

## **The Impact of Mobility in Brazilian Info Centers: ACESSA-SP Case Study**

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### **Abstract**

*AcessaSP program is one of the biggest digital inclusion programs in Latin America, providing Internet access for poor population through info centers located in the State of São Paulo, Brazil, and taking advantage of digital learning development perspective. Since 2003, a periodical survey called "PONLINE" is carried out in order to feed a database related to the users habits and attitudes. An important phenomenon has been observed in ACESSA-SP environment in the last few years: the emergence of mobility. There is a lack of systematic information regarding how the mobility can affect the program users' appropriation and interaction with Internet. For this study approach, mobility issue is considered from two factors: the growth of wireless connections and the broad access to mobile platforms. In this sense, this paper discusses the landscape that seeks to sustain a framework for a qualitative research in progress, focusing in the new role of info centers in ACESSA-SP communities' life.*

**Keywords:** mobility; ACESSA-SP Program; info centers; digital inclusion.

### **1. Mobility, Connectivity and Media Convergence**

In the network society context of the first decade of the new millennium, wireless networks become present in public and private spaces in the developed world. Access zones to wireless Internet are most common related to Wi-Fi, a term used as shorthand for wireless fidelity (Lemos et al, 2012), and also to 3G technologies.

The mobile forms of human communication, in which the cellphone has taken the most complete, comprehensive and tangible expression from the late twentieth century, are significant part of the imagery and future projected visions of millions of individuals across the world. Currently, mobile phones exceed those expectations, adding a set of countless new functions, more sophisticated and innovative uses from devices, applications and opportunities for social interaction, becoming the main instrument of contemporary media convergence (Passarelli & Junqueira, 2012).

At the same time that relevant international experience in wireless started to be observed, Brazil also began to introduce them in public places from government initiatives in their different action spheres: federal, state and municipal. Academic research and the market point to a not too distant future in which much of the equipment will be raised to the level of "smart." Part of this trend is justified by the process of innovation of these screens that increasingly incorporate ubiquitous, integrated and connected systems. That is the IoT Era (Internet of Things), term coined in 1999 by Kevin Ashton from MIT (Massachusetts Institute of Technology).

The Internet of Things' era has allowed the media to migrate in convergence to a single screen, aggregating audio, video and data resources with different dimensions of interaction.

This phenomenon has put the mobile technologies in the center of discussion (Rheingold, 2002), as they became the excellence screen also for rethinking the digital divide in the contemporaneity (Warschauer, 2003). The consumers in general quickly assimilate these features, but especially the public of child and adolescent (Prensky, 2006), making the resources of these screens almost essential to their daily activities.

## **2. Internet and Wireless Penetration: An International Overview**

In the contemporary world, mobility, especially that one allowed by the incorporation of cellphone, started gradually changing habits and transformed time and space relations in daily activities such as those ones related to work and entertainment, education, politics, religion and many other dimensions of human life. The new generation is recognizing and identifying the role of these devices in the management of daily activities (Tapscott, 2008). This is mainly related to the possibility of use and access of ICT by the population. The impact of these penetrations has some differences regarding the characteristics of each countries and regions (UNCTAD, 2011).

### **2.1 Internet uses and access**

The global situation of increasing access and use of the Internet, according to the economic blocs of countries, can be checked by research statistics<sup>1</sup>. It is possible to observe that the Latin America and the Caribbean region has one of the highest penetration rates in the world wide web in its population, surpassed only by North America, Oceania and Europe. Moreover, it presents one of the highest growth rates of use of web browsers accumulating a population of around 255 million people<sup>2</sup> (Table 1).

In the regional percentage distribution of the number of global Internet users worldwide, it is observed that the highest concentration is in Asia, with 44.8% of share and a total of 1.076 billion people. Then Europe (21.5%), followed by North America (11.4%), Latin America and the Caribbean (10.4%), Africa (7.0%), Middle East (3.7 %) and, finally, Australia and Oceania, with only 1.0%. An analysis of Internet penetration in the total populations of the different regions of the globe, evidence that the situation increased coverage is checked to North America, where access to the world wide web is a reality for 78.6% of its population. Secondly, appear Oceania and Australia (67.6%), followed by Europe (63.2%), Latin America and the Caribbean (42.9%), Middle East (40.20%), Asia (27.5 %) and, lastly, Africa, with 15.6% penetration. Note that the average global Internet penetration in total global population is 34.3%, which puts Latin America and the Caribbean in the privileged position of access in relation to this indicator international (Figure 1).

