Online_communities
Collaborative interface for social inclusion

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Abstract. *Research on contemporary habitation spaces is directly related to the study of the relationship between new media and everyday life. This paper presents ongoing in-depth research which intends to discuss these relationships in different ways on a conceptual basis. A collaborative multi-users interface is being specially designed, supported by different kinds of electronic equipment. Furthermore, the project's objective is to analyze how these information and communication technologies are to be used, as well as their impact on poor communities. As a hypothesis, our intention is to verify if the access to information will be able to broaden social interactions and improve new services which have been set up, in order to guarantee a better quality of life.*
Beyond being a conceptual approach, the study intends to present and examine facts obtained from intervening in a poor district in São Paulo city, Brazil. Using an existing public telecenter as an access provider to the internet, individual TV-connected set-top boxes in 220 apartments in a local social housing complex are being installed, enabling users to communicate through a collaborative multi-users digital interface. Adding a virtual instance to a geographically-based community, the aim of the project is to provide new possibilities to improve dialogue and debates, to encourage more income and cultural activities. It also intends to evaluate the effects of the technological mediation of social relationships, both inside and outside the community, as well as within the physical urban space such as in the dwellings.
The results of this study will be useful in defining public policies to be implemented by the Sao Paulo Local Government. The work is being sponsored by FAPESP, which is the Sao Paulo State Funding Agencie, but also by public institutions, private partners and universities. Researchers involved belong to complementary fields such as architecture, urbanism, computer sciences, social sciences, psychology and electronic engineering.

Keywords. *virtual communities, collaborative networks, digital inclusion*

Introduction

At the beginning of the 20th century, in industrialised countries or in countries that were being industrialised, the automobile was one of the biggest determining factors of urban standards and designs of main cities. Similarly, at the current time, it is accurate to think that new Communication and Information Technologies (commonly called ICT) could make new ways of grouping humans possible, and in some way would contribute to forming cities of the 21st century.

It would seem appropriate to urban planners and contemporary architects to reflect on and propose urbanity and typical habitation spaces of the so-called Information Era which could not be implemented in another context. However, the real dimension of the many changes that new ICT are nowadays bringing about in society and will bring about in the future is widely unknown. Prospective studies in this area are plentiful. Changes at many instances of daily life which are immersed in this reality are made possible by information being quickly spread. The implications are felt at work and in production, leisure, education, health, as well as in interpersonal relationships, in hierarchical power structures, in how institutions are formed, spreading to the whole social sphere. According to Castells (1999), the material basis of the new society is information, and information technology acts as a tool to make money, exercise power and create cultural codes.

Since the 1970s new technological instruments of communication, information processing and raising awareness of knowledge have been under development, and in the 1990s some of these instruments were used due to the huge expansion and spread of the world network of computers. However, the use of the computer as an important communication channel is just one of the main pillars of society based on information. The performance of economic, productive, social, institutional and cultural spheres is centred on the flow of information and, as a result, on raising awareness of knowledge. This new technological standard is extremely present in many different countries, in different social groups and classes. In other words, on a global and local scales, there are always people who are totally immersed in this reality in constant transformation, however there are always those who are excluded from it.

New social paradigms are being constructed which are closely linked to these transformations. What appears to be relevant and particularly interesting here are the impacts of this technological revolution on daily life. Social changes present on a day-to-day basis, mainly those due to the use of the so-called new media, are in some way great and do not go unnoticed. To the change of the relationship that people have with time and space, new work aspects are added, as well as the format of the so-called information society, which is linked to the globalisation of using the Internet and its institution as one of the most important means of communication. New ways of sociability are emerging and being added to the existing ones. Although virtual communities may present different characteristics, they are a reality which is difficult to contradict. However researchers are still far from the consensus concerning new questions which have arisen in the sociability domain. Among some social scientists´ analyses, that in a pessimistic way foresee the end of social face-to-face relationships in the future, and those cautious to the extreme, that ignore significant changes concerning social ties, there are those who explore evidences of this construction process of new bases of relationships in society focusing part of their analyses on virtual communities. In many of these studies, community is not only local sociability, based on geographical limits and focused on face-to-face relationships, but it is an instance whereby values and interests are shared, and where the sense of belonging is present. In this case, the sense of community would be the incentive of public participation, of democratic principles and civility as

Keith Hampton (2001) from the University of Toronto states.

