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Paola Prado Ph.D.
Roger Williams University

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EXECUTIVE SUMMARY

Access to the Internet has grown exponentially in Latin America over the past decade. The International Telecommunications Union (ITU) estimates that in 2009 there were 144.5 million Internet users in South America, 6.4 million in Central America, and 8.2 million in the Caribbean, or a total 159.2 million users in all of Latin America.[1] At that time, ITU reported an estimated 31 million Internet users in Mexico, which would bring the overall number of users in Latin America to 190.2 million people. More recent estimates published by Internet World Stats place Internet access currently at an estimated 204.6 million out of a total population of 592.5 million in the region (this figure includes Mexico).[2] According to those figures, 34.5 per cent of the Latin American population now enjoys Internet access.

In recent years, universal access policies contributed to the vast increase in digital literacy and Internet use in Argentina, Brazil, Chile, Colombia, and Costa Rica. Whereas the latter was the first country in the region to adopt a policy of universal access, the most expansive and successful digital inclusion programs in the region have taken hold in Brazil and Chile. These two countries have allocated considerable resources to the promotion of digital literacy and Internet access among low income and poor populations; in both cases, civil society groups significantly assisted in the promotion of inclusion at the grassroots level. Digital literacy and Internet access have come to represent, particularly in the area of education, a welcome complementary resource for populations chronically

[1] International Telecommunications Union [ITU], "Information Technology Public & Report," accessed May 15, 2011, http://www.itu.int/.

[2] Internet World Stats, "Internet Usage Statistics for the Americas," accessed March 24, 2011, http://www.internetworldstats.com/stats2.htm.

underserved in nations with a long-standing record of inadequate public social services.

Digital inclusion is vastly expanding throughout the region, thanks to stabilizing economies, increasingly affordable technology, and the rapid growth in the supply of cellular mobile telephony. A recent study by the global advertising agency Razorfish revealed significant shifts in the demographics of digital inclusion in the major economies of South America, where Web access is rapidly increasing amid the lower middle class and the working poor.[3]

Several researchers have suggested that Internet access will bring about greater civic participation and engagement, although skeptics remain unsure this could happen in Latin America. Yet, there have been some recent instances of political mobilization facilitated through the use of the Web and social media applications, starting in Chile when "smart mobs" nationwide demonstrated against former Chilean President Michelle Bachelet when she failed to enact education reforms in May 2006. The Internet has also been used by marginalized groups and by guerrillas groups to highlight their stories.

In sum, Internet access in Latin is no longer a medium restricted to the elite. It is rather a public sphere upon which civil society has staked its claim. Some of the examples noted in this study point toward a developing trend whereby civil society, through online grassroots movements, is able to effectively pressure public officials, instill transparency and demand accountability in government. Access to the Internet has also made it possible for voices on the margins to participate in the conversation in a way that was never previously feasible.

[3] J. Crump, "The finch and the fox," London, UK (2010), http://www.slideshare.net/razorfishmarketing/the-finch-and-the-fox.

INTRODUCTION

This descriptive study analyzes the impact of the Internet in Latin America. It provides a brief overview of online publics in the region and their adoption of social media; it also highlights some of the notable socio-political tipping points that have taken place during the diffusion of this technology in recent years. This study relies primarily on secondary research. It begins with a review of Internet access rates in the region, briefly recounts universal access and digital inclusion policies that promoted the diffusion of technology, and examines online audiences and their use of social media. Next, it describes select moments in the diffusion process, and concludes with a brief analysis of the impact of this first phase of Internet diffusion in the region.

In order to examine the impact of Internet access in the region, this study focused on a sample that consisted primarily of the four countries in South America with the highest rate of Internet access, and the highest ranked country Central America and the Caribbean, respectively. The countries in our sample include: Argentina, Brazil, Chile, Colombia, Costa Rica, and the Dominican Republic. All of these countries, with the exception of Argentina, were among the first to establish universal access policies and to pursue concerted national strategies for digital inclusion. They have consequently achieved the highest rates of Internet access per capita in the region, a pre-condition for the analysis of the diffusion of this technology among the population.

Given this filter, the study cannot be considered representative of the entire region. Yet it provides a snapshot of digital inclusion in those countries where Internet access is no longer an elite privilege, but has reached critical mass. In this context, Mexico was excluded from the sample because its sizable audience of 31 million Internet users

nonetheless represent less than one third of the country's population.[4]

INTERNET ACCESS IN LATIN AMERICA

Access to the Internet has grown exponentially in Latin America over the past decade. The International Telecommunications Union (ITU) estimates that in 2009 there were 144.5 million Internet users in South America, 6.4 million in Central America, and 8.2 million in the Caribbean, or a total 159.2 million users in all of Latin America.[5] At that time, ITU reported an estimated 31 million Internet users in Mexico, which would bring the overall number of users in Latin America to 190.2 million people. More recent estimates published by Internet World Stats place Internet access currently at an estimated 204.6 million out of a total population of 592.5 million in the region (this figure includes Mexico).[6] According to those figures, 34.5 percent of the Latin American population now enjoys Internet access.

[4] ITU, "Information Technology Public & Report."
[5] ITU, "Information Technology Public & Report."
[6] Internet World Stats, "Internet Usage Statistics for the Americas."

Table 1 - ***Internet Access in Select Latin American Markets***

Country	Fixed Internet subscriptions (000s)	Fixed Internet subscriptions (%)	Estimated Internet Users (000s)	Estimated Internet Users (%)
Argentina	4,695.90	11.7%	13,694.00	34.0%
Brazil	15,785.00	8.2%	75,982.40	39.2%
Chile	1,655.50	9.8%	7,008.70	41.3%
Colombia	2,266.20	5.0%	22,537.60	49.4%
Costa Rica	271.5	5.9%	1,484.50	32.4%
Dominican Republic	429	4.3%	2,701.10	26.8%
Sample Average	4,183.85	7.5%	20,568.05	37.2%

Source: International Telecommunications Union, 2011.

As shown in Table 1, at least one-third or more of the population in the sample are connected to the Internet. That figure is lower for the Dominican Republic, where 26.8 percent of the population is online. Figures in Table 1 also show that fixed Internet subscriptions per capita remain low (below 12 percent), an indication that a majority of users in 2009 probably connected online at public access points, or from work and school, rather than from home.

Connectivity remains slow for the vast majority of Internet users. Broadband access in the sample is limited to an average 6.4 percent of users. Table 2 shows that even in Argentina and Chile, where broadband access is more prevalent, only one out of every 10 people connect to the Internet at high speeds.

Table 2 - *Broadband connectivity*

Country	Broadband Access (% of users)
Argentina	10.6%
Brazil	5.9%
Chile	9.6%
Colombia	4.4%
Costa Rica	3.9%
Dominican Republic	3.9%
Sample Average	6.4%

Source: International Telecommunications Union, 2011.

