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Relationships and Connectedness: Weak Ties that Help Social Inclusion Through Public Access Computing

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Of all the benefits public access to computers (PAC) offer users, the most valued by users are having more information for stronger relationships, better learning, and effective transactions. This article analyzes the most salient benefit, more information for stronger relationships with friends and family. Results of a qualitative study among users of libraries, telecenters, and cybercafés in Colombia, South America, show that social media and personal relationships can also have an important community and sociopolitical dimension. By fostering a sense of belonging and connectedness to community and to a larger world, PAC usage often leads to feelings of empowerment and development of social capital, two intangible factors that are critical for community development. This study used a mixed-methods approach, combining surveys and interviews in five regions of the country, to uncover the benefits of PAC for underserved communities. Its findings contribute new insight about the impact of information and communication technologies on community development and social inclusion.

Keywords: development issues; ICT dialogues and discourses; implications for developed and transition economies

1. Introduction

Numerous research and intervention programs have sought ways to help solve development problems such as poverty, illiteracy, disease, unemployment, hunger, corruption, and social inequalities through the use of information and communication technologies (ICT) (Gurstein, 2008; Mehra, Merkel, & Bishop, 2004; Unwin, 2009; Warschauer, 2003). A small proportion of initiatives have explored the potential of ICT to build or strengthen social capital and individual and collective empowerment (Kavanaugh & Patterson, 2001; Norris, 2001; Quan-Haase & Wellman, 2004). However, the measurement of the social and economic impact of ICT, especially in public access environments, continues to be problematic. The results to date generally reflect: (i) a preference to improve practice and action, rather than to generate new knowledge, (ii) a preference for what is narrowly descriptive rather than theoretical, and (iii) a field that is not analytical enough (Heeks, 2009). Much research about ICT impact has been anecdotal or case-study driven, measuring activities, processes, outputs, and outcomes. Furthermore, there is a strong bias toward positive results, while negative impacts are often underreported.

Public access to computers (PAC) is an important component in ICT programs for development: it is through public access venues such as public libraries, community centers, and Internet cafes or cybercafés that marginalized and underserved sectors of the population have opportunities to learn about and use ICT, especially when they do not own a personal computer or when they do not have Internet access at home, at school, or at work. Libraries, telecenters, and cybercafés constitute the PAC ecosystem in the country.

This article presents a new way to understand the impact of PAC based on the results of an in-depth study of how people use libraries, telecenters, and cybercafés in Colombia and South

America. The study emphasized the users' experience and their perceptions of how PAC and ICT usage benefited their daily lives: by listening to their voices, and by eliciting the meanings of their experience using computers and the Internet in public places around the country.

We also identify and seek to understand the *local strategies* users construct while they interact with ICT in public access venues. For this reason, we are using and adjusting the perspective of analysis of local strategies developed by Philipsen, whose approach understands local strategies as tactical processes for managing and improving social life that are developed in, and indigenous to, a given locale or community (Philipsen, 2011). They involve not only local tactics, enacted, and articulated, but also local notions of the problematic and the possible in social life. Local strategies research illuminates the ways in which socio-cultural systems shape pragmatic action in the lives of communities, and in so doing direct attention to some aspects of such systems that are of particular importance. This understanding implies the analysis of local systems of practice, premise, and meaning that animate social life in particular contexts (Miller & Rudnick, 2010). Finally, as a way to get a better understanding of the impacts of ICT, we undertake an exercise comparing these meanings and local strategies with basic criteria that result from analyses of the notions of empowerment and social capital.

The remainder of the article presents a review of the literature relevant to ICT's impact, and PAC in particular, and of the environment for PAC in Colombia, followed by a brief discussion of the literature on social capital and empowerment, two key concepts uncovered by this research that represent understudied impacts of PAC. We then describe the methods used in this study, and the key findings. In the end, we present our analysis and conclude with a discussion of future implications of these findings for the field of ICT for development.

2.   Literature review

It is important to understand the political environment in which PAC operates in Colombia. Even though internal armed conflict has marked recent Colombian history, Colombia shows extraordinary economic stability and steady human–capital growth, which places it among the countries that lead the region's development. Located at South America's northwestern corner, and in a tropical zone that touches the Equator, Colombia's geostrategic location favors commerce and communication. In addition to an incalculable natural diversity, as well as a wide range in climate and ecosystems, Colombia has resources for commercial development due to its proximity to the Panama Canal and to long coastlines bordering the Pacific Ocean on the west, and the Atlantic Ocean through the Caribbean Sea. All of these factors make Colombia the entrance gate to South America, and explain its ports facing the rest of the Americas, Europe, and the Pacific Rim countries (Hudson, 2010).

In spite of important human developments in the last decade, poverty, exclusion, and governability rates are still at dangerous levels (high for the first two and low for the last). These characteristics have been critical to the way people communicate and access information, and they have also affected the way in which Colombians use and acquire ICT (Paz, 2007; Universidad de los Andes, 2009). The progressive nature of government public policy and investment in the communication, education, and cultural realms has favored public access venues in Colombia. Nevertheless, the decisions and commitments of social organizations and the actions taken by communities have been the real development axes of public access venues in the country (Baron & Valdes, 2012).

2.1   *Public access computing*

The global interest on *telecenters* by development agencies and scholars grew dramatically with the turn of the century: numerous publications related to telecenters for development appeared in

peer-reviewed journals, institutional reports and other publications early in the decade (most often cited include Benjamin, 2001; Etta & Parvyn-Wamahiu, 2003; Gomez & Reilly, 2002; Gomez, Hunt, & Lamoureux, 1999; Jensen & Esterhuysen, 2001; Proenza, 2001; Proenza, Bastidas-Buch, & Montero, 2002; Roman, 2003). Special issues focused on telecenters or public access computing were published by several journals relevant to the field of ICT for development: the *Journal of Development Communication* (Vol. 12, no. 2, 2001) and the *Electronic Journal of Information Systems in Developing Countries* (Vol. 4, 2001) both offered a very early analysis of telecenters; for the most part, they focused on why telecenters were not working and how to improve them. Five years later, the *Journal of Community Informatics* (*JoCI*, Vol. 2, no. 3, 2006) dedicated a whole issue to telecenters. Still in 2006, the majority of the studies were still trying to figure out how to make telecenters work better given limited infrastructure, awareness, services and use.

The *JoCI* special issue included two Colombian case studies (Amariles, Paz, Russell, & Johnson, 2006; Parkinson & Ramirez, 2006) that found limited evidence of telecenters use. Similarly, a study of telecenter diffusion in India serves as an example of recent studies on telecenters: it reports not only limited use of the venues, but also finds that users tend to be young, male, relatively more educated school or college students who come from higher income households; the authors conclude that rather than helping bridge social and economic divides in India, "telecenters may sustain existing socioeconomic inequalities within these communities" (Kumar & Best, 2006).

Even though there is important research about public access computing in *libraries* in the USA (Bertot, McClure, Thomas, Barton, & McGilvray, 2007; Gibson, Bertot, & McClure, 2009), including a recent and ambitious study that for the first time assesses the social benefits of public access computing in the USA (Becker et al., 2010), there are relatively few studies of PAC in public libraries in developing countries (Gould & Gomez, 2010; Rutkauskiene, 2008; Walkinshaw, 2007). *Cybercafés* have also been relatively understudied as a social phenomenon, with some noteworthy exceptions that have explored their potential contribution to community development (Finquelievich & Prince, 2007; Gurol & Sevindik, 2007; Haseloff, 2005; Salvador, Sherry, & Urrutia, 2005).

