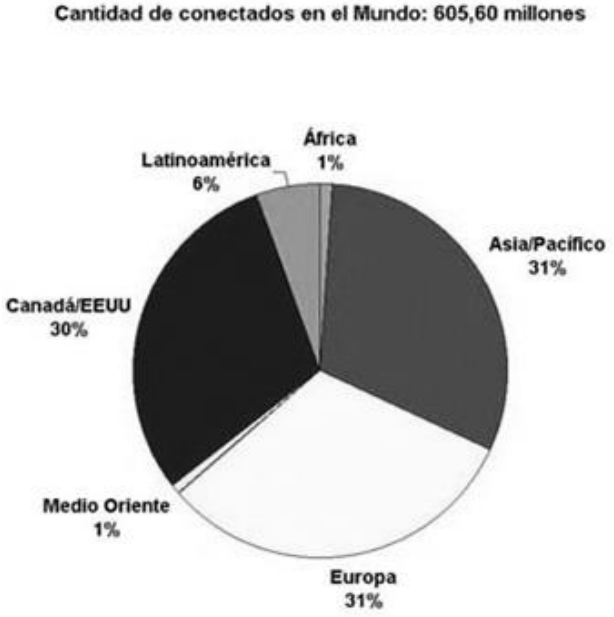
That said, the digital gap needs to be measured not only in terms of the number of phones, number of computers and websites, but also in terms of options, availability and costs to the appropriate network access. training programs and education to optimize the use of existing infrastructure.

These programs should support the people in the application of the acquired knowledge to local needs that tend to improve the quality of life in their own context and both cultural and social environment.

With an academic purpose this article aims to provide an analytical perspective on the digital gap that currently exists in Mexico and how the development of the use of the internet served as a powerful two-way communication tool, and the impact caused by this tool compared to the digital divide in the BRICS and the connotation that it has in its development.

Access to information and knowledge for improving the quality of life is an encouragement and an opportunity for the poor and the developing countries to shrink the digital gap.

The design and implementation of "digital bridges" that allow overcoming the gap whose magnitude advances at the rapid pace of technology is necessary.



Graphic 1

Digital Gap in Mexico

After the industrial era, the technological age has brought huge advances, innovations, discoveries, developments with significant social impact. However, not all companies have been involved in these advancements, not all populations have been given access to them and therefore their benefits.

The digital gap determines the differences and limitations in access, coverage and use of information technologies between different states or countries. It may be understood that the digital gap is primarily focused on the technological part; however, has a significant socio-economic essence. It is a path based on sustainable development and technology adoption.

The digital gap deepens and becomes more present among developed countries and those that are developing. The further development and technological innovations widens the gap between them. Developed countries are in a position to adopt emerging technologies, thanks to a strategic plan based on driving economic, social, educational, health and government growth relying on information technologies .

This has brought a disadvantage between those who have access and those who live so asylee to information technologies. Rural areas are the most disadvantaged, as they have less coverage of these technologies and therefore less access. It is noteworthy that the digital gap does not focus exclusively on the lack of access.

It also includes the use of information technologies and its quality.

Impact of information technologies in Mexico

In the report by the World Economic Forum during the period 2007 - 2008, Mexico went from place 49 to 58 among 127 analyzed economies. In the period 2009 - 2010, Mexico fell to 78th and for the report from 2010 to 2011, Mexico remains in the same position 78 See Table 1.

One of the ways to transcend this Digital Distance is through knowledge societies. Which will boost growth by taking into account the participation of all individuals. (Later we will discuss what is being done in Mexico in relation to knowledge societies)

During 2008 it was highlighted "Of the 67 indicators that take into account the WEF in the" Networked Readiness Index "areas where there is a longer delay are: the quality of math and science, which are located at position 110 .

And the dependence on imports of information technology and the persistence of some tariff barriers that put in place 109, like the performance of the bureaucracy. At position 108 remained the performance of legislative bodies.