Broadband connections may be few but; the number of wireless connections is fast expanding. The economic liberalization and regulatory changes enacted in Latin America over the past two decades prompted an accelerated build-out of telecommunication infrastructure in the region, effectively resulting in the leapfrogging of wireless access technologies over wired connections. Telecommunications in Chile provides one such example: there are thrice as many wireless connections as there are fixed lines.[7] In Peru, that ratio is two to one. Only in Brazil do wireless and wired technologies reach a similar number of subscribers.

It is reasonable to expect that the continued steady roll-out of wireless connections over the next few years might contribute to the increase of affordable connectivity for the public at large. Indeed, wireless connections may eventually outnumber the more costly wired infrastructure in the region.

[7] M. García-Murillo, & J. Rendón,, "A model of wireless broadband diffusion in Latin America," *Telematics and Informatics,* 26(3) (2009): 259-269.

Brazil provides a case in point: subscriptions to landline phones declined at the same time that subscriptions for mobile telephony increased over the past few years.[8]

SOCIO-ECONOMIC POLICY AND CONNECTIVITY

Universal access policies contributed to the vast increase in digital literacy and Internet use in Argentina, Brazil, Chile, Colombia, and Costa Rica in recent years. Whereas the latter was the first country in the region to adopt a policy of universal access, the region's most expansive and successful digital inclusion programs have taken hold in Brazil and Chile. These two countries have allocated considerable resources to the promotion of digital literacy and Internet access among low income and poor populations; in both cases, civil society groups significantly assisted in the promotion of inclusion at the grassroots level.

In Brazil, where the previous government enacted 17 different measures to promote digital inclusion,[9] the administration of President Dilma Rousseff has also endorsed the Brazilian National Broadband Plan, which prescribes the creation of 100,000 telecasters nationwide by 2014, all connected to the Internet via broadband and a domestic satellite link.[10] The government's universal access policy guides the concerted efforts of the Ministries of Agrarian Development, the Planning Ministry, the Ministry of Science and the Ministry of Communication to promote access through programs like *Territorios Digitais* (Digital Territories), an initiative aimed at the digital inclusion of

[8] Crump, "The finch and the fox."
[9] Observatório Nacional de Inclusão Digital [ONID], "Portal de Inclusão Digital" [Digital inclusion portal], accessed May 20, 2008, http://www.inclusaodigital.gov.br.
[10] Brasil: Ministério das Comunicações, "Um plano nacional para banda larga: O Brasil em alta velocidade" [A national broadband plan: Brazil at high speed], accessed April 1, 2010, http://www.mc.gov.br/plano-nacional-para-banda-larga.

rural poor, landless and displaced peoples. The program, which operated 3,514 telecenters in 2010, approved the creation of 6,508 new ones in May of that year.[11]

Chile has the highest rate of per capita spending on information and communication technology (ICT) within the region.[12] *Infocentro* (Infocenter), the national telecenter network launched in 2002, operated 729 public access points in public buildings and libraries by 2008.[13] A separate digital inclusion program *Programa Redes Telecentros Comunitários* (Community Telecenter Network Program) was established in 2003 by civil society groups in concert with the *Facultad Latinoamericana de Ciencias Sociales* (FLACSO - Latin American College of Social Sciences) targeting low-income populations.[14]

Other digital inclusion efforts in the region are also worth noting. Colombia, in 1998 borrowed key provisions from the Chilean model for its new telecommunication policy in 1998, and adopted the ICT-for-development strategy in 2000.[15] Also in 2000, Colombia launched an e-government program called *Agenda de Conectividad* (Connectivity Agenda) and proceeded to create 1,490 telecenters. By 2007, these centers served five million rural people, more than half of them under the poverty line.[16]

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[11] R. Moura, personal conversation, April 19, 2010.
[12] ITU, "ITU ICT eye," accessed May 22, 2008, http://www.itu.int.
[13] Subsecretaria de Telecomunicaciones--Chile [SubTel], "Red nacional de infocentros" [Nacional infocenter network], accessed April 18, 2008, http://www.subtel.cl.
[14] Programa Redes Telecentros Comunitários, "Red de telecentros" [Telecenter network] accessed May 20, 2008, http://www.telecentroscomunitarios.cl.
[15] infoDev, Practice note: Colombia's Compartel programme, "ICT regulation toolkit", accessed March 20, 2011, http://www.ictregulationtoolkit.org/en/PracticeNote.aspx?id=3147.
[16] Colombia: Ministerio de Comunicaciones, "Resumen de la Evaluación del Impacto y Análisis de Viabilidad de los Programas Compartel - Internet Social" [Summary of the evaluation of the impact and viability

In the Dominican Republic, the *Centros Tecnológicos Comunitarios* (Community Technology Centers) program provides another example of a government-run digital inclusion effort that is national in scope and targets impoverished populations. President Leonel Fernández' administration, which plans to build a total 135 telecenters in the network, launched complementary initiatives that include special access points for persons with disabilities, and *Comunicadores para el Desarrollo* (Communicators for development), a citizen reporter training program where adult students learn to use digital multimedia to file online reports about their communities.[17]

Digital literacy and Internet access have come to represent, particularly in the area of education, a welcome complementary resource for populations chronically underserved in nations with a long-standing record of inadequate public social services. In Brazil, where technological capacity-building is widely perceived as a path out of poverty, the civil society organizations, such as the *Comité para Democratização de Informática* (Committee for Democracy in Information Technology, or CDI) have paired up with community leaders since 1995 to establish *Escolas de Informática e Cidadania* (Informatics and Citizenship Schools) and telecenters in poor urban and rural areas.[18] ICT capacity-building has grown exponentially over the last decade: more than 200,000 students are currently enrolled in federal technology programs and over 500 schools are offering ICT training. In 2010, the Education Ministry

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análisis of the Compartel– social Internet - programs], accessed April 15, 2008, http://www.avanza.org.co.

[17] P. Prado, "Bridging digital poverty: Adoption of information and communication technologies at community technology centers in the Dominican Republic" (PhD diss., University of Miami. Coral Gables, FL, 2009).

[18] Center for Digital Inclusion [CDI], "Transforming lives through digital inclusion 16 years, 11 countries, 1.3 million people," accessed May 5, 2011, http://cdiglobal.org/.

launched *Aluno Integrado* (Integrated Student), a program that enrolls high school students in 180 hours of ICT classes for a five-month period.[19]

In Colombia, the *Computadores para Educar* (Computers for Education) initiative provided schools with ICT access under a partnership between Compartel, an agency of the Ministry of Telecommunications responsible for promoting social policy, and the private sector. Similar programs are underway in Costa Rica, where the universal access policy instituted digital literacy training for public school teachers. Currently, less than six out of 10 students use computers.[20]

Argentina remains the only country in the sample without an effective digital inclusion strategy. While private Argentine companies and investors in the late 1990s led early efforts to fund Web portals targeted to Spanish-language audiences, those commercial ventures did not herald a governmental endorsement of universal access policies. Only recently did Argentina announce a legislative initiative, the Technical Education Act, which will equip public schools with three million laptops, improve Internet access in 1,200 schools, and train teachers in digital literacy, effective in 2012. Argentina lags far behind its neighbor Uruguay, which took the lead in universal access in 2006 as the first nation in the region to adopt a One Laptop per Child policy in primary schools, reaching 395,000 children in first through sixth grades.[21] This program, known as *Plan Ceibal*, an acronym

[19] J. Crump, "The Stampede*".* London, UK (2011): RazorFish, http://www.slideshare.net/razorfishmarketing/stampede-5566798.