### **2.2 Wi-Fi connections through the world**

Wi-Fi<sup>3</sup> connections are internationally monitored by Jiwire, company that owns an application which works as a collaborative map of points of wireless network worldwide. Data from this source show that public wireless connections have grown steadily, rising from 237,507 points in 2008 to 820,262 in 2012. The statistics generated quarterly by the company JiWire since 2003 - world leader in mobile advertising in the environment and in databases on the sector - are based on a platform audience of more than 585 million mobile devices and more than seven million points of data collection, engaging more than 55 million unique monthly users of smartphones, tablets and laptops. Methodologically, data are obtained simultaneously in different sources: an statistician survey, composed of a random sample of 1,400 consumers selected from 315,000 public Wi-Fi access points and consults to databases originated from billion access to publications and advertising platforms for mobile devices (Figure 2).

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<sup>1</sup>The Internet Big Picture: World Users and Population Stats. Available in <http://www.internetworldstats.com/stats.html>. Access in April 25, 2013.

<sup>2</sup>Positions statistics on June 30, 2012. The demographic data (population) are based on U.S. Census Bureau census and local agencies. Information on the use of the Internet come from data published by Nielsen Online, by the International Telecommunications Union, by GfK, local regulators of ICT and other reliable sources.

<sup>3</sup>Wi-Fi is a trademark of the Wi-Fi Alliance. It is used for certified products that belong to the devices class of local wireless network (WLAN) based on IEEE 802.11 standard. Because of the intimate relationship with its standard with the same name, the term Wi-Fi is often used as a synonym for IEEE 802. The Wi-Fi standard operates in frequency bands that do not require a license for installation and / or operation. This fact makes them attractive. However, for commercial use in Brazil, it is necessary a license from National Agency of Telecommunications. In order to have access to the internet through Wi-Fi network, it is necessary to be in a coverage area of an access point (usually known as hotspot) or public place where wireless network is operated and use a mobile device.

Brazil has about 4200 of Wi-Fi points, according to the latest report from JiWire. South Korea has more than 186,000 and the United States, more than 182 000. China and Russia, the only BRIC in the top ten countries that have access points, occupy the fourth and seventh position, respectively.

According to JiWire, in a worldwide level, the main devices used to access the Internet with wireless connections are, in descending order of importance: laptops (42.0% in the last quarter of 2012), followed by smartphones (39.0 % in the same period) and tablets (19.0%). However, since the end of last year (2011), it can be observed a rapid and progressive loss of the relative importance of wireless connections via laptops (falling twenty percentage points in one year, from 62.0% to 42.0%), especially by the growth of wireless connections via smartphones, which, between the last quarter of 2011 and the same period in 2012, had grown 13 percentage points of a percentage share of 26.0% to 39.0%. The use of wireless connections via tablets are also increasing over this period, rising from 12.0% to 19.0%.

### **3. The Digital Inclusion ACESSA SP Program**

The popularization of public wireless networks can decisively contribute to the democratization of access to the worldwide web, increasing the competition among telephone companies, which will surely result in improvements in the quality of services and lower prices of connectivity in the country.

In this sense, the emergence of digital inclusion programs are related to the need for access to the Internet and the information in the network as a citizen's right, an international orientation of democratization in the Declaration of Human Rights of the United Nations (UN) Society Information.

It is from this concept that the Digital Inclusion Program of the State of São Paulo ACESSA SP is structured. This program was created in 2000 through a partnership between the Government of the State of São Paulo and the Research Center for New Communication Technologies Applied to Education "School of the Future" - USP. The government is responsible for the development of structuring actions of physical space and implementation of hardware, software and connectivity. The School of the Future - USP develops the virtual environment, communication strategies and mediation, as well as the training of monitors using blended learning: face meetings and distance monitoring. Thus, this partnership opens and maintains public spaces and free Internet access for the population of São Paulo, whose goal structure not only in providing free access to computers, but, above all, in encouraging actions aimed at increasing the interaction between actors-network (Passarelli, 2008) and services, encouraging social involvement and mobility of the lower income classes.

The ACESSA SP program is the biggest digital inclusion program in Latin America and currently has 737 stations in operation and 54 under implementation covering 555 municipalities, accounting for more than 2.5 million registered users and 65 million people. Also counts with the collaboration of 1,116 monitors<sup>4</sup>. It is believed that the strategy of offering wireless services under the ACESSA SP will have great impact on the current public and potential users, in cities where there are service stations, increasing the levels of access and social integration of most local citizens.