Considering the context above, the understanding of new sociability standards from new media in daily life seems essential in terms of building current urban and habitation spaces, whether they are private, collective or public. Even though some changes in the use of these spaces are already visible, many questions concerning the relationships between these spaces and a new standard of day-to-day life, influenced by ICT, are unknown. It seems that cities and dwellings are being adapted in an improvised way to new lifestyles and are constantly trying to house not only new equipment, but mainly new behaviours waiting for initiatives that reflect emerging tendencies.

Virtual communities

Managing and making virtual communities potential to the poorest social classes, who are very far from possibilities offered by the new ICT, is on one hand assuming the role of the agent in favour of digital inclusion and on the other hand admitting that the virtual environment is a new social interaction locus at all levels. Furthermore, it is also admitting that the so-called virtual communities can help in the suitability and re-suitablity of concrete spaces over new bases. Setting up virtual communities among existing communities presupposes creating new levels of sociability - both in spreading and in intensity - that on a day-to-day basis can be of fundamental importance when it comes to poor communities. As well as communication and access to information in general, leisure and entertainment possibilities, many services (including public ones) may be available by using the Internet. It is important, in this sense, that electronic devices that transmit long distance, e.g. computers, are equipped with multi-user collaborative interfaces as in these virtual communities the users can not only be viewers or navigators, but also creators. They should be able to take part in coming up with information, adding to it, editing it and altering contents.

As well as creating a locus for new sociability and production of knowledge, a virtual community anchored in a certain physical space enables widespread discussion concerning the virtual universe of possibilities that can be added to concrete experiments.

Quoting experiments

Many experiments at different levels and in different places are being developed in order to create geographically referenced virtual communities. These include experiments from academic research to governmental and company initiatives, as well as those sponsored by non-governmental organisations. The aim is to make the use and the possibilities of ICT widespread, going deeper into the benefits that computerised communication can bring about in determined contexts, mainly in poor communities, giving them access to information, broadening social interactions and creating services that can improve the quality of life. There are many ventures of different natures such as sociocultural status and technical solutions which range from installing computers connected to a network (via cable, wireless or electrical conductors) in urban places, to the setting up of collaborative multiuser computer interfaces. These ventures are, in some way, linked to the idea of virtual communities and to initiatives which aim to connect computerised communication to physical places. Netville in Canada (Hampton, 2001), Helsinki Virtual Village in Finland (www.helsinkivirtualvillage.com: Apr 2005), VAN Bohechio in the Dominican Republic (edev.media.mit.edu/vanbohechio.html: Apr 2005), Les Courtillières de Pantin in France (Tramontano, 2003), the SARI project set up in India (edevelopment.media.mit.edu/SARI/mainsari.html: Apr 2005), the e-Extremadura in Spain (www.linex.org: Apr 2005) and Solonópole in Brazil (www.solonopole.ce.gov.br: Apr 2005) are experiments that, in

different ways, greatly facilitate communication and information exchange via computer networks centred in a physical place.

Other projects which are concerned with the development of infrastructures and low cost equipment can be quoted, such as corDECT (www.tenet.res.in/cordect/cordect.html: Apr 2005) and Simputer (www.simputer.org: Apr 2005) which were set up in India, as well as interface projects such as Data Cloud 2.0 (datacloud2.v2.nl: Apr 2005) and websites such as the Indian www.tarahaat.com, whose objectives are to make digital inclusion accessible to poor populations using devices which make the access to information and communication possible for people of different socio-cultural realities.