[20] Prosic, cited by J. Villegas in "Redes sociales emergen como herramienta académica del MEP" [Social networks emerge as academia tools of the MEP], *La Nación*, accessed March 19, 2001, http://www.nacion.com/.

[21] One laptop per child, "Miguel Brechner Frey: Revolucionando la educación en Uruguay" [Revolutionizing education in Uruguay], accessed May 5, 2011, http://laptop.org/en/children/countries/uruguay.shtml.

for Basic Informatic Educative Connectivity for Online Learning (*Conectividad Educativa de Informática Básica para el Aprendizaje en Línea*), has made it possible for low income households to engage in home computing. Still, less than half of the students who received laptops can go online, given that four out of 10 public schools in rural areas have yet to be connected to the Internet.[22]

Indeed, connectivity remains a challenge for many households in both rural and urban areas. Up until now, and as noted in Table 1, large segments of the population have relied primarily on government-run public access points, LAN (local area networks) houses, Internet cafés, and other commercial establishments to connect to the Internet; comparatively few people connect from home. In Brazil, non-governmental organizations (NGOs) such as the CDI and the *Gemas da Terra* (Gems of the Earth) networks in Brazil, which were at the forefront as providers of affordable Internet access, remain the providers of choice, especially among low income populations. Elsewhere, a mix of private, non-profit, and government stakeholders have joined forces to establish public Internet access points, as is the case of *Infocentros* in El Salvador, which had made access possible for 340,000 users since its launch in 2002.[23] Whether they log in at a community telecenter in the Dominican Republic, a schoolhouse in Brazil, a government building in Chile, a public kiosk (*cabinas públicas*) in Peru, or a commercially-run Internet café in Argentina, more and more Latin Americans are doing so, and many more are soon to join them online.

[22] "Education in Uruguay: A pioneering project's chequered start," Oct. 3, 2009, *The Economist*, 392(8651), 46-46.

[23] Noyola, R., Development of the Internet in El Salvador," *Listasal*, accessed May 5, 2011,http://www.listasal.info/english/internet-in-el-salvador/3-government-projects.shtml.

ONLINE AUDIENCES IN LATIN AMERICA

Digital inclusion is vastly expanding throughout the region, thanks to stabilizing economies, increasingly affordable technology, and the rapid growth in the supply of cellular mobile telephony. A recent study by the global advertising agency Razorfish revealed significant shifts in the demographics of digital inclusion in the major economies of South America, where Web access is rapidly increasing amid the lower middle class and the working poor.[24] The figures cited in this section come from that report, unless otherwise noted.

In Argentina, notebook computer and netbook sales grew by 59 percent reaching almost one million units sold in 2009.[25] Internet use increased 90 percent amid the emerging C classes in 2010, a growth rate that matches that of the more affluent A and B classes.[26]

In Brazil, nine out of 10 personal computers sold in 2010 were purchased by the emerging classes. Partly in response to the 2005 initiative *Computador para todos* (Computers for All), which made low-cost computers tax exempt, local manufacturers recently stepped up production of inexpensive laptops, making computers affordable to the working poor.[27] Indeed, one-half of all Internet users in Brazil belong to the C, D, and E emerging classes. Almost 60 percent of the 18 million families who access the Internet at home belong to emerging class C, 10 times as many as in 2004.[28] Eight out

[24] Crump, "The finch and the fox."
[25] Crump, "The finch and the fox."
[26] Dalessio, cited in Crump, "The finch and the fox."
[27] Brasil: Ministério da Fazenda, "Governo federal amplia benefícios do Programa Computador para Todos" [Federal government widens benefits of the Computer for All program], retrieved April 15, 2008, http://www.computadorparatodos.gov.br.
[28] CPqD cited in G. M. de Holanda; I. M.A. Ávila,; & R. B. Martins, "Mapping users' perspectives and outlining social impacts from

of 10 of them consider the computer an essential part of their lives. The study concluded that class C Brazilian slum-dwellers "have already overtaken the members of the Classes A and B in their access to computers."[29]

In Argentina and Brazil, more than one-half of the population now belongs to this new "digital middle class." They are between 12 and 35 years of age and have a household income equivalent to anywhere between US$541.00 and US$2,892.00.[30] In Brazil, this represents 37 million families, or three-quarters of the national income. In Argentina, they represent 61 percent of the national income. These families perceive digital literacy and Internet access as a way to complement a poor and rather ineffective public education system. According to Crump, "More than any other class, they are adding skills and moving up the economic ladder the fastest. And the main driving force of all of this is the Internet and digital media."[31]

This trend evolving in Argentina and Brazil signals a shift toward a more equitable distribution of Internet access which has yet to spread to the rest of the region. Costa Rica is one such case where patterns of socio-economic inequality still prevail when it comes to connectivity rates: more than one-half of all Internet users in the Central American nation belong to upper or middle income families, and 47 percent have a college education.[32]

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digitalization of terrestrial TV in Brazil," *Telematics and Informatics*, 25(1), 2008: 19-35.

[29] Crump, "The finch and the fox," p. 10.

[30] Crump, "The finch and the fox," p. 20.

[31] Crump, "The finch and the fox," p. 18.

[32] P. Q. Fonseca, "185.000 ticos acceden a una red social en Internet diariamente" [185,000 Costa Ricans access a social network on the Internet daily], *La Nación*, accessed March 19, 2011, http://www.nacion.com.

Young, urban, and under 35

Internet users in the region are primarily young, urban demographic and so are those who use social media. Facebook users in Latin America tend to be slightly younger (from 25 to 27 years old on average) than their counterparts elsewhere in the world who average 28.2 years of age.[33] The audience for competing regional social networking sites Hi5 and Orkut skews even younger: seven out of 10 Orkut users are under 34 years of age-- 18 to 24 year old males form the majority-- as indicated by an analysis of metrics in Alexa.[34] In Costa Rica, the first country to adopt a universal access policy, seven out of 10 social media users are under 30 years old and the majority is urban: 61 percent live in the Valle Central area where the capital San José is located.[35]

In Argentina, one-third of Internet users over 15 years of age spend most of their time on search engines, another third on social networks, and 20 percent rely primarily on chat, instant messaging, or e-mail applications.[36] In Chile, 35 percent of teens between 12 and 18 years of age were already online in 2002, using the Web primarily for entertainment, homework, and chatting.[37] By 2010, eight out of 10 Chilean pre-teens used the Internet for help with homework.[38]

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[33] Amover, "Facebook demographics worldwide," retrieved March 18, 2011, http://amover.wordpress.com/2011/01/17/facebook-demographics-worldwide/.