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	NRI 2010–2011				NRI 2009–2010	
Country/Economy	Rank	Score	Rank within income group*		Rank	Score
Azerbaijan	70	3.79	UM	15	64	3.75
Turkey	71	3.79	UM	16	69	3.68
Macedonia, FYR	72	3.79	UM	17	73	3.64
Jamaica	73	3.78	UM	18	66	3.73
Egypt	74	3.76	LM	9	70	3.67
Kuwait	75	3.74	HI	48	76	3.62
Gambia, The	**76**	**3.70**	**LO**	**1**	77	3.61
Russian Federation	77	3.69	UM	19	60	3.58
Mexico	78	3.69	UM	20	78	3.61
Dominican Republic	79	3.62	UM	21	74	3.64
Senegal	80	3.61	LM	10	75	3.63
Kenya	81	3.60	LO	2	90	3.40
Namibia	82	3.58	UM	22	89	3.40
Morocco	83	3.57	LM	11	88	3.43
Cape Verde	84	3.57	LM	12	n/a	n/a
Mongolia	85	3.57	LM	13	94	3.36
Philippines	86	3.57	LM	14	85	3.51
Albania	87	3.56	UM	23	95	3.27
Pakistan	88	3.54	LM	15	87	3.44
Peru	89	3.54	UM	24	92	3.38
Ukraine	90	3.53	LM	16	82	3.53
Botswana	91	3.53	UM	25	86	3.47
El Salvador	92	3.52	LM	17	81	3.55
Serbia	93	3.52	UM	26	84	3.51
Guatemala	94	3.51	LM	18	83	3.53
Lebanon	95	3.49	UM	27	n/a	n/a
Argentina	96	3.47	UM	28	91	3.38
Moldova	97	3.45	LM	19	n/a	n/a
Georgia	98	3.45	LM	20	93	3.38
Ghana	99	3.44	LO	3	98	3.25
Guyana	100	3.43	LM	21	100	3.22
Iran, Islamic Rep.	101	3.41	UM	29	n/a	n/a
Zambia	102	3.36	LO	4	97	3.26
Honduras	103	3.34	LM	22	106	3.13
Nigeria	104	3.32	LM	23	99	3.25
Malawi	105	3.31	LO	5	119	3.01
Mozambique	106	3.29	LO	6	116	3.09
Uganda	107	3.26	LO	7	115	3.03

Chart 1

Differences and limitations on access to information technologies are transmitted to human development. This can be measured with some of the following indicators which can include: average schooling rate, life expectancy at birth, per capita GDP. See Table 2.

Clasificación según el IDH	Índice de Desarrollo Humano (IDH) Valor	Esperanza de vida al nacer (años)	Años promedio de escolaridad (años)	Años esperados de escolarización (años)
	2011	2011	2011*	2011*
DESARROLLO HUMANO MUY ALTO				
1 Noruega	0,943	81,1	12,6	17,3
2 Australia	0,929	81,9	12,0	18,0
3 Países Bajos	0,910	80,7	11,9[b]	16,8
4 Estados Unidos	0,910	78,5	12,4	16,0
5 Nueva Zelandia	0,908	80,7	12,5	18,0
6 Canadá	0,908	81,0	12,1[b]	16,0
7 Irlanda	0,908	80,6	11,5	18,0
8 Liechtenstein	0,905	79,6	10,3[c]	14,7
9 Alemania	0,905	80,4	12,2[b]	15,9
10 Suecia	0,904	81,4	11,7[b]	15,7
11 Suiza	0,903	82,3	11,0[b]	15,6
12 Japón	0,901	83,4	11,5[b]	15,1
13 Hong Kong, China (RAE)	0,898	82,8	10,0	15,7
14 Islandia	0,898	81,8	10,4	18,0
15 República de Corea	0,897	80,6	11,6[b]	16,9
16 Dinamarca	0,895	78,8	11,4[b]	16,9
17 Israel	0,888	81,6	11,9	15,5
18 Bélgica	0,886	80,0	10,9[b]	16,1
19 Austria	0,885	80,9	10,8[b]	15,3
20 Francia	0,884	81,5	10,6[b]	16,1
21 Eslovenia	0,884	79,3	11,6[b]	16,9
22 Finlandia	0,882	80,0	10,3	16,8
23 España	0,878	81,4	10,4[b]	16,6
24 Italia	0,874	81,9	10,1[b]	16,3
25 Luxemburgo	0,867	80,0	10,1	13,3
26 Singapur	0,866	81,1	8,8[b]	14,4*
27 República Checa	0,865	77,7	12,3	15,6

Chart 2

In this Human Development Report, Mexico is located on the 57th of 187 countries with HDI of 0.770.

The penetration of the information technologies and communication can be measured based on their availability within the population. On the other hand we can see that due to the constant rise of these technologies there is a delay in which these are adopted. In Mexico in 2001, the availability of the internet in Mexican households was 6.2% and 9 years later in 2010, their availability was 22.2%. See Figure 1.