These experiments show differences in structure, methods, objectives, socio-economical-cultural contexts, as well as being part of distinct feasible initiatives. A more careful examination of these ventures could show that they were structured from various fields of knowledge such as Computer Sciences, Social Sciences, Architecture, Urbanism and Psychology, among others. Furthermore, most of them are structured by partnerships between the community, the government and private initiative and represent a clear opportunity for digital inclusion to populations which they are part of.

Some theorists

The creators of the Helsinki Virtual Village Project expect to better understand the social effects of a huge connectivity from the initiative of the virtual community proposed by them: "Will the constant availability of wireless connection make communities more cohesive, or more isolated? How will people balance privacy concerns with the obvious advantages of extended wireless reach? And how much connectivity - once it becomes the status quo - will people really want?" (Shaw, 2003)

Many researchers and various studies have addressed questions related to the universe of ICT. Among them are Manuel Castells, Eric Hobsbawn, Phillipe Quéau, Pierre Lévy, Jean Baudrillard, William Mitchell, Nicholas Negroponte, Henri-Pierre Jeudy, Paul Virilio and others. In the field of ICT relationships with the universe of social and communitarian relationships, it is worth mentioning the pioneering work of Howard Rheingold and in particular Barry Wellman and Keith Hampton.

According to Wellman (1999), what we are experiencing at the moment is a huge paradigmatic change, mainly in the way that a society is organised. The author says that nowadays we live in networked societies. In a society based on groups, people relate to few members of each one of the groups in which they take part in, according to a precise structure, with limits for inclusion and exclusion and strong hierarchies. Whereas in networked societies interactions are more diverse, the hierarchies weaker and the limits less strict. At home, at work and in other instances, exchanges take place between multiple networks, whether it be computer networks (and not a social network) technological infrastructure which increases people skills and organisations which communicate with each other, for better or worse. According to Wellman, living in networks presupposes the increase of skills to connect many social environments, as well as reducing the control that these environments have over people. Furthermore, it presupposes interactions based on characteristics of people, in terms of their lifestyle, their thoughts and interests, substituting criteria such as age, sex, race and ethnic origin. Finaly, it sets up indirect links instead of isolating, widens the possibility of choices and reduces identification and pressure of belonging to groups, increasing globalisation opportunities.

When considering the effects of cyberspace on social relationships and discussing the nature of virtual communities, Keith Hampton (2002) mentions the debate (which is always present in the academic world when discussing these subjects) among the non-utopians and the so-called tech-

nological utopians. The former believe that in the information society, in which work, leisure and social life mostly happen in computerised and virtual environments, people can reject social relationships centred on links based on physical places and personal contacts. On the other hand, the latter believe that the Internet has created a completely new way of the community, which has freed the individual of geographical restrictions and social characteristics such as sex, race and ethnic origin. According to the author, this debate does not recognise that, whether lost or re-created, the community has already been freed of geography and physical places and that the ICT can, on one hand keep the promise of finding communities based on physical places again, or on the other hand free them definitely. The author warns that, in spite of being clear about there being social links based on sharing concrete spaces, the similarity of interests is the most important way of maintaining social ties. 'Communities are defined as relationships of informal sociability, support and identity links, rarely being limited to solidarity of the neighbourhood or even to groups united by family and friends', writes Hampton.

"Communities consist of distant affinities, of workplaces, interest groups and neighbourhood ties, which together make up a social network that provides help, support, social control and other links for multiple environments. Inside these personal communities, individuals use many methods to communicate: direct contact, telephone, the post and more recently fax, email, chats and discussion groups via email. Looking for one's place in the community (whether it be in the neighbourhood or in cyberspace) is one of the unsuitable ways of revealing community links.' (Hampton, 2002).