In this sense, this report is expected to contribute with the understanding of the importance attributed by the users to their integration in the mobility of the contemporary world, as well as the impact of this technology on the uses and appropriations of mobile devices in the operation regions of the ACESSA SP stations.

#### **3.1 The Longitudinal Survey in ACESSA SP Program**

Developed as a management and research tool in 2003, PONLINE<sup>5</sup> - manager SPSS database, allows conducting online surveys with program users investigating their profiles, uses and consumption habits on the Internet. In this context, the historical series of PONLINE allow a view of the development of the program itself and its participants, which, in some way, reflect the growth and development of the Internet in Brazil, from the merger of functions and tools that are being created and made available in a digital world: new social networking, possibilities of achievement and sharing photos, videos, use of online public services, among many other interactive possibilities.

The PONLINE has a friendly and accessible online GUI and allows to perform searches and filters through specific clippings.

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<sup>4</sup> ACESSA SP Portal. Available in <http://www.acesa.ssp.gov.br>.

<sup>5</sup> PONLINE Data, tables and graphics year by year. Available in [www.acesasp.ssp.gov.br](http://www.acesasp.ssp.gov.br). Access in July 14, 2013.

It is possible to create relationships among posts, view and compare different audiences and regional standards, both in the form of graphs and tables. The PONLINE also allows making compatible technical and methodological data obtained from other surveys conducted in the country and abroad, boosting analysis prospects and further studies on the impact of public policies for digital inclusion in the State of São Paulo. Similar method approach is also identified in other studies (Mercer, 2006).

Regarding to data collection, the PONLINE use as a research tool an online questionnaire, Lime survey free software applied over a typical week of operation in a program' service stations. The sample is built on simple random sampling, being one of every ten service stations' users choose randomly by the monitors. The questionnaire used by PONLINE consists of multiple choice questions with single or multiple answers, evaluation questions, with 0-10 scales, and also open questions.

#### **4. Instating Perspectives of Wireless Access in ACESSA SP**

Some indicators already obtained by PONLINE 2012 held with 4,838 respondents, found that for the regulars users who have cellphone, the main means of communication used are, in descending order of relative importance: cell phone (75.7%); messages / posts on social networks like Facebook, Orkut and other (67.0%); instant messaging, like Facebook Messenger, MSN, Google Talk and other (65.6%); email (57.1%); telephone through Internet, such as Skype, MSN, Google Talk (32.1%); landline phone (31.6%) and mail / letters (12.3%).

It is worth noting that among the attendees surveyed, 83.0% reported owning cellphones, while only 17.0% did not hold possession of these devices. Of those who had, 71.0% hire pre-paid mode, compared to only 12.0% who do as post-paid, confirming the structural characteristic of the mobile telephony use in Brazil. It is also worth noting that, compared to PONLINE 2011, the use of pre-paid mobile phone increased by 4 percentage points, rising from a relative share of 67.0% to 71.0%, which indicates growth of the pre-paid phones in a context of increased also in possession of mobile phones by users, which jumped from 79.0% in 2011 to 83.0% in 2012.

For participants of ACESSA SP, the frequency of use of the main functions present in the cellphones showed the following descending order of relative preference: making calls (83.3%), sending text messages (68.2%), taking pictures (57.3% ), using the MP3 (52.8%), listening to the radio (43.8%), playing games (37.6%), using applications (37.1%), surfing on the Internet (35.4%), watching videos (29.9%), making music, pictures or games downloads (29.6%), watching TV (23.7%), making videos (22.9%) and using the GPS (10.0%). These data is in line with previous research in the literature exploring similar approach (CGI.br, 2012; Ito et al, 2012; Passarelli & Junqueira, 2012).

In this context, it is observed that the growing use of mobile technologies generates important changes in lifestyles, expressions and personal narratives, psychologically impacting contemporary subjects, in which is confirmed the new forms of subjective organization – fluid and constantly changing – with emphasis on expansion of personal autonomy, freedom and privacy, increased intimacy in relationships, emergence of new forms of interpersonal control, heightened sense of security and the feeling of never being alone (Nicolai-da-Costa, 2004).

##### **4.1 A Research Framework**

It is observed, as continuity of investigations, the great potential opportunity of applying qualitative research to increase understanding of the impact of the use of mobile technologies on everyday life connection of the regulars ACESSA SP users, in which can be collected and be known socio-behavioral, cultural, psychological, emotional and civic participation aspects of different age groups participating in the service.