In a recent, extensive review of the literature about the impact of public access to ICT, University of Washington researchers Sey and Fellows (2009) concluded that even though ICT are widely acknowledged as important resources for socio-economic advancement in both developed and developing countries, there is limited definitive evidence of downstream impacts of PAC. This is not necessarily because PAC has had no impact, but because it is particularly difficult to identify and measure. These researchers found that while some studies conclude that impacts are high in a variety of areas (e.g. development of ICT skills, job creation, and civic engagement), other studies find limited impacts. Their report contributes valuable insight to the ongoing debate about the continued relevance of PAC, particularly in cases that receive public funding. This is partly due to the reality that a significant number of such public access ICT initiatives have fallen out of use. Their findings are not new.

Additionally, Sey and Fellows recognize that these initiatives are serving social needs more so than the economic or other high-priority welfare goals usually associated with PAC projects (Sey & Fellows, 2009). A second factor contributing to the general sense of disillusionment is the difficulty in identifying the precise benefits (particularly at the macro-level) of providing and using public access ICT.

Furthermore, recent studies of free access to computers through public libraries in the USA show that in 2008 about 77 million people visited public libraries to get on the Internet; of these, a large proportion is low-income individuals looking for jobs or doing homework at computer centers in the library, or bringing their own laptops and using wireless connections. According

to this study, computers in libraries are used primarily for social connections, education, employment, health and wellness, e-government, community engagement, and managing finances (Becker et al., 2010).

Three types of venues make up the public access ecosystem in Colombia: *Public libraries* are increasingly offering (or planning to offer) access to computers and the Internet. There are 1563 libraries affiliated with the National Network of Public Libraries,[1] and about 16% of them offer PAC, with plans to dramatically extend this to all public libraries by 2015 (Biblioteca Nacional de Colombia, 2011; Ministerio de Cultura, 2010; Ministerio de Cultura & Biblioteca Nacional de Colombia, 2009). *Community telecenters* are non-profit centers that offer PAC as part of a development program or other community initiative such as health, agriculture, or education. Today, there are 1062 telecenters operated by non-government organizations and 1490 operated by government-sponsored programs – primarily the national government's Compartel program – for a total estimate of 2550 telecenters (Amaya, 2007; APC, Escobar Sarria, Paz Martínez, & Ospina Saavedra, 2009; Casasbuenas, 2007; Paz, 2007). *Cybercafés* are for-profit centers that offer PAC as a business, frequently coupled with other services such as food, beverages, and photocopies. Our extrapolation of data from official reports suggests there were 14,166 cybercafés in the country at the beginning of 2010.[2] Based on user surveys from the National Department of Statistics, a recent study found that the just over 50% of Internet access in the country is through PAC venues (Colnodo; Asociación para el Progreso de las Comunicaciones – APC; Corporación Colombia Digital; Observatorio de Sociedad, G. y. T. d. I.-O, Octubre de 2007). In sum, PAC is a key player in use of computers and the Internet in Colombia (almost half the Internet use in the country is through PAC venues).

2.2   *Empowerment and social capital*

The notions of empowerment and social capital are critical to better understanding the intangible dimensions of relationships as a perceived benefit of PAC. We, therefore, briefly review these concepts in the literature, in order to relate them to the findings of this study.

We embrace the concept of empowerment as a process (rather than an event) by which individuals, organizations, and communities gain mastery over their own social and economic conditions, over political processes that affect them, and over their own stories (Melkote & Steeves, 2001). We also define social capital as the *goodwill* available to individuals or groups, which sources lay in the structure and content of an actor's social relations and its effects flow from the information, influence (power), and solidarity it makes available to the social actors (Adler & Kwon, 2002).

For Kabeer (1999), empowerment also invokes an expansion in people's ability to make strategic life choices in the following dimensions: (1) resources – acquired through social relationships/institutions (social capital) (2) agency – the ability to define goals and act upon them (empowerment), with both positive and negative connotations in relation to power, and (3) achievements – resources and agency constituted together. Achievements range from personal and social to educational. Furthermore, as Campbell and Jovchelovitch (2000) pointed out, empowerment directly relates to power, which shapes and constrains the community's sense of social identity and representation. This iterative process of building and rebuilding notions of self-identification leads to the construction and redefinition of identities, mainly related to notions of becoming more autonomous persons, of being better connected with other people and cultures, and of being part of a stronger community of national or international citizenship.

Some scholars (Coleman, 1988) have argued that social capital is unlike all other forms of capital because it is "located" not in the actors but in their relations with other actors. This makes social capital less tangible than all other forms of capital because it exists in the relationships

between people and facilitates activity, just as other forms of capital do. However, this form of capital illustrates how non-tangible/non-monetary forms of capital can still support the exertion of power and influence.

Putnam (1993, 1995) focuses on features of social organizations such as networks, norms, and trust that facilitate action and cooperation for mutual benefit. Putnam defines social capital as the community cohesion resulting from four features of community: (i) the existence of a dense range of local community organizations and networks; (ii) high levels of civic engagement or participation in these community networks; (iii) a strong and positive local identity and a sense of solidarity and equality with other community members; and (iv) generalized norms of trust and reciprocal help and support between community members, whether or not they are personally known to one another.

However, one of the risks expressed by authors such as Woolcock is that high internal linkages combined with low external linkages can produce a situation where internal solidarity is likely to be detrimental to the actors' integration into the broader whole (Woolcock, 1998). Furthermore, Adler and Kwon indicate that, depending on the content of its norms and beliefs, a group with strong internal ties but only few external ties may become insular and xenophobic or, alternatively, may use its internal social capital to encourage and help its members reach out to the surrounding world (Adler & Kwon, 2002).

The relationship between social capital and social networks was highlighted by Williams and Durrance, who argued that both are needed in order to better understand the use of ICT for community development (Williams & Durrance, 2008). Furthermore, there is a marginal yet growing body of literature that highlights the need to adequately understand and measure intangible benefits of ICT such as self-esteem, aspirations, social capital, and empowerment (Garrido, Rothschild, & Oumar, 2009; Kuriyan & Kitner, 2009; Mayanja, 2006; Onyx & Bullen, 2000; Pigg & Crank, 2004; Simpson, 2005). The extension of human capabilities through ICT has been discussed in broad development contexts (Qureshi, 2010), or focused on a single Chilean community (Kleine, 2009) or even a single Peruvian individual (Díaz Andrade & Urquhart, 2009). Furthermore, Pal, Lakshmanan, and Toyama (2009) discuss how the use of ICT transforms social aspirations of underserved communities in India, while Bailey (2009) and Bailey and Ngwenyama (2010) analyze issues of identity and social ties in community telecenters in Jamaica and other developing contexts. On the other hand, Prado, Araujo Camara, and de Figuredo (2010) analyze telecenters in Minas Gerais, Brazil, and conclude that they contribute to community development through opportunities for entertainment, civic participation, and practice professional skills.

As we will see, these dimensions of empowerment and social capital are useful to understand some of the users' perceptions of ways in which using PAC has transformed their lives, especially in bringing about new forms of relations and a sense of belonging to a larger world: what we have called "connectedness."

3. Research methods

We examined public libraries, telecenters, and cybercafés as the principal points of access to ICT in Colombia, building on a previous study of PAC in 25 developing countries around the world (Gomez, 2012a). Under telecenters, we included both community telecenters (supported by non-governmental organizations) and governmental telecenters (supported by the government's Compartel program among others), as described above. Cybercafés were also included; they are commercial, for-profit businesses that offer access to Internet-connected computers and other related services in towns and cities (including food or beverages; connectivity services such as telephone calls, scanning, printing, photocopying, and disc burning; or more diverse services,

such as beauty services, exercise equipment, or video games). We included cybercafés in the study in order to have a more holistic picture of the public access computing ecosystem in Colombia.