It is particularly interesting here what Hampton reveals, on Netville: that the ICT encouraged a community on a level least expected: the neighbourhood which does not have any tradition in North America. This is apparently because if the opportunity to interact and exchange information is offered for people at a determined place, it is more likely that social and local links will become strong. The ICT facilitate the exchange of information, communication and other resources at the level of the neighbourhood, encouraging communities based on physical space, showing that the opportunity for local social interaction is responsible for the increase in the community involvement . This can be valid for local social links as well as for an increase of public participation. Hampton believes that planning communication mediated by computer to facilitate the exchange of communication and information, in local bases, and when there are not any other institutional opportunities, can improve the information flow and broaden local social networks, increasing the speed of community involvement.

When considering the implications of the massive use of the Internet as a means of communication, Castells (1999) raises various questions. Firstly, he highlights the fact that the network is a difficult tool to control technically or politically speaking and this softens the harmful effects of traditional systems of mass communication. He states that by making the network universal does not mean that a virtual society would substitute what he calls a 'real society'. He also quotes other work from Barry Wellman which shows that social networks linked by computer are largely associated to social practices of people in their already existent social networks highlighting that electronic communities are not less real or less significant than territorial communities fixed in space. The Internet would increase deeply rooted social chains instead of dislocating them. Castells also draws attention to the fact that the shared use of the Internet works in situations of professional and personal interest and that because of this, networks with specific purposes through affinities, values and interests are created. He also quotes psychological studies that show that this channel induces flexible personalities and changeable identities, but free of constraints and individualisations in their way of

interacting. Finally, he states that sociability on the Internet can be strong or weak depending on the people and the content of their relationships and that is in some way linked to non-electronic communication.

Castells also points out another aspect that is particularly interesting here: the question which arises concerning inequalities in the information era contrasting ´our technological super-development and our social underdevelopment.´ (Castells, 1999).

As was seen, if mediated communication can result in strengthening the more substantial social links in a determined place, links that bring with them numerous benefits to the people, it would be important to have them in communities which are socially and economically in need. Social underdevelopment can be fought against mainly using digital inclusion public policies. The sociologist Sergio Amadeu da Silveira, current Director of the Brazilian Institute of Information Technology, emphasises that it is the State's responsibility ´to broaden citizenship from the intensive use of information technology, to introduce the poorer social levels into the information and knowledge society and make the global network of computers a basic right.´ (Silveira, 2001). To be able to think about the right of sharing the network in a qualitative way is fundamental when considering interaction which presupposes creativity, the incentive to be curious, knowledge and sociability itself. The use of software with open source code, free from ownership restriction (a device which has substantial economic advantages when dealing with the public budget) is important.

Under Construction

Developing and implementing public policies from the experiment of going ahead with an action plan in the Sao Paulo district of Tiradentes to set up a communication and service network enhanced with a collaborative interface (based substantially on ICT resources) is one of the main focuses of the research repported in this paper. Therefore, it can be assumed that computerised new media can have the potential to structure virtual communities, as well as being part of the project of housing complexes for the poorer population. The COHAB-SP (Sao Paulo Metropolitan Company of Housing), a partner institution of this research, plans and builds housing of social interest in Sao Paulo city and is one of the most important producer agents of low cost housing in the city. The aim of the company is to work exclusively on projects that present social relevance concerning housing, in which it has vast experience. More recently the so-called ´telecentres´ have become part of its programme. As a result, COHAB-SP, in partnership with Sao Paulo city local government, (through its e-Gov Division) is constantly encouraging telecentres to be set up in areas where its complexes are.