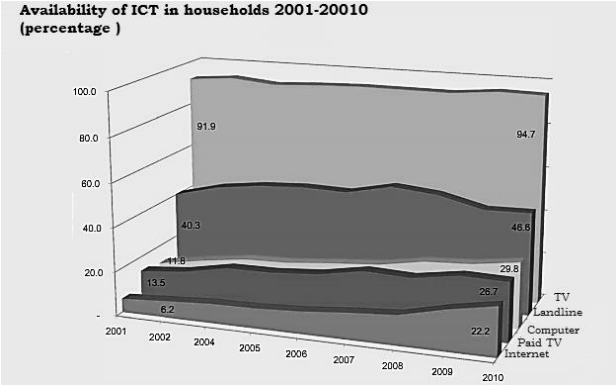
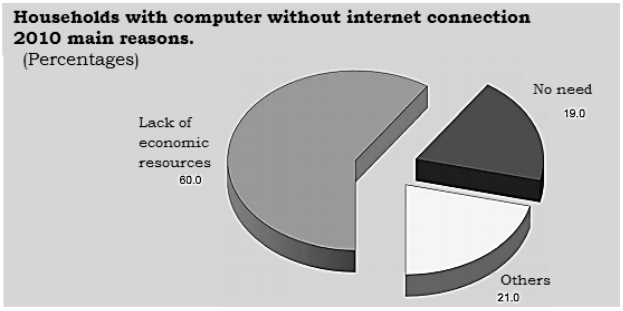


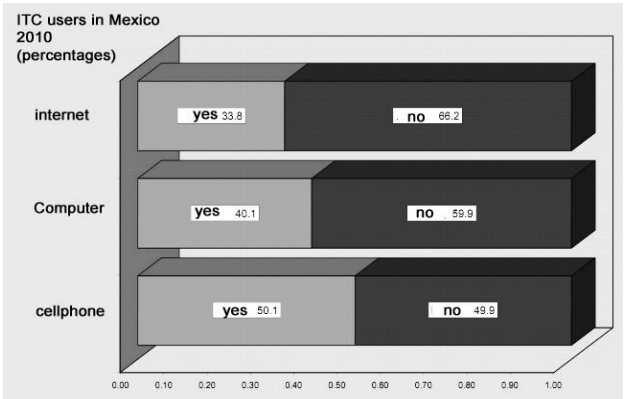
Figure 2

The penetration and use of technology will also be linked to an economic factor. 60% of Mexican households do not have computer due to lack of funds. See Figure 2.



Graphic 3

The use of ICT predominates in the young population, almost half of users who use the computer are between 12 and 24 years. After 59 years, existing users are 1 in 10. See Figure 3.



Graphic 4

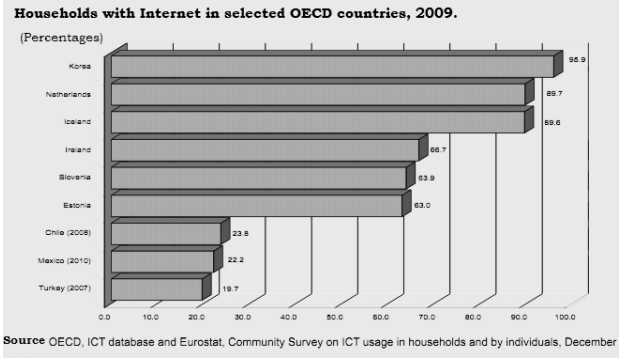
Additional to access and coverage, the use of information technologies is based on the skills / abilities of the person who uses them.

Taking this premise we analyze the degree of preparation and / or education. In Mexico out of 100 people aged 15 years and over 16.3% finish higher education.

4.8	No tienen ningún grado de escolaridad.
55.5	Tienen la educación básica terminada.
0.6	Cuentan con una carrera técnica o comercial con primaria terminada.
22.4	Finalizaron la educación media superior.
16.3	Concluyeron la educación superior.
0.4	No especificado.

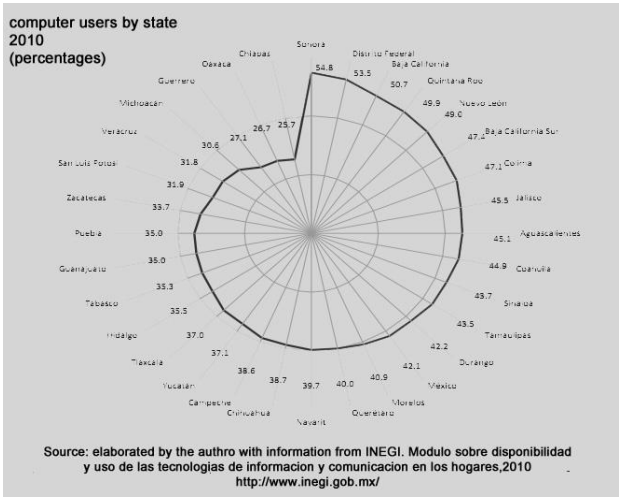
Table 3

Internet penetration in Mexican homes is still far below the 50% of the population and 22.2% below Chile and big countries like the Netherlands, Korea and others.