We used a mixed-methods approach (Creswell, Plano Clark, Gutmann, & Hanson, 2002) for data collection and analysis, which gives the study added relevance and credibility by combining the breadth of a statistically representative survey with the depth and insight of interviews, and the context and interaction of focus group workshops. The data collection strategy was based on the following activities (described in more detail below): user surveys (1135), semi-structured expert interviews (10), semi-structured user interviews (10), structured operator interviews (100), and focus-group workshops (6) of operators and users in six parts of the country. The survey was based on a statistically representative sample of the population, proportionally adjusted to the demographic characteristics of the five regions. The focus groups in particular allowed us to understand the "information ecosystem" in each location, as they brought together participants who had diverse experiences and used different venues for public access to ICT. All data were collected in Spanish, by native Spanish speakers.

To account for the demographic distribution and regional variety of the country, we divided it into five regions, based on previous communication and development research (Angel, 1998). In each of the five regions, we drew the sample from the capital city and a small municipality (pueblo, under 30,000 inhabitants) in order to reflect the diversity and variety of both urban and non-urban experiences in different cultural settings around the country. The data were collected using the following activities (see all detailed survey instruments, translated in English, at http://bit.ly/xUX2BC):

User surveys (n = 1135 valid responses): We surveyed 1188 users of venues that provide public access to ICT across the country, and received 1135 valid responses to the survey: only 5.22% responses were not valid (most frequent invalid responses were due to more than five questions left blank, unreadable writing, or lost documents); the number of valid responses is statistically representative of the population, adjusting to population distribution in urban and non-urban settings for each of the five regions, based on data from 2005 census.

The survey instruments were developed based on the surveys used in the global study of PAC mentioned earlier, which studied libraries, telecenters, and cybercafés in 25 developing countries (Gomez, 2012a), which includes questions about information needs, uses of PAC, and barriers for use, among other topics. In the Colombia study, we added questions about the user's perceived benefits of using ICT and PAC, a dimension that was not addressed in the global study. Questionnaires were pre-tested among a small number of PAC users in Cali, Colombia, and adjusted to improve clarity, usability, and internal and external validity.

The survey included users of three types of venues providing public access to ICT in cities and municipalities (libraries, telecenters, and cybercafés), with attention given to gender equality, age variation (including older adults), and ethnic diversity, including indigenous and African populations where relevant. The surveys were conducted by local survey administrators present in each location during various times of day and days of the week to minimize variations due to time. Enumerators stopped users as they exited the venue and asked for their voluntary participation. Minors were not surveyed, due to Institutional Review Board (IRB) restrictions regarding parental consent and the practical difficulties of obtaining one in the conditions in which the survey was administered. The survey administrators recorded the answers with pencil and paper. About half the answers to an open question included in the survey were audio recorded and transcribed, while the other half was noted on paper by the enumerators. Survey respondents were not compensated for their participation.

Expert interviews (10): Six national experts were selected by the research team based on well-established reputation in the field, including representatives working in academia,

government or non-governmental organizations. Expertise was based on publications, personal recognition, and participation in international, national, and local networks. For the most part, these experts were based in the large cities (Bogotá, Medellín, and Cali). Four additional regional experts were selected by the research team, drawing from opinion leaders in activities related to community communication in each region. These regional experts were selected based on their knowledge of the region and their participation and knowledge of cultural dynamics. They also acted as liaisons that helped to determine other forms of data collection, such as helping to select respondents for operator surveys and participants for focus groups, as described below. Interviews were audio recorded and transcribed. The interview guides for the open-ended, conversational interviews were based on those used in the Global Landscape study mentioned before, adding questions related to benefits of PAC and ICT, which were not covered in that study.

Interviews with operators (100): We conducted 20 of these structured interviews in each of the 5 regions of the country, and maintained a proportion between capital cities and municipalities (70–30% for Caribbean and Santanderes, 80–30% for the rest, to account for variations in population distribution in each region), as well as a balance between the three types of venues (libraries, telecenters, and cybercafés). We sought gender balance, representation of different ages and ethnicities (indigenous peoples and Afro-Colombians, in the regions where these two groups have important presence). The selection of operators was done following recommendations by the regional experts, based on their knowledge of the distribution of sites, types of users and uses, with the goal of including a variety of experiences, sizes, sites, and populations served. The structured interview guides were based on those used in the Global Landscape study mentioned before, adding questions related to benefits of PAC and ICT, which were not covered in that study.

Semi-structured interview (life story) (10): We conducted in-depth, personal life history interviews with 10 people selected by human interest or their relevant personal experiences with use of ICT through public access venues. These interviews were about personal stories judged by the researchers to be relevant or important because of the transformation, motivation, or vision of ICT for development that they revealed. The cases for these interviews were identified during the surveys or interviews of users, operators, and experts. Interviews were audio recorded and transcribed. The guide for the semi-structured interviews was developed for this study based on the researchers' past experience, as this activity was not included in the earlier study that informs this research. The interview guide was tested with one respondent before it was finalized and used for the 10 in-depth interviews.

Focus group workshops (information ecosystem) (6): A total of six focus-group workshops were conducted in each of the regions of the country, plus one in the nation's capital. Each workshop included approximately 12 participants, including users, operators, and other stakeholders in the field of public access to ICT (e.g. school teachers, ICT trainers, and leaders of local community organization), identified and invited in consultation with the regional experts. We sought equitable gender representation among participants, as well as the participation of people of different ages, education levels, socio-economic status, persons with disabilities, and ethnic minorities if appropriate to the region. The workshop guides were developed for this research by the researchers based on their past research experience, drawing from participatory research methods and group facilitation. Each workshop resulted in one detailed report prepared by the research team, as well as a brochure that summarized the main topics discussed, which was shared with participants and their organizations as part of thanking them for their participation. Participants were not compensated for their participation in the focus-group workshop, but they were invited to lunch or dinner after the activity. The main purpose of these workshops was to explore the ecosystem of users of ICT in public access venues in the community. At the

same time, we sought to understand the interactions between different types of public access venues, their relation to mobile phones and community radio, and some of the local perspectives on their benefits for community development.

3.1   *Data analysis*

Quantitative data were analyzed using SPSS. Detailed field notes were prepared after each focus-group workshop, interviews were transcribed and personal identifiable information removed, and all qualitative data were coded using Atlas TI. Initial coding for Atlas TI was done using 15 categories based on the access, capacity and environment framework, a framework developed as part of a study of public access computing in 25 developing countries (Gomez, 2010). Coding was done by four research assistants at Icesi University, with partial double coding and spot checks to assess inter-coder reliability. Research teams at Icesi University and University of Washington conducted preliminary analysis of both qualitative and quantitative data, resulting in detailed narrative reports by type of venue (library, telecenter, and cybercafé), by region (five regions in the country), by source (survey, expert interviews, and operator interviews), and by theme (most notably, perceived impacts of ICT). The research team at University of Washington conducted all the additional analyses for this research.