The following issues are related to some selected and recommended questions for using in qualitative research in the field with ACESSA SP program's users, aiming to study the advantages, senses, uses and appropriations of the wireless connections by the users of the service stations. Note that this unique formulation has not yet received adequate language treatment and approach for each of the qualitative research methods to be used (focus groups, in-depth interviews), as it is initially a selection of thematic topics search.

- Do you have a cellphone? If yes, can it connect to internet? Do you have a notebook or tablet in which you access wireless internet?
- What the possibility of accessing Internet through wireless network represents for you?
- How do you feel by having (or not) wireless Internet connection?

- What do you think about people who have wireless Internet connections? Are they more independent, free, respected and valued in the society? Do they have more possibilities to know people, find a job or new personal and affective relationships?
- Do you believe that having Internet connections improve your personal image (status, self-esteem)? Would it improve your social opportunities (friendships, dating, jobs, events and meetings)?
- What advantages or differences do you see or realize with the wireless connection in your day to day? How would that change your life? Do you feel limited somehow by not having wireless Internet connection in your cellphone or personal computer?
- What do you like (or would like to) in the case of starting to have wireless Internet connection?
- Do you believe that having wireless Internet connection could increase (or decrease) your privacy? Or your social relationship?
- If the ACESSA-SP stations offer the possibility of wireless Internet connection, from which places would you access the web? Would you continue attending the stations? Why? (is it more related to the fact of not having devices? Is it more related to the fact of preferring the socialization provided by the physical frequency to stations?)

### ***5. Final Remarks***

Wireless are growing exponentially worldwide, and also in Brazil, passing increasingly part of the everyday life of contemporary subjects. Over the past few years, the wireless internet access has become increasingly offered by cafes, airports, universities, libraries, bookstores and a wide range of types of commercial establishments.

According to Lemos et al (2012), "wireless networks produce processes of spatialization and socializing in cities, reconfiguring people's relationships with each other and with the locals", creating new practices in urban spaces and new forms of interaction with the places and production of new meanings for them. The "informational territories" are constituted as intersection and control zones between cyberspace and urban place, which reconfigures and expands the social functions of the places. A moving space between the electronic and physical ones.

Under the exponential growth of wireless connections, the popularization of public wireless networks is believed to decisively contribute to the democratization of access to the worldwide web, increasing competition among telephone companies, which will surely result in improvements in quality of services and lower prices of connectivity in the country.

Info centers must to reconfigure their functions in this wireless reality, as they having being losing they space of preferentiality in the last years (Angeluci & Galperin, 2012). In this since, it is worthy thiking about initiatives to provide public and free wireless connections in stations such as those ones from the ACESSA-SP program. But this expected great impact on the public users and other potential users will just be possible if grounded by a more deep investigation on how these places can take advantage of "time and space" restrictions that wireless Internet connections vanish from theses places.

### ***Sponsoring information:***

- Government of Sao Paulo State – Public Management Division
- Bill & Melinda Gates Foundation – "Access to Knowledge"

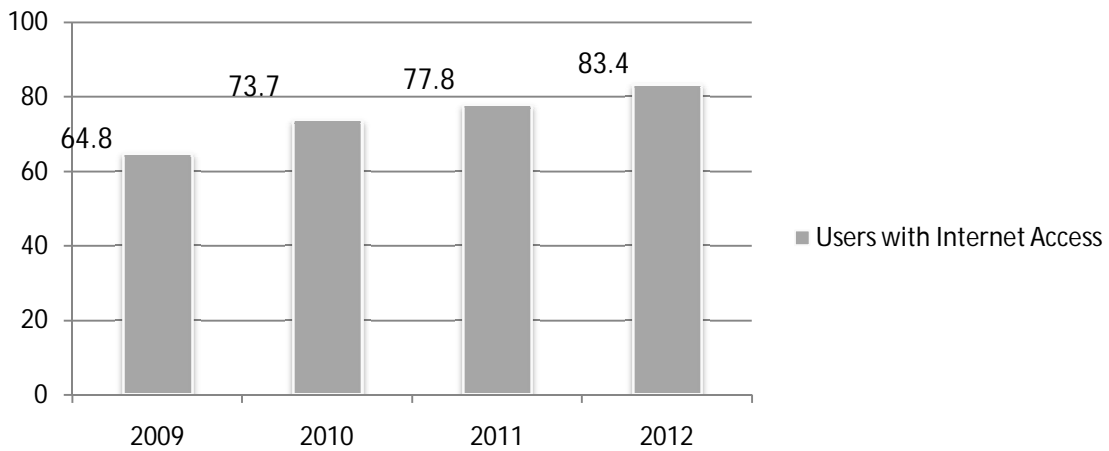
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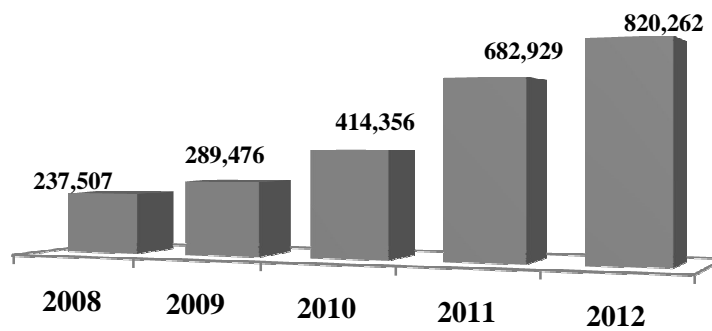
### Tables and Figures:

**Table1. World: Internet use, by region, percentage of growth in the period 2000-2012 and distribution of users (on June 30, 2012).**

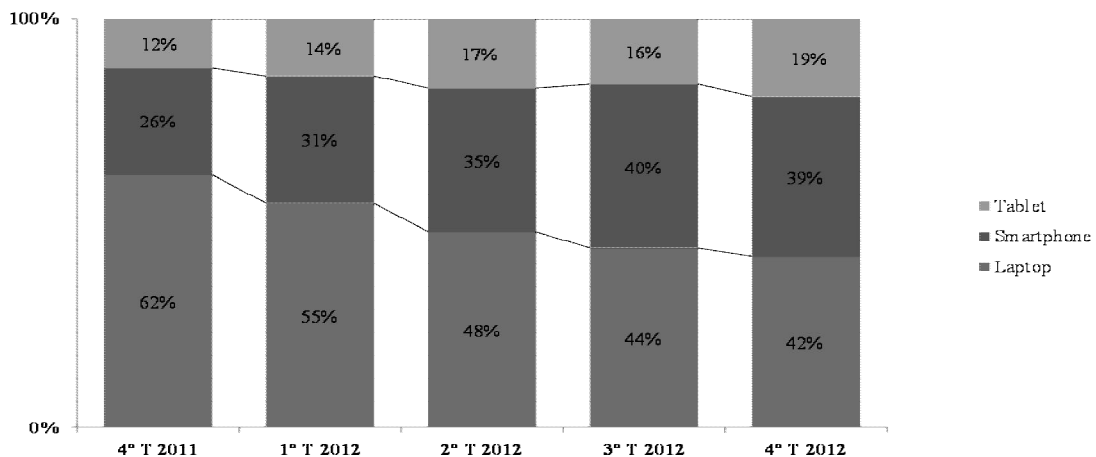
Regions	Population (2012 Est.)	Internet Users Dec 31, 2000	Internet Users Jun 30, 2012	Penetration (% Population)	Growth 2000-2012	Users' distribution (%)
Africa	1,073,380,925	4,514,400	<b>167,335,676</b>	15.6%	3,606.7%	7%
Asia	3,922,067	114,304,000	<b>1,076,681,059</b>	27.5%	841.9%	44.8%
Europe	820,918,446	105,096,093	<b>518,512,109</b>	63.2%	393.4%	21.5%
Middle East	223,608,203	3,284,800	<b>90,000,455</b>	40.2%	2,639.9%	3.7%
N. America	348,280,154	108,096,800	<b>273,785,413</b>	78.6%	153.3%	11.4%
L. America and the Caribbean	593,688,638	18,068,919	<b>254,915,745</b>	42.9%	1,310.8%	10.6%
Oceania / Australia	35,903,569	7,620,480	<b>24,287,919</b>	67.6%	218.7%	1%
WORLD	7,012,846,922	360,985,492	<b>2,405,518,376</b>	34.7%	566.4%	100%



**Figure1.** Brazil. Evolution of number of userswith Internet access, no matter the environment, in millions.Source: Ibope/Censo Nielsen. Available in <http://br.nielsennetpanel.com/pnl/br/home>.



**Figure2.** WORLD. Evolution of public connections, Wi-Fi, from 2008 to 2012. Source: JIWIRE. JiWire Mobile Audience Insights Report Q4 2012. Available in <http://www.jiwire.com/>. Access in July 25, 2013.



**Figure3.** World:Wi-Fi use, by device, 2011 (4<sup>th</sup> quarter) – 2012.