[34] http://rapid.searchmetrics.com/en/seo-tools/site-analysis/alexa-challenge,57.html.

[35] Fonseca, "185.000 ticos acceden a una red social en Internet diariamente."

[36] "Las redes sociales desplazan al chat en Argentina" [Social networks displace chat in Argentina], *La Nación*, accessed March 19, 2011, http://www.lanacion.com.ar.

[37] L. Ulloa, & F. Montecinos, "Nativos Digitales Chilensis: Los jóvenes, al sur de la Internet" [Chilean digital natives: The youth, south of the Internet], *Revista Latina de Comunicación Social*, 11(63) 2008: 22-30, accessed from EBSCOhost.

[38] G. Bade, "Los niños de la Generación XD prefieren hablar con sus amigos cara a cara" [The children of generation XD prefer to talk to

Meanwhile, in Costa Rica, Internet users dedicate most of their time online to chatting or instant messaging, followed by the use of e-mail applications.[39] Overall, an estimated seven out of 10 use instant messaging applications, the same adoption rate seen in the Middle East and more than twice that of the United States.[40]

Table 3 - *Total hours spent online (per visitor, per month)*

Country	**Hours**
Argentina	23.1
Brazil	24.0
Chile	20.4
Colombia	24.6
Venezuela	23.5
World average	22.3

Source: Comscore World Metrix.[41]

Time Spent Online

The youth of the online audience in Latin America may be part of the reason why Internet users in the region spent as much or more of their time online as the average user elsewhere in the world. Time spent online has actually declined; according to comScore, users in Argentina averaged 32.4 hours online each month in 2008, then only

friends face-to-face], *El Mercurio*, accessed March 19, 2010, http://diario.elmercurio.cl.

[39] Fonseca, "185.000 ticos acceden a una red social en Internet diariamente."

[40] Comscore, cited in Crump, "The finch and the fox."

[41] Cited in Crump, "The finch and the fox."

slightly higher than the time users spent online in Brazil and Venezuela. The increased number of wireless access points that now provide faster Internet connections may have contributed to the decline in this metric. Figures in Table 3 indicate that the average time spent online by Internet users in Argentina, Brazil, Colombia and Venezuela is now only slightly higher than the average for users worldwide.

The Top 10 Web Properties

The same four Web properties that attracted the largest number of unique visitors in the U.S. in February 2011 also led the rankings in Web traffic in Latin America. Yahoo!, Google, Microsoft, and Facebook were among the top 10 most trafficked sites in the region.[42] Table 4 ranks the top 10 Web sites with the most traffic in each of the countries on March 17, 2011. These figures show that Web content published by U.S. media properties far outpaced traffic to sites originated in the region.

Facebook is the predominant social media site, ranked among the top 10 most visited sites in all six countries. It was the top-ranked site in Argentina, Chile, Costa Rica, and the Dominican Republic, and ranked second in Colombia. Only in Brazil, headquarters for rival Orkut (ranked fourth) had a long-established market lead, did Facebook rank lower, appearing in seventh place. Google's blog platform Blogger ranked among the top 10 in all countries, outperforming the micro-blog platform Twitter. The latter ranked among the top 10 only in Colombia and the Dominican Republic.

[42] comScore, "comScore Top 50 properties (U.S.) February 2011 Total U.S. – home, work and university locations," *comScore Media Metrix*, accessed March 26, 2011, http://www.comscore.com.

Table 4 - *Top 10 sites ranked by traffic in selected countries*

Argentina		Brazil		Chile	
Rank	Web site	Rank	Web site	Rank	Web site
1	Facebook	1	Google Brasil	1	Facebook
2	Google Argentina	2	Google	2	Google Chile
3	Google	3	YouTube	3	Google
4	YouTube	4	Orkut	4	YouTube
5	Windows Live	5	UOL	5	Windows Live
6	Yahoo!	6	Windows Live	6	Blogger
7	Blogger	7	Facebook	7	Las Ultimas Noticias
8	Taringa!	8	Globo.com	8	Yahoo!
9	Mercado Libré	9	Blogger	9	MSN
10	MSN	10	Yahoo!	10	Wikipedia

Colombia		Costa Rica		Dominican Republic	
Rank	Web site	Rank	Web site	Rank	Web site
1	Google	1	Facebook	1	Facebook
2	Facebook	2	Google	2	Google
3	Google Colombia	3	Google C. Rica	3	Google Dominican Rep.
4	YouTube	4	YouTube	4	YouTube
5	Windows Live	5	Windows Live	5	Windows Live
6	Yahoo!	6	Yahoo!	6	Blogger
7	MSN	7	Blogger	7	Yahoo!
8	Blogger	8	Wikipedia	8	Wikipedia
9	Wikipedia	9	Nación	9	MSN
10	Twitter	10	MSN	10	Twitter

Source: Alexa, March 17, 2011.

In terms of search engine traffic, Google was the undisputed leader, attracting users to both the English-language and local versions. It ranked in the top three most visited sites in every country, and led the rankings in Brazil and Colombia. The video search engine YouTube likewise ranked among the top 10 in all countries, as did the Windows Live software and services platform.

Content aggregator Yahoo! also ranked among the top 10 in every country, as did MSN in every country except Brazil. Local content providers appeared among the top 10 in Argentina, Brazil, Chile and Costa Rica, but not in Colombia

or the Dominican Republic. In Brazil, Chile, and Costa Rica these were mainstream news media outlets.

Social Networks

As many as 167 million people in Latin America (excluding Mexico) have joined online social networks. That figure amounts to eight out of every 10 Internet users in the region.[43] This adoption rate is practically equivalent to that in the U.S., and much greater than that in the Arab world, where 15 million Facebook users accounted for less than one in four of the 63 million online users in that region.[44] Latin American Internet users had until recently favored homegrown social networks properties. Hi5 and Orkut were the preferred platforms for participatory community in the mid-2000s. However, the number of Facebook accounts has sharply increased in the six months prior to January 2011. Argentina, Brazil, Colombia, and Peru ranked among the 20 countries with the highest growth in Facebook users.[45] Since late 2010, the number of accounts in Brazil, the Dominican Republic, Ecuador, El Salvador, Honduras, Mexico, Nicaragua, Paraguay, and Peru increased by 30 percent.[46]

Figures in Table 5 indicate that Facebook alone reported an estimated 93 million users throughout Latin America. Argentina, Brazil and Colombia each accounted for 13 million users. Indeed, Argentina, Brazil, Chile, Colombia

[43] Fonseca, "185.000 ticos acceden a una red social en Internet diariamente."
[44] Feuilherade, 2011.
[45] O. Regalado, "Facebook en Latinoamérica: Casi 100 millones" [Facebook in Latin America: Almost 100 million], *Infografía*, accessed March 15, 2011, http://www.dosensocial.com/2011/02/26/facebook-en-latinoamerica-casi-100-millones-infografia/.
[46] M. Lira, "Crecimiento de Facebook en Latinoamérica" 2o. Semestre 2010 [Facebook growth in Latin America second semester 2010], *Infografía*, accessed March 19, 2011, http://www.dosensocial.com/2011/01/18/crecimiento-de-facebook-en-latinoamerica-infografia/#ixzz1GiCLu0lu.

and Venezuela ranked among the top 20 countries with the highest Facebook traffic.[47]

Table 5 - *Facebook users*

Country	Facebook users (in millions)
Argentina	13.3
Brazil	13.4
Chile	7.7
Colombia	12.7
Costa Rica	1.2
Dominican Republic	1.8
South America Total	65.3
Latin America Total	93

Source: socialbakers.com, 2011.