Graphic 5

There are large differences in coverage, access and use of information technologies in the country. This brings the distinctions between computer users by federal entity. Statistics of the computer users of the country are shown in the following chart.



Graphic 6

Regarding the contribution of GDP for research and development we see a very small percentage for this area as shown in the following table.

1981-1985 | 1986-1990 | 1991-1995 | 1996-2000 | 2001-2005 | **2006-2010**

Country name	2006	2007	2008
México	0,39	0,37	
Micronesia (Estados Federados de)			
Mónaco			
Mongolia	0,21	0,23	
Montenegro	1,24	1,10	
Mozambique	0,53		

Table 4

The BRIC in Mexico

BRIC is a term used to refer to the combination concerning the economies of Brazil, Russia, India and China. The leaders of the BRIC countries held their first summit on June 16 in the Russian city of Yekaterinburg and the second on April 15, 2010 in the Brazilian city of Brasilia.

In the session held on April 14, 2011 in the city of Sanya, China. With that South Africa becomes a member, BRIC changes the name to BRICS.

Together in 2009 accounted for 95.5 percent of U.S.'s GDP, between 15 and 20 percent of world's GDP wich means 2733 million people (1,300 million China, India 1,100, 190, Brazil, Russia 143) more than 40% of the world population and 25% of the planet's surface.

The four countries are holders of 40 percent gold and hard currency of the world; China alone has the largest reserves in the world in dollars. Russia is the main supplier of gas to Europe. And Brazil prepares to join the club of major oil producers in the world. In addition, China has the largest army in the world and Russia is the world's second nuclear power and the world's second largest manufacturer of military equipment and weapons, preceded only by the United States.

Figure 1

With the establishment of the BRIC as a way to build coordinating and promoting agreements and cooperation among its members, it is clear that the countries involved (the Federative Republic of Brazil, the Russian Federation, the Republic of India and the Republic China) are not willing to remain as mere spectators of the major world decisions. They have decided to coordinate and support to act decisively in construction, in particular new architecture international standards for financial institutions and, in general, a new more democratic world order.

Not only will, territory size or population gives them strength to it and makes them partners. Also the size of their financial reserves, strength and growth of their economies, military and energy capacity.

Impact of information technologies in BRICS

The rise of the BRICS and the new international order reflecting the geo-economic and geopolitical changes that reconfigure the world of the early twenty-first century and help explain the nature of capitalist power in general, but do not show the collapse, but only its relative decline of the power of United States in particular. These efforts and steps in a realignment and reorganization of world's power for which there is still U.S. for a while, but not as unipolar force.

In "Dreaming with BRICs: the path to 2050" essay is predicted that China and India will be the dominant global supplier of technology and services, while Brazil and Russia will become leaders as suppliers of raw materials.

Also, the door is left open to a potential situation in which cooperation between the four countries is given, for example Brazil and Russia together form the largest supplier of materials and food to the world today.

If this situation occurs, the BRIC could become a top economic and political bloc even superior to the current G8 (conformed by the G7 and Russia).

In these current times of global crisis where the sector of information technologies suffer the consequences of the recession. in the BRIC area market growth can even reach double digits according to the latest estimates by the European Information Technology Observatory (EITO). To quote some figures, the rate of growth of the Indian market will be in the end of this year by 10.5% and may be reached in the next 13%; China added 3.6% in 2009 and 5.4 in 2010; Brazil 5.2% this year and Russia will grow by 2.9%. What I would like to emphasize is that the ICT sector will involve the bulk of the revenue from these markets (both in terms of telecommunications products and services such as hardware and software). A good listener with a few words is enough.

According to Gartner, total spending on information technology in Brazil reached U.S. $ 101.300 million, 9.6% of GDP. This rate is above the average of 6.1% of the BRIC countries (Brazil, Russia, India and China)

By the end of this year 2010 The Brazilian IT expense will double the Russians and exceed the total expenditure over India U.S. $ 30,000 million . Brazil is now the tenth largest economy in the world and the second largest IT market among emerging economies after China.