In addition to the detailed narrative reports, the interview transcripts, and the Atlas TI reports for each coded category, to inform the findings presented here we also analyzed the answers to an open-ended question in the survey. Answers to the question "How has the use of ICT changed your life?" were transcribed and analyzed using an emergent pattern coding scheme (Miles & Huberman, 1994) that resulted in 12 clusters of non-exclusive themes. The analysis was done by the research team in an iterative process in which a small group of the statements collected was used to generate initial pattern codes. These were then tried out with additional statements, adjusting and revising the pattern codes for fit and clarity, in an iterative process over several days, until a final grouping of 12 pattern themes or clusters emerged. When there were disagreements among team members there would be a discussion until agreement was reached. The majority of statements fit well under one or two clusters, and only in rare occasions the research team felt the urge to have a statement grouped under more than three clusters. The 12 clusters were subsequently grouped under 4 headings, to simplify the presentation of findings. Finally, the larger qualitative and quantitative data-sets (as described above) were queried again for corroborating or conflicting evidence in relation to the 12 themes that emerged from the cluster analysis, in order to construct the narrative presented in the next section.

4.   **Findings**

Quantitative data collected by the national survey show adults who attend these public access venues are generally men and women between 18 and 35 years of age (77%), and their occupation is mainly student (42%) (note that minors were not included in this study). They frequently go to these venues to use email (42%), browse the web (20%), to use social networks (19%), and to use blogs (14%). Users indicated they mostly look for information related to education (30%), for personal issues (25%), for entertainment (19%), for news (8%), and only a small proportion (6%) to look for jobs.

Public access venues are used primarily to meet personal and social needs such as communicating with friends and family, entertainment, doing homework, and developing computer skills. Education is considered to be a key determinant of public access ICT use, and there are signs that the use of public access venues for computer skills development is linked to

users' perception that exposure to computers and the Internet will enhance their current and/or future employability. We found that users are inclined toward personal and social uses of public access venues, although economic and political uses also occur.

4.1   *Perceived benefits of PAC*

The national survey included an open-ended question about how the use of PAC has changed users' lives. The answers to this question were grouped into four broad categories (even though they are non-exclusive, as described above, we use percentages for the sake of simplicity): more information (41%), relationships (25%), learning (19%), and transactions (13%). All of these can have potential negative consequences as well, which were identified by a small proportion of respondents (3%). Negative consequences are mostly related to increased dependency or addiction, less time available, more superficial interactions or knowledge, more expense (new costs), problems with viruses or hackers, and lack of privacy. Although the largest category is the self-evident *more information* (42%), it refers to *more information about something*, namely about relationships or learning, or transactions. In this article, we analyze the category relationships in detail; other categories are analyzed elsewhere (Gomez, 2012b).

In the *relationships* category, there are three different emerging clusters or themes that give the broad category more texture and detail:

(1) *Friends and family* (16%): PAC is perceived to enable closer contact and communication with friends and family, and to shorten distances with those who are away. For many respondents, this is not limited to maintaining existing friends, but offers opportunities to meet new people and make new friends as well (Baron & Gomez, 2012a).
(2) *Connectedness* (5%): PAC gives users a stronger sense of belonging, of being part of a larger world; it offers users better connections and relationship with clients, friends, and organizations; new opportunities for advancement, teamwork, and collaboration; and an increased sense of ownership of their destiny and their future. There is an important nuance in the way some respondents describe a transformation in the sense of connection and relationship afforded by use of ICT that goes beyond the mere cultivation of friendship: respondents express an added quality of depth and connection, and a stronger sense of belonging to a larger, broader world (Baron & Gomez, 2012b)
(3) *Entertainment* (3%): Only a small proportion of users emphasize how PAC has opened new avenues for entertainment, spending time with friends mostly sharing games and music.

Figure 1 summarizes the distribution of responses about the perceived benefits of PAC, with details for the themes under the "relationships" category. Even though it is statistically inaccurate, as the response categories are non-exclusive, the graph and percentages are useful for simplicity of understanding.

Being in contact with family and friends, building new relationships, and connecting with other people, places, and cultures represent the most important benefits that ICT have brought to users in their local contexts. The chance to learn new things, be informed, and open new worlds is another valuable benefit our qualitative research process uncovered. Within the qualitative data interesting relationships between teamwork practices and job creation by using ICT also appeared.

Many respondents talked about the opportunities ICT have offered them to communicate with people who are geographically distant (nationally and internationally). Additionally, they mentioned the opportunities ICT give them to share daily activities with others, underlining

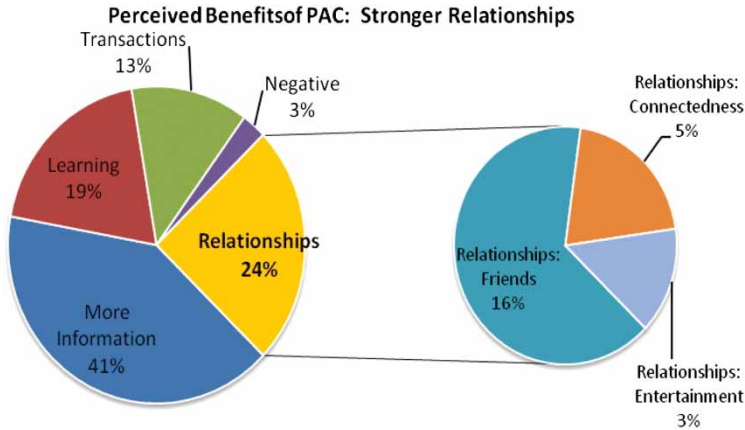**Perceived Benefits of PAC: Stronger Relationships**

Figure 1. Perceived benefits of PAC: stronger relationships.

the sense of closeness and immediacy these communications have. About 35% of the responses classified in the group of being in contact with friends and families also mentioned the possibility they have gained of making new contacts and friends through ICT as a way also to know new places, cultures, and regions. A few of them mentioned they used ICT to be in touch with people from the same city, town, or neighborhood.

The contacts they keep and build with access to ICT imply mixed versions of personal, work, educational, and academic relations. Responses also emphasized the speed and ease with which they are able to connect, and they mention how those relationships have opened new opportunities for learning, informing, and shopping.

When respondents talked about searching for both people and information, their answers have a general tone of success, satisfaction at the achievement of a task, and low levels of frustration. Statements such as "every time I look for something I find it" are very common. Some of them compare this new state of being with their earlier condition of disinformation and isolation. In general, they underlined how ICT have changed their lives, making daily life easier, opening alternatives to know (other knowledge, people, and cultures), bringing new entertainment options and introducing them to other tools to create and imagine new possibilities. In the words of one excited respondent, "I can reach the world with the tip of my fingers."

4.2   *Easy communication with friends and family*

There is a strong sense among users that ICT have enabled a great ease in the communication with friends and families. The adjective easy is generally associated with the possibility of communicating "when I want and from where I want." Additionally, it is perceived as an exponential possibility that increases as more people are connected: several respondents considered that "many people in the world are already interconnected." The idea of ease is also associated with immediateness, speed, and the accessibility to communication, which is now seen as more fun, not boring, which generates feelings of pleasure, happiness, and well-being.

Testimonials about the speed of information and communication emphasize speed as an attribute of contemporary society, which makes communication through ICT more practical, cheaper, and easier to store and process. The result, according to the users, is saving time, being more current or up-to-date, and bringing things that are far away closer. The speed is also related to people's *use of time*, not only in relation to the organization of work, schedules,

and time management, but also in relation to the handling of daily activities such as birthdays, appointments, and communication with friends and family (saying hello, sending a birthday greeting card, and sharing of music and pictures). However, they also perceived the fact that a vast amount of the time and resources which are saved seem to be "reinvested" in more use of ICT, which for a small number of respondents starts to feel like increased dependency or addiction.