One out of five Hi5 accounts originated in Mexico, Ecuador and Peru, where the site ranked 12th in traffic. In Costa Rica, where Hi5 had ranked as the top social network in 2009, it now attracts only 19 percent of Internet users, having lost ground to Facebook.[48] In Brazil, Orkut has managed to maintain its lead over Facebook. The social network ranked as the 12th most visited site in Brazil, where it attracted 61 percent of all social media traffic in June 2010, earning it the rank of fourth top visited Web property in the country, ahead of Facebook, as shown in Table 4.[49]

[47] Amover, "Facebook demographics worldwide."
[48] Fonseca, "185.000 ticos acceden a una red social en Internet diariamente."
[49] comScore, "comScore Top 50 properties (U.S.) February 2011 Total U.S. – home, work and university locations;" Crump, "The finch and the fox."

The Blogosphere

It is notable that the Blogger platform ranked among the top 10 sites with the most traffic in all six countries. Many of the bloggers in the region are journalists, columnists or other media professionals, yet blogs have yet to become the subject of mainstream media coverage or a commonplace pursuit for the average Internet user. A mere 9 million bloggers were online in the region in 2008; and those who published on Blogger and Wordpress reached slightly more than 40 million unique visitors in April of that year.[50] One-half of the top-ranked blogs posted in Argentina were of a personal nature, following a pattern similar to that seen in the U.S.[51] Elsewhere in the region, politics, technology and sports led as top-ranked blog topics.

Twitter

While blogs have been relatively slow to take off in the region, the micro-blogging platform Twitter experienced a vast surge in diffusion in 2010. That year, Brazil and Venezuela ranked second and third in Twitter penetration in the world, behind Indonesia which led with a penetration of 21 percent of Internet users.[52] In Chile, Twitter accounts represented 17 percent of all online users in the nation[53] while Argentineans were not far behind, with 12.5 percent of Internet users having adopted a Twitter account. A measure of the popularity of the Twittersphere in the Southern Cone countries was evident when star soccer players who were in South Africa for the World Cup posted public tweets about being homesick and missing their families, and some

[50] comScore, "comScore releases top Latin America Web rankings for April 2008," *comScore World Metrix*, retrieved June 12, 2011, http://www.comscore.com.

[51] The Jeffrey Group, "The blogosphere in Latin America: A four country case study", Miami, FL. October 2008.

[52] Indonesia, Brazil, "Venezuela lead surge in Twitter usage," *BBC Worldwide Monitoring*, accessed March 17, 2011, Lexis-Nexis.

[53] Bade, "Los niños de la Generación XD prefieren hablar con sus amigos cara a cara."

coaches found it necessary to restrict team use of social media to avoid distraction before the matches.[54]

Politicians in the region have also joined the trend. In Costa Rica, newly-elected President Laura Chinchilla, who ordered cabinet members to go digital, has her own Twitter handle.[55] Social media was an integral part of the campaign arsenal during recent presidential elections in Brazil. Campaign organizers relied on Twitter, Facebook, Orkut and short message service (SMS) as conduits to opinion leaders in major metropolitan areas. Brazilian Labor Party candidate Dilma Rousseff hired Blue State Digital, the company behind Barack Obama's presidential campaign social media strategy, to help her win the presidency. We can expect a similar dynamic to occur in the upcoming presidential election in the Dominican Republic: political leaders have approached Blue State Digital in preparation for the next campaign season. The use of social media as an integral component of electoral campaign strategies provides an indication that Internet use has gained in popularity as a vibrant public sphere. The final section of this study describes select events that might signal a tipping point in the dynamics of political expression in the region.

SOCIO-POLITICAL IMPACT OF THE INTERNET IN LATIN AMERICA

Rojas, Puig Abril, Wright and Berrio[56] contend that the use of the Internet and mobile phones for the purpose of

[54] Twitter, "Facebook emerge as key info tools at World Cup", *Korea Times*, June 17, 2010.
[55] E. Mata, "Ministros de Chinchilla se apuntan en redes sociales" [Chincilla ministres sign up on social networks], *La Nación*, accessed March 19, 2011, http://www.nacion.com.
[56] H. Rojas, E. Puig Abril, P. Wright, & C. Berrio, "Mobilizers Mobilized: Information, Expression, Mobilization, and Participation in the Digital Age," Conference Papers -- International Communication Association, 2009, 1-37. Retrieved from EBSCOhost.

gathering information results indirectly in participation in political life in the real world. Indeed, the researchers found that blogs and mobile Internet access can have a democratizing effect. Other researchers have reached the same conclusion[57] and have suggested that Internet access will bring about greater civic participation and engagement,[58] although skeptics remain unsure this could happen in Latin America.[59] Still, there are indications that civil society groups in the region are starting to embrace the Internet as an organizing tool. This section explores some recent instances of political mobilization facilitated through the use of the Web and social media applications.

Civic engagement

One of the first instances of organized protest sparked by social media communication happened in Chile, where "smart mobs" nationwide demonstrated against former Chilean President Michelle Bachelet when she failed to enact education reforms in May 2006. Mainstream media accounts have attributed the origin of the protests to Facebook posts and SMS messages that urged students to skip school. Six hundred thousand students took to the streets to demand free transportation and free university entrance exams, leading to school cancellations and sit-ins at universities and colleges. Teenagers led the organization of the protests, coined "The

[57] E. J. Friedman, "The Reality of virtual reality: The Internet's impact within gender equality advocacy communities" (Working Paper), accessed March 17, 2011, http://mediaresearchhub.ssrc.org/the-reality-of-virtual-reality-the-internet-s-impact-within-gender-equality-advocacy-communities/attachment; P. Norris, "Democratic Phoenix: Reinventing Political Activism." (Cambridge, MA: Cambridge University Press, 2002); D. V. Shah, J. M. McLeod, & Y. So-Hyang, "Communication, Context, and Community: An Exploration of Print, Broadcast, and Internet Influences," *Communication Research,* 28(4), 2001: 464.

[58] N. Negroponte, "Being Digital," (New York: Random House, 1996); C. Shirky, "The Political Power of Social Media," *Foreign Affairs*, 90(1), 2011.

[59] M. García-Murillo & J. Rendón, "A model of wireless broadband diffusion in Latin America," 259-269.