Therefore, the possible public policy due to the presented research aims to encourage telecentres to be set up and re-qualified as well as having basic installation points of access to the web. However, apart from these aims, the objective of this policy is to plan and connect all the housing, public services, shops and local associations using new computerised media, becoming part of the priorities of the projects to be developed by COHAB-SP. The aim is that this practice of conceive housing on a large scale involving equipment, services and space, on a concrete basis as well as in a virtual environment, can go towards establishing new sociability standards and interaction with spaces. It is expected that the results of this research, on a broad scale, can be incorporated into the complexes produced every year by the company, benefiting thousands of residents in Sao Paulo. On the other hand, following the example of the e-Gov Division (also an important partner in this project), the tendency is for the COHAB-SP to become an important reference in this area, mainly for other similar companies.

The district of Cidade Tiradentes has become

a target of attention from the São Paulo city local government, since 2001, for presenting critical socio-economic indications as one of the lowest Human Development Rate (HDR) of the city. The rapid demographic growth of the region which is associated, on one hand, to the inhabitants low level of schooling and on the other hand to the high crime rates, shows the dimension of perverse effects of social exclusion which rules in the district. The studies which chose Cidade Tiradentes as a privileged area for intervention highlighted its characteristic as an area in great need concerning three aspects: social, housing and urban (Usina, 2003).

Chosen to house the first telecentre within São Paulo city in 2001, the district of Cidade Tiradentes has many social housing apartment blocks. It started formally in the 1970s when 40,000 units were gradually built by the government. It has a population of an estimated 22,000 inhabitants, predominantly young adults up to 24 years old, and occupies an area of 15km^2. The population estimated living in the apartment blocks is about 150,000 people. Behind this apparent homogeneity hides a diversity in the field of housing. Apart from many housing units sponsored by government funds, slums, illegal and irregular plots of land are found at the place, in private areas inhabited by a population of an estimated 70,000 people. Cidade Tiradentes is also made up of huge empty areas in the middle of a built-up environment which are inappropriate for living and most of them belong to government funds. Located in the east of Sao Paulo city, its population undergoes the dynamics of daily dislocations to the central regions of the city, even being deprived of a proper connection to mass transport such as the train or underground.

The situation of local unemployment is demonstrative and partly due to the planning of the district as a 'bedroom-district'. There are few industrial, commercial and service establishments and not even one bank there. In Cidade Tiradentes there is only one official job per 398 inhabitants. Most of the jobs are done on an informal basis and the governmental social programmes only reach 20% of the population in terms of financial help. The network of services in the health area is made up of four basic Health Centres, one Emergency Ward and 23 teams from the Family Health Programme. These figures related to Cidade Tiradentes (Usina, 2003) show the precariousness of the services offered to the population re-affirming the low quality of life which inhabitants have. It is worth mentioning that there are hundreds of entities and associations and sponsors of projects of different natures in the district, that in many ways help and attempt to minimize the absence of government funds. Violence and lack of safety measures are part of the every-day life of the population.

It is in a small part of this context of extremes that a virtual community is intended to be set up, fostered by new ICT. The communication interconnection of the population of the chosen area should be made up of a wireless system using the local telecentre as an Internet provider. Radio waves by omni-directional antennas will make the connection to the Internet possible. Cables are already linking the telecenter to the public city net. Three hundred access points will be available for free, using set-top boxes connected to television sets: 220 of them in apartments, 50 in small shops, and 30 in public services and non-governmental organizations in the neighbourhood. High schools, a children's day-care, a small library, a family healthcare centre, soccer teams and several associations are listed among them. The evaluating procedures to be used in the research are characterized by the use of different techniques such as online questionnaires, focus groups and behaviour maps (Ornstein and Romero, 1992).

All the software used is open source, which enables experiments concerning design and content to be carried out. Several examples of associative and collaborative interfaces are being studied in order to set up a virtual place of communication even to illiterate people. Among them, we can

mention the excellent work of the MIT Sociable Media Group in the United States, the V2's Data-Cloud versions in the Netherlands, the Electronic Shadows' I-skin in France and academic studies carried out by Bolter and Gromala, Oliver Grau and Brenda Laurel. The graphic interface design is being based on mnemonic structures, which were mainly developed during the European Middle Ages helping memorization tasks by the association between ideas and physical places, as described by Francis Yates.