The purpose of using the Internet to communicate with friends seems to gravitate around three aspects: maintain relations with friends and family, stay in touch with them in daily life or for special occasions, and stay in regular contact even when not physically present. However, the two points stressed in the answers about communications with friends on the Internet are that they now have more friends than before and they have expanded their circle of acquaintances, and that Internet offers the opportunity to meet and make more friends.

> Well, one of the things that has benefited me after using ICT is that on the one hand I have been able to extend my circle of friends. Well, I have been able to meet people through the Internet.

Most answers indicate that their use of the Internet fosters the possibility of communicating, and that this technology has generated more and better communications that allow users to stay in touch and stay up to date. A significant group of answers also stated that communication is mainly to keep each other company.

> Before, it was hard to be in contact with my family and friends. Now, with COP$2000 [about $1USD] I talk long enough and I see them as if they were here. The Internet is the best invention.

We heard from a woman who suffers from a disability, a rare type of muscular atrophy. It represents an interesting example of how the Internet has made it possible to know about people from other places and their life experiences. She participates in discussion forums, donation campaigns, and consults sites that disseminate research results and innovations in treatments. Through these she not only has learned of medicines tested in other countries (and that have not arrived in the country but that she has been able to use), but also has been able to build a mutual support network that has helped her to improve her quality of life and has improved her self-esteem.

There are even various testimonies that demonstrate a conscious effort by the interviewees to not allow Internet communications to displace physical encounters and face-to-face relations, as evidence the following testimony:

> One of the things I have tried not to do, because I have noticed that ICTs have made me become somewhat introverted, is to get wrapped up in the bond that one creates with persons in a virtual manner and to focus only on that. It is something I have tried not to do; not to let it drag me along. And it has happened to me to a certain degree. For example, I have a friend that lives just 2 blocks away from my home so I recently told her that I didńt want to relate to her by Internet and she asked me why. So I told her wére only 2 blocks away, visit me, let see each other there, let's see each other face to face, there in the neighborhood.

This kind of perceptions and resistances seem to express the same concerns that researchers and scholars have had since long time ago around how technological innovation would affect community, in particular if the use of computer-mediated communication can affect local interactions and participation in public activities. The Netville study of Keith Hampton and Barry Wellman offered a good insight in this respect (Hampton & Wellman, 1999). They conclude that community does not have to be local; it is the sociable and supportive aspect of interaction that defines community and not the local space in which interaction may take place. It must be recognized that relationships extend beyond the neighborhood and include a personal network of friends, relatives, and coworkers that can extend across the city and around the world. Their analysis also suggests that the Internet supports a variety of social ties, strong and weak,

instrumental, emotional, social, and affiliative. Relationships are rarely maintained through computer-mediated communication alone, but are sustained through a combination of on- and off-line interactions.

Communications with family through Internet seem to point to slightly different purposes than those expressed about friends, described earlier. For family, even though users emphasize frequency and permanence of the relationship, the answers point to the idea of maintaining closeness with family members who are far away. Thus, some patterns, some "rituals" appeared more clearly in these testimonies and they seem to contribute to a feeling of having others near: sharing certain spaces and celebrations, getting together on set days and times.

> My family lives in a town. They select a date, we meet each other, we see each other and after we go to bed and we spend less money.

Although there is little *gender* variation in the use of ICT to communicate with friends and family, more women spoke of using social network sites to maintain, search for and create relations. Additionally, their testimonies demonstrate in a clearer manner the importance that these sites have for them in order to build and maintain closeness with their friends. They also appear to be more interested in looking at and exchanging photos. Furthermore, the persons who identified themselves as employees and independent workers made greater emphasis on communication with relatives and friends that are far away or in a foreign country.

Women's answers referred more to communication with family and men's again emphasized the issue of costs (how cheap, economic it is now to communicate with relatives). Additionally, a very interesting number of testimonies (18, 16 of which came from women) made reference to the way the Internet has allowed them to more easily and effectively help their children with school work, the homework, and research that they are assigned. This would be a very interesting issue to probe deeper into, to understand this type of interactions between parents and children and the consequences that this mediation has for learning processes of children as well as parents.

Two subtle differences between men and women's answers were identified when they spoke about changes in communication on the Internet. Though men and women did not display a major concern as to the cost of Internet communications, an important percentage of the men's answers emphasized the savings in communication costs. Furthermore, men's answers paid more attention to the results that these new possibilities for communication have produced in quality of life, progress, and in general improvements in individual and collective conditions. Women's answers were more focused on the importance of the act of communication. Various personas that identified themselves as unemployed emphasized the impact the Internet has had by favoring the expansion of their personal and work networks and in education and knowledge processes. For example, one states that,

> It helps to have contact with my friends, family; I try to use the network more to communicate with them due to costs, to save on costs.

4.3 *Sense of connectedness*

The perceived benefit we called "connectedness," refers to a heightened sense of belonging to a broader, larger world, with more opportunities for interaction and understanding of other realities and other practices. Connectedness has to do with: (1) users' greater awareness of what is going on in other places, nationally or internationally; (2) the ability to communicate with people in other places (other regions or other countries); and (3) opportunities for learning new things, being informed and learning about new things in the world. This sense of connectedness is strengthened by the speed and ease with which people can now access multiple sources

of information, and it results in a sense of empowerment and confidence-building on the part of users of ICT. A small proportion of respondents also highlight work-related benefits of this sense of connectedness, either in maintaining relations with clients, finding new business opportunities, or gathering ideas for new products and services to offer.

We found strong evidence that PAC contributes to relationship-building and an increased sense of belonging to local and global communities, in new ways that were not possible or feasible before. In many cases, it has also brought about a more proactive approach to life, and in some cases a critical understanding of the sociopolitical environment. For example, the importance of friends and family networks as sources of mutual information, closeness, and support. In the same way, the resources in time, effort, and money that people are investing to maintain and improve their relationships is noteworthy. Upon further analysis of the responses grouped under "Relationships" and as a result of a more meticulous analysis of the qualitative data we collected, we found five common threads. These threads offer a finer-grained understanding of users' perceptions of how computers and the Internet have changed their lives:

(a) *Learning new things through relationships*: Respondents pointed out that through ICT they have gained "more exposure to the world," to go "further in life" with more knowledge to help them move in different social contexts, with increased well-being.

> [ICT] have helped me intellectually: I know the governmental plans and health information, and I feel better to engage in a conversation, because I deal with lot of information.

They also report they have acquired this new knowledge with faster, more current, and diverse information. A frequently expressed idea in the users' testimonies is that many barriers have been broken and there is a vast supply of information to satisfy needs at any moment. In the words of one respondent,

> technology has changed my life because it has changed my vision of life. Before, I thought that I only had to work in the fields since I am from the country. I thought that I only had to harvest potatoes, which was my life; that I was going to die like that. But now I see things in another way.

(b) *Relationships with people in other places:* This set of answers emphasizes the new possibility "of communicating with the world," with people from other countries and other places in a more efficient, direct, and fun manner. It also refers to the way in which they have created and strengthened family relationships, and relationships with new and old friends to stay in touch and be connected.

> The world spins around the Internet and now I communicate with people that I haven't seen in a long time. Now it's more convenient, you stay up-to-date and you create global networks.

Above all, what is highlighted is the possibility of "talking" and the sense of nearness and companionship that they build with persons far away, as well as the possibility of mutually sharing their daily life.