March of the Penguins" because protesters wore identical student uniforms.[60]

In Brazil, civil society also rose up against Congress when politicians stalled a vote on legislation that would bar political candidates with a criminal record or convicted of misuse of public monies from running for office. Protestors presented Congress with an online petition bearing 3 million signatures and more than 41,000 e-mails were sent to each congressional representative and senator. Ongoing viral campaigns on Facebook, Orkut, and Twitter eventually led to the passage of the law dubbed *Ficha Limpa* (Clean Record) in October 2010.[61]

One month later, Twitter was once again in the headlines when police in Rio launched a major military operation against drug traffickers holed up in the suburban slum *Complexo do Alemão*. Over the course of a week-long assault when SWAT team sharpshooters, federal police and the military stormed the hillside in pursuit of drug gang leaders, the most riveting and newsworthy eyewitness reports originated not from mainstream media reporters, who inevitably cowered at the foot of the hill, but from the Twitter handle @vozdacomunidade, a 17 year old citizen reporter blogging from inside his shack inside the slum. René Santos Silva led a group of child reporters, aged between 10 and 17, providing live coverage of police actions that spurred an impromptu peace movement on Facebook and Orkut and got the attention of the mainstream press.

Social media use for public relations and disaster response

Internet access has also proved beneficial for smaller-scale, less combative civil society mobilizations. Friedman found that NGOs that provide social services in Buenos Aires, Cordoba, and Rosario relied on the Internet to stay connected

[60] Crump, "The Stampede," p. 79.
[61] Crump, "The Stampede."

with volunteers and supporters during the economic crisis in Argentina in 2000 and 2001, when the high cost of long distance telephone calls and travel out of town threatened to disrupt everyday operations.[62] The Internet has also contributed to an increase in donations to charitable organizations like *Hacer Comunidad* (Making Community) and many others. Everywhere in Latin America, advocates for indigenous populations, LGBT[63] groups, women's groups, and other minorities have taken to the Web to promote their causes, fund-raise and recruit volunteers.[64]

In Brazil, NGOs such as like *Geledés*--the Institute of Black Women in São Paulo-- teaches impoverished black and indigenous women how to use computers and send e-mails so they can more fully participate in society. Also in Brazil, 12 motorcycle courier messengers in São Paulo attracted media attention when they used their mobile phones to record images of accidents, potholes, and other road hazards, then posted the pictures and videos online on a Web site named *Canal Motoboy* (Motorcycle Courier Channel).[65] Government officials in some countries have started to borrow from the lessons learned by civil society, and logged online to promote their messages. In Colombia, Medellin police launched *Concientízate* (Gain Awareness), a campaign aimed at increasing public awareness of pedophile predators on the Internet.[66]

A recent development has been the deployment of Internet applications and SMS technology to assist with disaster relief in Chile and Haiti following devastating earthquakes. Frontline SMS-Ushahidi, Google Maps and Person Finder

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[62] Friedman, "The Reality of virtual reality."
[63] Lesbian, Gay, Bisexual and Transsexual (LGBT).
[64] Friedman, "The Reality of virtual reality."
[65] Crump, "The Stampede."
[66] "A ritmo de rap, policía alerta del peligro en redes sociales" [To the rhythm of rap, police alert Bahouth the danger of social networks], *ElTiempo.com*, accessed March 19, 2011, http://www.eltiempo.com.

applications, as well as Twitter messages supported rescue efforts, helping to connect survivors, and directing aid to victims.[67] Traffic to Twitter surged during the aftermath of the Chilean earthquake, drawing a growing number of women to what had been a primarily masculine micro-blog platform in that country.[68] The platform also gained in traffic when coverage of the 2010 mining incident in Chile merited worldwide media coverage.

Voices from the margins

Marginalized youth and indigenous groups in Chile and Colombia have effectively used the Web to bring their plight to the attention of the mainstream media. Two such examples are Colombia Youth Media Collective *Me Joda* (Mess with me) started by working-class Afro-Colombian and *mestizo* youth in Cali, and *El Tejido de Comunicación* (The fabric of communication), a group of rural indigenous youth, who produce and post videos online that tell about their struggles against racism, violence, unemployment and oppression.[69]

Last but not least, mention should be made of the presence of guerrilla groups on the Web. Ever since the Zapatista Army of National Liberation (EZLN) in Mexico took to the Web in 1994 and galvanized the world media with videos and images of their armed struggle in the mountains of Chiapas, this and other rebel groups in the region have maintained an online presence. More than one dozen Web sites associated with various extremist groups have sought to criticize

[67] "The Internet: The new face of disaster reporting," *The Guardian*, March 29, 2010, p. 30.

[68] G. Bade, "Twitter: una vitrina para el ego, para entretenerse y para cambiar el Mundo" [Twitter: A window for the ego, for entertainment, and for changing the World], *El Mercurio*, accessed March 19, 2010, http://diario.elmercurio.cl.

[69] D. Coryat, "Challenging the Silences and Omissions of Dominant Media: Youth-led Media Collectives in Columbia," *Youth Media Reporter*, 2(1-6), 2008: 138-149.

political leaders and incite the use of violence against established regimes.[70] While the Web sites of two formerly prominent groups, the Revolutionary Armed Forces of Colombia (FARC) and the *Sendero Luminoso* (Shining Path) in Peru, are no longer accessible to the public, the *Ejército de Liberación Nacional* (National Liberation Army) and the Zapatista army continue to maintain their Web presence, although the latter has not updated its Web site since 2005. More recently, in Venezuela, a group identified as Hezbollah Latin America published a Spanish-language Web site and blog alleging links to the Wayuu tribe on the area that borders Colombia.[71] These sites offer limited options for interactivity and seem to be primarily meant to serve as primers about the political movements promoted therein.

CONCLUSION

In sum, Internet access in Latin America is quickly expanding: more than three out of every 10 people in the region are now online. This is no longer a medium restricted to the elite. It is rather a public sphere upon which civil society has staked its claim. In the countries sampled for this study, Internet access has reached a tipping point, and economic forces dictate that other nations in the region will soon experience the same phenomenon.

Formerly the exclusive province of the well-educated upper classes, the Web and its many social media applications has reached critical mass among the emerging classes in major metropolitan areas. In this new environment, more and more people have come to embrace digital literacy as a tool that

[70] D. M. Janbek & P. Prado, "Terrorism and public opinion: Rethinking the role of virtual communities," presented at the 2010 International Association for Media and Communication Research, Braga, Portugal, July 18-22, 2010.

[71] I. Caro, "Presencia de movimientos chiitas en America Latina" [Presence of Chiite movements in Latin America], *Latin American Research Review*, 46(1), 2011: 177-193.

can lead to prosperity and a better life. Furthermore, some of the examples noted in this study point toward a developing trend whereby civil society, through online grassroots movements, is able to effectively pressure public officials, instill transparency and demand accountability in government. Access to the Internet has also made it possible for voices on the margins to participate in the conversation in a way that was never previously feasible.