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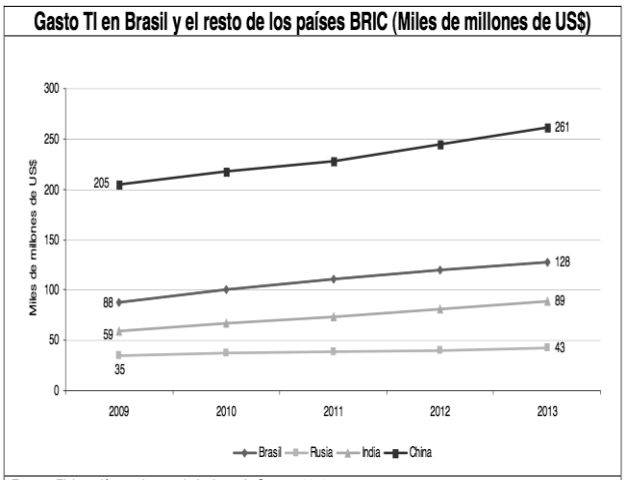
The Brazilian IT expense is growing faster than the rest of the BRICs countries economies because of their increasingly dynamic at the level of public administrations, business corporations, SMEs and households segment.

This is indeed a big difference from the rest of the BRIC countries countries since India continued to concentrate its spending on the services sector, while China in large government projects.



Graphic 7

Mexico's analysis towards the BRICS

Mexico, October 27, 2011 -. During the last decade, the informality, the dependence on the United States and organized crime are key indicators that have lagged behind to Mexico versus the BRICS (Brazil, Russia, India, China and South Africa economies), says a study by the Mexican Institute for Competitiveness (IMCO).

The "International Competitiveness Index 2011", developed by the agency, said that the growth of these nations has far exceeded that recorded Mexico between 2001 and 2010.

As the country scored an average GDP growth rate of 2%, China filed 12%; India, 9%; Russia, 7%, while Brazil and South Africa, 4%.

On the indicator of organized crime, Mexico showed the lowest score against the BRIC countries actually it lost three positions in the Index in the 10 years reference.

With respect to the subscript of Achievement International Relations "BRIC perform better because it has more diversified in their exports and imports. While 80% of Mexican exports go to the United States. This involves risk, makes it highly dependent on the performance of the North American economy, "the study said. In informal economy, the country is below others, at position 43 in the ranking. To change this situation, the Institute recommended taking a series of measures, such as opening to competition areas reserved for the State, areas such as Pemex and Federal Electricity Commission.

The Competitiveness Index assesses 46 countries in 121 indicators, grouped into 10 factors. Mexico was put in place 32 of 46 countries in the 2011 Global Competitiveness Index, which occupies the same position for 4 years. The 10 most competitive countries, according to the index this year, were Switzerland, Sweden, Norway, Denmark, Finland, Netherlands, USA, Canada, Australia and France.

How to fight the digital gap?

The digital agenda is an essential pillar that will help reduce the digital gap in our country; public policies aimed at promoting economic growth based on sustainable development of society.

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Knowledge is essential to the progress of societies; in Mexico are forming knowledge societies to promote growth, development, innovation, also to help build a bridge that can reach across Mexico and transcend the digital gap. Durango and Monterrey are generating these knowledge societies. Which are moving towards the technological era for the local population and influence to the states. On the other hand we see what is invested in research and development in Mexico's GDP. This does not provide enough for the country to progress in this area, which is vital to contribute to the growth of the country.

Conclusions

In Mexico, the digital gap is very evident. The penetration of the information technologies has not yet reached the majority of the Mexican population. Taking the example of computer users by state, we see a 54.8% score of users while Chiapas with 25.7%.

There are states that have realized the importance of information technologies as a foundation for growth and development of the state and the country. These have taken the responsibility to build a bridge that brings unequal coverage, access and use of ICTs through knowledge societies.

This path must be supported by current digital agenda and a realistic contribution of ICT to GDP. The percentage of research and development in 2007 was 0.37% compared to Israel which is a 4.76% in the same year.

If Israel we see now is a reference to growth, development and technological innovation. The reach of the internet in homes Mexico is 22.2% in 2010, Korea has a 95.9% in the same year.

The cost of access to this technology is also a drawback that must be analyzed to provide affordable access technology to the entire population, for example PLC take advantage of the current infrastructure of the electric network.

Besides the factors currently performing a delay in the development of ICT in reducing the digital gap that plagues Mexico, for example, as the lack of or insufficient security policy that makes greater involvement to the degree which is not considered in order to achieve a higher rate of alliances with other countries for the sake of growth and development of these parameters being at least the main causes of the recession of Mexico.

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