(c) *Awareness of other places and a larger world*: Respondents express that knowledge of computer use and access to the Internet has permitted them to notice that "there are other things in the world," that these technologies let them know it better, that is, they open doors to other cultures, other cultural expressions, and events which are important and generate changes in their own societies. Furthermore, ICT have allowed them to know about matters which have a global impact (the situation with the environment or arms race), and other topics of personal interest, all with variety and without limit.

(d) *Speed/ease of relationships:* Interviewees emphasize speed, ease, and availability of information access. "I don't understand how people got by before ... " Respondents appreciate the ability to consume news from all over the world, and the possibility of *attending*, online, any event. They stress how many barriers have been broken and how

the ease to be anywhere in the world in an instant has been opened up to them. Time savings and instantaneous access to information is highly appreciated in the answers. They also mention the importance of having access to vital and urgent information and data without having to rely on other options which they consider to be more complicated such as researching in books. Several of those interviewed expressed the belief that those who do not access Internet are out of place or out of touch since "everyone communicates through ICT and technologies . . ."

(e) Job-related relationships: Respondents indicate how ICT represent not only a work tool, but also new opportunities to relate to colleagues and clients, and to do business. They also perceive them as resources to improve their information, knowledge, and performance related to the labor setting. ICT help them relate to peers and people from their profession, and of course to look for employment.

> Due to work I must interact and communicate via Internet with several employees. They and I send the information that we need through this way. Additionally, I have more contact with clients and I can verify my work constantly.

The biggest obstacle perceived by local actors for the use of ICT by community organizations is fear of these technologies, and lack of knowledge about them; that is why they see limited possibilities for ICT in local development. According to the respondents, this fear was expressed most strongly in the elderly and those living in rural areas.

4.4   *Entertainment*

Entertainment is the least frequently mentioned aspect mentioned by respondents, grouped under the broad category of relationships. Relatively few respondents referred explicitly to entertainment possibilities using the Internet, and most were given by male students. However, these offer clues that allow the identification of personal interactions through play. For example, most of them emphasized the variety of entertainment opportunities and alternatives offered by the Internet, mostly related to sharing music and online or video gaming. In relation to music, several activities were mentioned such as exchanging songs, watching music videos together, downloading and saving songs, and learning about and sharing information about concerts and other entertainment events. Interestingly, allusions to games on the Internet emphasized how these have replaced other leisure activities such as playing a sport or watching television. Talking or online chatting on the web, or interacting by way of social network sites were also pointed out as part of entertainment on the Internet.

4.5   *Relationships: the weak power of social networks*

> Obviously communication is through Facebook.

Most respondents who mentioned relationships referred to as social networks, an overarching theme that permeates the whole discussion of relationships online; they speak of them like new alternatives to create, extend, and strengthen relations with friends, family, work, or for entertainment. Though a considerable part of the answers associate social networks to social network sites such as Facebook, the comments are concentrated on social and not technical aspects. Therefore, a significant percentage of the answers talked of the new possibilities to communicate which these offer and a lower percentage spoke of the opportunities to access or search for information through them.

Participants of our research project frequently report an increase in quantity of contacts and relationships, but not in the depth of these contacts. Without this implying a value judgment,

they say that it is a kind of *touch or a tag*, a less profound type of relationships, unless they had been developed before or outside of ICT use. They referred to the construction of a different type of closeness and affection (virtual); in some ways "more frivolous and impersonal" relationships. These relationships not only allow communication but also help with access to groups with which something is shared and mutual cooperation (to be a part of communities with common interests). A few mentioned having made a break with more local and closer relationships, and certain shyness and self-absorption, arising from their use of ICT.

When they referred to sociability issues that have to do with deepening and building relationships on the net, most spoke of a greater sense of freedom and confidence. There, they leave behind shyness and gain confidence in interactions with others, not only because the relationship with others is mediated by email, chat, audio, or the camera, but also because they embody and construct different identities (which at no time do they relate to a distortion or misrepresentation of their identity). A few mentioned that they are very cautious and controlling in the use of Internet, email, and social networks because they want to preserve and protect not only privacy, but also anonymity. Additionally, users claim that, contrary to what many people believe, their relationships and tasks over the Internet have a strong organization, rules, and controls on the web.

Citing Granovetter, Christakis and Fowler (2009) reflect on the *strength of weak ties:* strong ties may bind individuals together into groups, but weak ties bind together into the larger society and are crucial for the spread of information. This notion is very pertinent here because it shows how weaker connections such as the "frivolous and impersonal" relations of online social networking frequently act as bridges from one group to another and can play a more important role than is initially apparent. In this particular situation of PAC users, the weak ties they are building with friends and new acquaintances are seen as new opportunities for change and ways to improve their life. And as Christakis and Fowler suggest, there is a trade-off between building stable relationships with a certain group of partners and being willing to leave those relationships when changes in certain contexts and environments deserve them.

Several testimonies made a direct reference to *Facebook*, and they tend to use universal quantifiers such as *everything* and *many*: "I can find *everything*," "I do *everything*," "We *all* speak," "*many* friends," "*much* information," "*many* photos," and even "*many* enemies from life there." These testimonies are talking about a perception of totality toward the social networking platform, and they are conveying an idea of convergence, not only due to immediateness but also because of communication, information, and entertainment. Very few answers referred to deeper relationships of love or intimacy. Only few speak of how they found girlfriends, boyfriends, or husbands on the web. The power of the relationships and social networking online is the power of weak ties.

These findings highlight users' perceptions of new possibilities opened through the use of PAC, perceptions which are very positive, almost euphoric about personal and collective transformation. Despite the generally positive bias of the results, there are indications that users are aware of potentially negative effects (for example, loss of privacy, addiction, virus, and hacking). The positive bias of the respondents may be a result of their trying to please the researchers (despite the seemingly neutral question "how has ICT changed your life"). More research of the negative implications of ICT use in PAC venues is needed to make this picture complete.

5. Discussion

After reviewing the findings in detail, we start the discussion by highlighting the common threads of the narratives presented by users of PAC in Colombia. After this, we go back to the concepts of empowerment and social capital. We assess how the users' experience of

PAC reflects some of the important elements that scholars have analyzed in relation to empowerment and social capital, and the underpinnings of social network theory and its applicability to understand the experience of PAC users. Finally, we discuss how PAC helps users give meaning to their information and communication practices, both online and off-line.

The information collected allowed us to construct a form of narrative as a result of certain patterns and premises we identified in respondents' speech and in our experiences in the field. This narrative proposes a sequence that does not necessarily correspond with the practice of any particular individual, but offers a composite of PAC users' experiences and practices. The individual testimonies, practices, and meanings of people are richer, more diverse, and complex than this narrative. However, for analytical purposes, this method helps us understand the important outcomes of accessing and using PAC. We did this exercise to have a better picture about what was going on from the users' perspective.

Acknowledging this positive bias, these are five characteristics of the narrative we constructed to describe the experiences of using PAC in the country:

(1) The respondents emphasized how they were able to use ICT in ways that are meaningful to them, generally linked with personal interest, education, or job requirements.
(2) Their access to ICT is considered to offer a fantastic set of tools that have opened windows into larger, faster, and more diverse information and communication methods.
(3) Compared with the past, these new possibilities have extended and broadened their worlds. They have created opportunities for being connected with new places, cultures, and knowledge. And now they can access multiple simultaneous sources of information and communication in less time and with less effort. Of course, the new opportunities opened up also imply risks and losses, but these tend to be fewer and smaller compared with new benefits gained.
(4) The new access to information and communication opportunities is perceived to be a source of personal growth and success, with different levels of social integration into a larger, more "modern" world. These new benefits make them different kinds of people, different kinds of workers, and different kinds of citizens.
(5) They express self-identification as individuals with specific new abilities that have allowed them to be more educated (with new knowledge), better informed (from a cultural and news perspective), and technically proficient with previously unknown tools. They also identify themselves as members of a larger community, as more international citizens.