Unlike in the U.S., where private sector participation drove the fast growth of Internet availability, in Latin America the early involvement of private entrepreneurs in online ventures was not a harbinger of digital inclusion. Indeed, it was primarily where a mix of governmental, non-governmental and civil society stakeholders collaborated that universal access policies quickly expanded Internet reach. In this setting, where the under-35 urban youth demographic swells the ranks of Internet users, concerted strategies aimed at promoting digital inclusion among the working poor and rural populations are starting to take shape. It remains to be seen whether these policies will take effect and succeed in bridging the digital divide that isolates older adults, the underprivileged and other marginalized groups.

WORKS CITED

Alexa, (2011). Alexa Rank traffic Challenge for 3 domains. http://rapid.searchmetrics.com/en/seo-tools/site-analysis/alexa-challenge,57.html.

Amover. (2011). *Facebook demographics worldwide.* Retrieved March 18, 2011 from http://amover.wordpress.com/2011/01/17/facebook-demographics-worldwide/.

"A ritmo de rap, policía alerta del peligro en redes sociales" [To the rhythm of rap, police alert Bahouth the danger of social networks]. (2011, Mar. 3). *ElTiempo.com.* Retrieved March 19, 2011 from http://www.eltiempo.com.

Bade, G. (2010, Jan 16). Los niños de la Generación XD prefieren hablar con sus amigos cara a cara [The children of generation XD prefer to talk to friends face-to-face]. *El Mercurio*. Retrieved March 19, 2010 from http://diario.elmercurio.cl.

_____ (2010, Mar 19). Twitter: una vitrina para el ego, para entretenerse y para cambiar el mundo [Twitter: A window for the ego, for entertainment, and for changing the World]. *El Mercurio*. Retrieved March 19, 2010 from http://diario.elmercurio.cl.

Brasil: Ministério da Fazenda (2008). *Governo federal amplia benefícios do Programa Computador para Todos* [Federal government widens benefits of the Computer for All program]. Retrieved April 15, 2008, from http://www.computadorparatodos.gov.br.

_____Ministério das Comunicações (2009). *Um plano nacional para banda larga: O Brasil em alta velocidade* [A national broadband plan: Brazil at high speed]. Retrieved April 1, 2010 from http://www.mc.gov.br/plano-nacional-para-banda-larga.

_____Ministério de Comunicaciones. (2007, August 29). *Resumen de la Evaluación del Impacto y Análisis de Viabilidad de los Programas Compartel - Internet Social* [Summary of the evaluation of the impact and viability análisis of the Compartel– social Internet - programs]. Retrieved April 15, 2008 from http://www.avanza.org.co.

Caro, I. (2011). Presencia de movimientos chiitas en America Latina [Presence of Chiite movements in Latin America]. *Latin American Research Review, 46*(1), 177-193.

Center for Digital Inclusion [CDI], (2011). Transforming lives through digital inclusion 16 years, 11 countries, and 1.3 million people. Retrieved May 5, 2011 from http://cdiglobal.org/.

clickbunker, (2011, Jan.). Cómo usan las nuevas tecnologías los argentinos [How Argentineans use the new Technologies.] Retrieved March 24, 2011 from http://www.clickbunker.com/como-usan-las-nuevas-tecnologias-los-argentinos/.

comScore (2011). comScore Top 50 properties (U.S.) February 2011 Total U.S. – home, work and university locations. *comScore Media Metrix.* Retrieved March 26, 2011 from http://www.comscore.com.

_____ (2008). comScore releases top Latin America Web rankings for April 2008. *comScore World Metrix*. Retrieved June 12 from http://www.comscore.com.

Coryat, D. (2008). Challenging the Silences and Omissions of Dominant Media: Youth-led Media Collectives in Columbia. *Youth Media Reporter, 2*(1-6), 138-149.

Crump, J. (2011). *The Stampede.* London, UK: RazorFish.

_____ (2010). *The finch and the fox*. London, UK: RazorFish.

de Holanda, G. M.; Ávila, I. M.A.; & Martins, R. B. (2008). Mapping users' perspectives and outlining social impacts from digitalization of terrestrial TV in Brazil. *Telematics and Informatics, 25*(1), 19-35.

Education in Uruguay: A pioneering project's chequered start. (2009, Oct. 3). *The Economist, 392*(8651), 46-46.

Fonseca, P. Q. (2010, Sep. 3). 185.000 ticos acceden a una red social en Internet diariamente [185,000 Costa Ricans access a social network on the Internet daily]. *La Nación*. Retrieved March 19, 2011 from http://www.nacion.com.

Friedman, E. J. (2003). The Reality of virtual reality: The Internet's impact within gender equality advocacy communities (Working Paper). Retrieved March 17, 2011 from http://mediaresearchhub.ssrc.org/the-reality-of-virtual-reality-the-internet-s-impact-within-gender-equality-advocacy-communities/attachment.

García-Murillo, M. & Rendón, J. (2009). A model of wireless broadband diffusion in Latin America. *Telematics and Informatics, 26*(3), 259-269.

Indonesia, Brazil, Venezuela lead surge in Twitter usage. (2010, August 12). *BBC Worldwide Monitoring*. Retrieved March 17, 2011 from Lexis-Nexis.

infoDev. (2011, Mar.). Practice note: Colombia's Compartel programme. *ICT regulation toolkit*. Retrieved March 20, 2011 from http://www.ictregulationtoolkit.org/en/PracticeNote.aspx?id=3147.

International Telecommunications Union [ITU]. (2011). Internet. *Information Technology Public & Report.* Retrieved May 15, 2011 from http://www.itu.int/.

_____ (2010). *ITU ICT eye: Brazil.* Retrieved May 5, 2010, from http://www.itu.int/ITU-D/icteye/DisplayCountry.aspx?countryId=27.

_____ (2008). *ITU ICT eye*. Retrieved May 22, 2008, from http://www.itu.int.

Internet World Stats. (2011). *Internet Usage Statistics for the Americas.* Retrieved March 24, 2011 from http://www.internetworldstats.com/stats2.htm.

Janbek, D. M. & Prado, P. Terrorism and public opinion: Rethinking the role of virtual communities. Presented at the 2010 International Association for Media and Communication Research, Braga, Portugal, July 18-22, 2010.

Keane, M. (2007). Review of the use of telemedicine in South America. *Journal of Telemedicine & Telecare*, 13(5), 34-35.

"Las redes sociales desplazan al chat en Argentina" [Social networks displace chat in Argentina]. (2011, Mar 3). *La Nación.* Retrieved March 19, 2011 from http://www.lanacion.com.ar.

Lira, M. (2011, Jan. 18). "Crecimiento de Facebook en Latinoamérica" 2o. Semestre 2010 [Facebook growth in Latin America second semester 2010]. *Infografía.* Retrieved March 19, 2011 from http://www.dosensocial.com/2011/01/18/crecimiento-de-facebook-en-latinoamerica-infografia/#ixzz1GiCLu0lu.

Mata, E. May 6, 2010. "Ministros de Chinchilla se apuntan en redes sociales" [Chincilla ministres sign up on social networks]. *La Nación*. Retrieved March 19, 2011, from http://www.nacion.com.