5.1   *PAC, empowerment and social capital*

As discussed earlier, empowerment is seen as a process (rather than an event) by which individuals, organizations, and communities gain mastery over their own social and economic conditions, over political processes that affect them, and over their own stories (Melkote & Steeves, 2001). Social capital, on the other hand, is the *goodwill* available to individuals or groups, and it is rooted in the structure and content of peoples' relations; social capital builds on information, influence (power), and solidarity relationships (Adler & Kwon, 2002).

PAC users experience a strong sense of empowerment through new abilities acquired, new opportunities encountered, and new experiences lived, with a strong sense of the power of transformation those experiences have had for them in both their public and private lives. We found strong evidence that PAC contributes to relationship-building and an increased sense of belonging to local and global communities, in new ways that were not possible or feasible before.

For authors such as Doctor (1991) and Chamberlin (1997), assertiveness, self-esteem, and access to information are all key elements of empowerment. Data collected show that networks

have allowed many respondents to know about other information sources, educational programs, or technological tools. Within the networking process they also recognize good opportunities for cooperative activities and teamwork. Some of those possibilities and lessons learned, from Coleman's perspective, could represent "collective goods" because they are not the private property of those who benefit from them but the collective result of social relations.

Social capital is considered to have a great effect on social identity and representation, both of which facilitate development. The task of building or enhancing local social capital is regarded as a key dimension of a wide range of development initiatives in disadvantaged settings (Campbell & Jovchelovitch, 2000). In our findings, PAC users consistently express an experience of gaining control in their own lives in the context of interacting with others. This perception can be related to the notions of self-esteem and self-efficacy.

Despite the capabilities and opportunities PAC seem to have offered the participants in our research; it is important to keep in mind that social capital is not just a bottom-up process disconnected from power and authority structures in society. As Adler and Kwon (2002) point out, many writers have criticized Putnam and other analysts for an excessively *bottom-up* view of social capital, instead stressing the *top-down* role of such formal institutions as government structure and legal rules in facilitating or impeding the emergence and maintenance of social capital and trust in civil society.

In regard to empowerment, Zimmerman suggests that it can be of different types: intrapersonal, interactional, and behavioral (Zimmerman, 1995). The empowerment experience of PAC users appears to be more of the intrapersonal and behavioral varieties rather than interactional ones. In other words, it is more related with personal interactions than with organizational and institutional ones. We found very little evidence of processes of empowering communities to participate in the construction/consolidation of larger social arenas and public spheres where representations and resources are disputed. Furthermore, there are few indications of process to exert pressure on established channels of decision-making and institutional power to respond to their needs, which are also important elements of (interactional) empowerment (Campbell & Jovchelovitch, 2000).

This study offers evidence of how PAC use helps to strengthen individual capabilities that contribute to empowerment, such as self-confidence, self-efficacy, autonomy, and digital literacy. PAC also helps strengthen primary, strong ties between friends, families, and groups who share common interests, as well as weak ties with a broader sector of acquaintances or contacts, near and far. However, we find no evidence of the contribution of ICT to strengthen processes of social, political, or cultural organization. There is little indication of the relations that people build between information resources, communication practices, and other political or cultural dimensions of their social life. In sum, PAC use does not necessarily contribute to other important dimensions that can help turn empowerment into social action, social participation, and civic engagement to transform decision-making and existing relations of institutional power.

Nonetheless, we found little evidence to support the claim that PAC helps strengthen civic engagement. The concepts of citizens' participation, empowerment, and social capital have been extremely useful for this analysis. They made us think about *the importance of the contexts and structures* where these perceptions have been produced: the long history of violence and destruction of social fabric, the historical lack of access to technologies and information that prevented connection and interaction with other parts of the country. Those concepts also made us think about *the characteristics of the people* who access ICT through public venues: their levels of income and education, their access to information and cultural goods and services, their social links, the relations they establish with other people, organizations, and networks. These are issues we should keep in mind for further research and analysis.

5.2   *PAC and social networks*

Based on the findings we presented, it is clear that the majority of PAC users recognize that ICT have strongly influenced the structure and size of their social networks and their visibility and position in those networks. This seems to have deeply changed not only their interactions with friends, family, and acquaintances but also their individual capabilities and their power relations in local and external levels.

PAC users experience a strong sense of empowerment by acquiring new abilities, encountering new opportunities, and living new experiences; they have a profound awareness of the power of transformation those experiences have had in both their public and private lives. In our findings, PAC users consistently communicate the experience of gaining control of their own lives in the context of interacting with others. Additionally, these results are extremely important for the people process of building and rebuilding their own identities, strengthening their social ties in their own communities, and engaging with other communities.

It is also important to consider that possession or access to technology, in fact, represents the construction of a place, of a voice, of a certain identity for communications and for other social relations. Of course, they also define a status or a position within a group and thus they are part of power relations inside of a group, an organization or a community.

In Colombia, as surely occurs in other places in the world, having a computer or mobile telephone (or a certain type of computer or mobile phone) is a symbol, a public expression of economic, social, and cultural status. Moreover, the knowledge or ability to use these or other technological artifacts contributes to defining a social place that can be used to produce both relations of inequality and injustice, and for the development of individual and collective empowerment. This is the transformation of networks and position that access and management of ICT has encouraged, and they could help to maintain the *status quo* (traditional institutions, norms, and chains of power) but also to defeat it.

The majority of stories and testimonies show that the acquisition of abilities and capabilities to access ICT has provided users with the possibility of building different social positions in their networks, sometimes indirectly contributing to the opening of new possibilities. These new networks (of friends, family, and acquaintances) represent good opportunities to transform their lives. For example, the users' interactions with friends and families not only strengthen the sense of connectedness, allowing them to be in contact with other cultures, open their minds, or extend their knowledge, but also provide them with more possibilities to improve their quality of life, that is, to go outside of their town or country, find a partner or love, get a new job, or acquire a new standing in their local setting. These results appear to confirm important notions of network theory, as posited by Christakis and Fowler (2009):

> More connections within groups (in what is known as a concentrated network) can reinforce a behavior in the groups, but more connections between groups (in what is known as an integrated network) can open up a group to new behaviors and to behavioral change – for better or for worse. (p. 117)

The stories and testimonials we collected clearly allow a vision of how possession of technological artifacts and their use provide great power to the persons that can use them, especially in marginalized and vulnerable communities and groups. These persons, in using ICT in public access places, can become nodes and referents that acquire centrality by becoming "obligatory passage points."[3] Thus, they acquire a great capacity to influence others and due to this they participate in the dispute for and distribution of power with other persons and institutions such as the family, church, political organizations, and state institutions (mainly in local contexts).

This can be seen in the individual stories on how ICT have changed the life of users in a positive way and in the very location of PAC sites. Most of them are located around public squares

and main malls or near schools and universities, sharing strategic spaces with government institutions, churches, and educational centers. Although they are not conceived (named) as such and though they do not take advantage of this, these access centers represent nodes, *public spaces* through which a considerable quantity and variety of personal, economic, political, and cultural relations circulate.