Negroponte, N. (1996) *Being Digital*. New York: Random House.

Norris, P. (2002) *Democratic Phoenix: Reinventing Political Activism*. Cambridge, MA: Cambridge University Press.

Noyola, R. (2007, May 14). Development of the Internet in El Salvador. *Listasal*. Retrieved May 5, 2011 from http://www.listasal.info/english/internet-in-el-salvador/3-government-projects.shtml.

Observatório Nacional de Inclusão Digital [ONID]. (2008). *Portal de Inclusão Digital* [Digital inclusion portal]. Retrieved May 20, 2008, from http://www.inclusaodigital.gov.br.

One laptop per child. (2011). Miguel Brechner Frey: Revolucionando la educación en Uruguay [Revolutionizing education in Uruguay]. Retrieved May 5, 2011 from http://laptop.org/en/children/countries/uruguay.shtml.

Prado, P. (2009). "Bridging digital poverty: Adoption of information and communication technologies at community technology centers in the Dominican Republic". Doctoral dissertation. Coral Gables, FL: University of Miami.

Programa Redes Telecentros Comunitários. (2008). *Red de telecentros* [Telecenter network]. Retrieved May 20, 2008, from http://www.telecentroscomunitarios.cl.

Regalado, O. (2011, Feb. 26). "Facebook en Latinoamérica: Casi 100 millones" [Facebook in Latin America: Almost 100 million]. *Infografía.* Retrieved March 15, 2011 from http://www.dosensocial.com/2011/02/26/facebook-en-latinoamerica-casi-100-millones-infografia/.

Rojas, H., Puig Abril, E., Wright, P., & Berrio, C. (2009). Mobilizers Mobilized: Information, Expression, Mobilization, and Participation in the Digital Age. Conference Papers -- International Communication Association, 1-37. Retrieved from EBSCOhost.

Shah, D. V., McLeod, J. M., & So-Hyang, Y. (2001). Communication, Context, and Community: An Exploration of Print, Broadcast, and Internet Influences. *Communication Research*, *28*(4), 464.

Shirky, C. (2011). The Political Power of Social Media. *Foreign Affairs,* 90(1).

Socarrás, C. I. (2008, Aug. 3). “La política, en ‘click’ con Facebook” [Politics on a click with Facebook]. *ElTiempo.com*. Retrieved March 19, 2011 from http://www.eltiempo.com/archivo/documento/MAM-3039449.

Subsecretaria de Telecomunicaciones--Chile [SubTel]. (2008). *Red nacional de infocentros* [Nacional infocenter network]. Retrieved April 18, 2008, from http://www.subtel.cl.

The Internet: The new face of disaster reporting. (2010, Mar. 29). *The Guardian*, p. 30.

The Jeffrey Group. (2008, October). *The blogosphere in Latin America: A four country case study*. Miami, FL: Author.

Trusov, M.; Bodapati, A.; & Bucklin, R. (2010). Determining influential users in Internet social networks. *Journal of Marketing Research, 47*(4), 643-658.

Twitter, Facebook emerge as key info tools at World Cup. (2010, June 17). *Korea Times*.

Ulloa, L., & Montecinos, F. (2008). Nativos Digitales Chilensis: Los jóvenes, al sur de la Internet [Chilean digital natives: The youth, south of the Internet]. *Revista Latina de Comunicación Social, 11*(63), 22-30. Retrieved from EBSCOhost.

Villegas, J. May 16, 2010. “Redes sociales emergen como herramienta académica del MEP” [Social networks emerge as academia tools of the MEP]. *La Nación*. Retrieved March 19, 2001 from http://www.nacion.com/.

ABOUT THE AUTHOR

Paola Prado is Assistant Professor of Communication at Roger Williams University in Bristol, Rhode Island. Her research focuses on the adoption of information and communication technologies for development and social change in Latin America. She is the co-creator of the Community Communicators journalism and multimedia workshop program, which trains community reporters in remote rural communities in the region. She is the author of journal articles and book chapters on topics related to digital inclusion, media diversity, and the impact of the Internet on gender roles in Latin America.

A pioneer in online media, Dr. Prado directed content for the Latin American and U.S. Latino arm of RealNetworks and led U.S. operations for the Latino community portal *El Sitio*. She began her professional career at the Reuters news agency, where she produced and licensed world news coverage for television broadcast. She went on to head affiliate relations for the pan regional cable news network CBS *TeleNoticias* and later, for the Weather Channel Latin America. Dr. Prado holds a Ph.D. in Communication from the University of Miami, a M.A. in Latin American Studies from Georgetown University, and a B.A. in Cinema from Denison University.

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The **Applied Research Center** advances the research and academic mission of Florida International University. ARC's focus is to solve real-world problems through multi-disciplinary research collaborations within the University's increasingly talented applied and basic research units. It is uniquely structured and staffed to allow for free-flowing exchange of ideas between the University's applied researchers, academia, government, private sector and industry partners. The ARC's vision is to be the leading international university-based applied research institution providing value-driven, real-world solutions, which will enable FIU to acquire, manage, and execute educationally relevant and economically sound research programs. That vision is based on the Center's core values of respect for the environment, health and safety of all individuals, creativity and innovation, service excellence, and leadership and accountability. The Applied Research Center is organized into three core research units: Environment; Energy, and Security and Development. Under the leadership of its Executive Director, the Center reports to FIU's Office of Sponsored Research Administration. An External Advisory Board, encompassing leaders from the private and public sectors, participates actively in the Center's growth and development. The Florida International University Applied Research Council, a team of University deans, executives and faculty guide the development of the Center's programs.

Florida International University is Miami's first and only four-year public research university with a student body of more than 40,000. It is one of the 25 largest universities in the nation. FIU's colleges and schools offer nearly 200 bachelor's, master's and doctoral programs in fields such as international relations, law and engineering. As one of South Florida's anchor institutions, FIU has been locally and globally engaged for more than four decades finding solutions to the most challenging problems of our time. FIU emphasizes research as a major component of its mission. The opening of the Herbert Wertheim College of Medicine in August 2009 has enhanced the university's ability to create lasting change through its research initiatives. Overall, sponsored research funding for the university (grants and contracts) from external sources for the year 2008-2009 totaled approximately $101 million.

The **United States Southern Command** (USSOUTHCOM) is one of ten unified Combatant Commands (COCOMs) in the Department of Defense. It is responsible for providing contingency planning, operations, and security cooperation for Central and South America, the Caribbean, and their territorial waters; as well as for the force protection of U.S. military resources at these locations.

The **National Defense Center for Energy and the Environment** (NDCEE) provides reliable and sustainable solutions to the US Department of Defense in areas ranging from contingency operations to global climate change and greenhouse gas reduction to safety and occupational health. These solutions increase mission readiness and improve the health and safety of our Armed Forces both at home and abroad. The NDCEE provides project management and technical support to the WHEMSAC Program.

Applied Research
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