Furthermore, public access venues seem to be important spaces for social interaction (mainly for young people): places to hang out and meet friends for enjoyment and socializing. This is particularly important to enrich and reactivate forms of social life and interaction among underserved communities. The power gained by many of these new nodes can also be observed in the variety of information and transactions that many operators of public access venues manage for their users and clients. We heard several testimonies which show how some people (mainly from vulnerable and marginalized communities) delegate personal and private activities to the public access operators such as doing homework and transactions related to taxes, social security payments, background checks, and identification cards.

5.3   *Communication and information practices*

The comparisons made by the respondents between past and present highlighted the difficulties and limitations they had to communicate and be well informed. It is clear that they think, they feel their communication, and information practices have been transformed in a good way. The respondents emphasized how ICT have extended their possibilities to communicate and be informed without time restrictions and without control or influences from third parties. Additionally, these new conditions have allowed them to take more rapid and accurate actions and decisions in their daily lives. They have also transformed the use, distribution, and measurement of time with a substantial impact in users' daily lives.

The results also show how access to ICT is producing more cross-media communication and use of information (in order to contrast them) as sources for relationships. Corroborating the ideas of Walther et al. (2011), we could observe that new interfaces bring into proximity or simultaneity information from several types of sources such as institutional, interpersonal, and peer. However, the relevance and credibility of sources was more concentrated in interpersonal and peer than in institutional sources. Furthermore, users' relationships and interactions with their online and off-line networks are motivating media and Internet information seeking and affecting interpretations derived from them.

Although the testimonies and answers insist on establishing differences between online and off-line worlds and between "real and virtual reality," the communication and information practices, surveys, and narrations describe a variety of intersections, porous frontiers, and flows between these social spaces. These new practices are seen by respondents as novel ways to gain information autonomy and break their dependency on traditional sources such as mass media, teachers, priests, and local opinion leaders. These results also seem to confirm the perspective of some scholars who celebrate the plurality of information, ranging from experts to non-expert knowledge, as part of the academic discussions of the diversity and plurality of the information online, as described by Mager (2009).

6.   Conclusions

We are still amazed by the positive and enthusiastic perspectives participants expressed toward ICT and its impact on daily life. Their reactions are probably a result of assumptions about ICT that the state and media (as well as social organizations and scholars) have helped to publicize. This "honeymoon" phase has been brought about by feelings of novelty or delight when

discovering and using ICT. However, it is also probable that these positive reactions are a result of the historical lack of access to both technologies and information by many regions and social sectors of Colombian society, or an expression of surprise given the historical deficiencies of the state and market in providing basic public services in this Latin American country (Baron & Valdes, 2012). This could also be a result of the difficulties many people have experienced accessing free and open sources of information and communication as a product of the established educational system, cultural traditions, and nation-state characteristics.

The findings lead us to conclude that, for the most part, there is little or no connection between the new information and communication capabilities, the opportunities people have gained through PAC and community development needs. These results could confirm or reinforce the hypothesis (as well as the fears and distrust) of several practitioners and scholars who have pointed out that ICT are mainly contributing to less communication, more isolation and individualism, less public and political engagement, and a process of de-democratization (Morozov, 2011, pp. 59, 70).

However, while the introduction of public access to ICT may not have directly contributed to community development, indirect contributions include stronger self-esteem, a sense of belonging, and connectedness with others in a larger world context have emerged. Personal and social needs such as communicating with friends and family, being in contact with other places and other cultures, or even reaching out to new possibilities of entertainment, could represent intangible results of ICT programs that contribute to strengthening empowerment, building social capital, and supporting the social networks and information and communication practices of users. As we have discussed, these are intangible outcomes that scholars and practitioners need to better understand and analyze in order to grasp some of the less obvious, yet more potentially pervasive and far-reaching, contributions of ICT to community development.

It is possible that the seeds of much of the ICT-enabled community empowerment and social capital were present and we did not see them in spite of the variety of mechanisms we used to gather our data. It is possible that the use of computers and the Internet for social change is not happening in public spaces, but rather in the private spaces of organizations, schools, homes, and workplaces. It is possible that the scars of exclusion and violence are deeper, and that the public space created by libraries, telecenters, and cybercafés is still too young to handle certain ways of community development and social well-being. It is possible we are missing some important pieces that can provide other evidence to better understand contemporary relations between individual processes and behaviors, and collective and social dynamics.

Contemporary instances of synergy between ICT, social movements, and different ways of development abound. Recent examples include the Arab Spring uprisings in Egypt, Tunis, Libya, and other Middle Eastern countries during 2011; or the estimated 5 million people mobilization against kidnapping in Colombia, promoted by young users of Facebook in February 2008.[4] These local strategies represent unexpected uses of technological platforms for social networking which people in local context are using for *collective* and *public* purposes. They are not only trying to build or rebuild external links or primary ties – they are also looking to construct local information bases and interactions for local well-being.

In a developing country like Colombia, with strong conservative social and cultural traditions and profound political and communication problems that historically resort to violence, public access to ICT seems to represent an important opportunity not only to rebuild social ties but also to extend social networks and create new relationships. These new possibilities are providing PAC users with an open platform to transform their lives and to look after their personal well-being. These impacts should be seen as an important contribution of ICT to community development.

Following the lessons learned from social network analysis and personal relationship studies, further research in the PAC field should include a close look at the users' networks (size,

structures, and density), their ties (strength), the interaction flows (intensity, closeness, and inter-dependence), and the contents of their communication and information exchanges. This could also include an observation of the relations between online and off-line networks (as an analytical division) to understand the entire set of social ties that make up the multiple communities in which people are involved. This deep look at PAC user social networks could also involve an observation of the forms by which they are interacting with government and state institutions and with social organizations and movements. Thus, we will be able to better understand the interactions between individuals and other collective actions and institutions.

In this study, when PAC users approached ICT, they were looking for something new, for something different. Users were looking not only for new possibilities of communication and information; but they were also looking for new forms of relationships which open their opportunities and capabilities for a better life. In the end, the majority of PAC users consulted were looking for ways to improve their well-being (more individually than collective). And the new characteristics of their networks, empowered by the use of ICT in PAC venues, seem to be providing what they were looking for.

Given the results of our study, it is clear that the social network, empowerment and social capital theoretical frameworks, and their respective debates are fertile fields to think about ICT's impact and development. It is also clear we now have more questions than answers. It is necessary to compare and contrast the relations between individual uses of ICT and other collective and organizational uses of these technologies (in public and private settings). Additional unanswered questions include:

- What does development mean for people and institutions (state institutions, social movements, business sector, as well as for scholars)?
- What does information mean for people? What do social and family ties mean for them in their particular local and global contexts?
- What do technology, information, and communication mean for public access users, and how does this relate to development, well-being, or empowerment?
- What kind of political participation and power interactions are the relations between ICT and social movements producing? Are there any new political practices emerging? Are they exhibiting flatter relations? Are they enabling new forms of social and political mobilization?

Answering some of these questions could help scholars, practitioners, and decision-makers to discover if PAC venues can be something more than providers of, as one respondent put it, *just Facebook and Porn*.

Acknowledgements

Notes

1. http://www.bibliotecanacional.gov.co/?idcategoria=27552
2. Based on Quarterly report of Ministry of ICT, first quarter of 2010 (http://www.mintic.gov.co/mincom/faces/index.jsp?id=14580), which cites number of broadband connections to the Internet for shared

access, separate from home and business access, and subtracting the known totals for libraries and telecenters.
3. See more in Mager (2009, p. 1130).
4. See http://bit.ly/pWoddm for more details about the Facebook-started anti-kidnapping movement in Colombia.

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