It is important to point out that the research foresees the use of the structure already set up in the region in relation to telematic resources. Nowadays, Cidade Tiradentes owns three telecentres which have been already set up (and one is being planned). Even though slow, a small part of the population in the district is already being introduced to the universe of activities that ICT have to offer. It is a motivating factor, therefore, to consider that part of the population that does not have any sufficient knowledge in computing to operate equipment and computing tools. In some published reports, based on the evaluation of experiments concerning computerization (mainly targeting low income groups), the attitudes of these people, in general, in developing abilities to operate these new instruments is made clear. School workers, staff in shops, housewives and young students, who are currently illiterate in terms of the digital era, have something in common which is to be open to learning and developing the skills needed to use computerized equipment independently.

As mentioned before, among the various objectives of setting up a virtual community in Cidade Tiradentes is including people from this place in the telematic universe, making it possible to have new ways of sociability and community interaction. Therefore, based on the existing interactions in the day-to-day life of the people living there, one attempts to create an information system in a virtual environment, which can not only reproduce but enhance this day-to-day life. Furthermore, facilities are made available to these people and new tools in which they can talk to the community will be at their disposal. Ideally, the citizen who lives in Cidade Tiradentes will interact in a virtual environment not only as the one who benefits but also as the actor. In a way, what we are looking for is a way to communicate and exchange information which may be impossible by other means and that could be useful on a personal basis in the field of communitarian action.

The structure which is the anchor for this virtual community will be called network. In this context, the proposed network intends to be the way in which both concrete–and-virtual community of Cidade Tiradentes organises itself and in which it will be articulated. At first, its design should presuppose articulation and social interaction and at the same time be flexible and decentralized, non-hierarchic and enabling people to connect to each other. Understanding that a network organisation presumes the connections between us, it could be said that the central point, from which the entire network's lines proposed for Cidade Tiradentes start from, is the individual, the citizen, the person. The main idea of this network is to work with personal identities. This means that most databases as well as information included and also written on the net, will be available from the personal identities that each resident of the district wants to assume in the virtual environment.

The various aspects mentioned above, in spite of not fulfilling the universe of action research, show that setting up virtual communities involves aspects that are concerned with distinct areas of knowledge, and are clear both in the multidisciplinary sense as well as the compatibility of procedures that it presupposes. These are, in short, the countless specifications which involve an experiment of this nature and that guide, step-by-step, its systemization and structuring.

References

Castells, M (1999). The Social Implications of Information and Communication Technologies. Report prepared for UNESCO´s World Social Science Report. Available on http://www.chet.org.za/oldsite/castells/socialicts.html

Hampton, K. (2001) Living the Wired Life in the Wired Suburb: Netville, Globalization and Civil Society. Thesis for Doctorate Degree in the Graduate Department of Sociology at the University of Toronto.

Ornstein, S.W, Roméro, M. (1992) Avaliação Pos-Ocupação do Ambiente Construido. São Paulo, Studio Nobel/EDUSP.

Shaw, W. (2003) In Helsinki Virtual Village.. Available at http://www.wired.com/wired/archive/9.03/helsinki.html. Consulted on 18 February, 2003.

Silveira, S.A. (2001). Exclusão Digital: a miséria na era da informação. São Paulo: Conrad

Tramontano, M (2003). Vozes Distantes: organização e sociabilidade em comunidades informatizadas. In: Cassino, J., Silveira, S.A. (ed) Software livre e inclusão digital. São Paulo: Conrad

Usina – Centro de Trabalho para o Ambiente Habitado (2003). Plano de Ação Habitacional e Urbano: Cidade Tiradentes. São Paulo: Sehab. Internal document for restricted use.

Wellman, B. (1999) Living Networked in a Wired World. For Marti Hearst and Dick Price, “Trends and Controversies” section of IEEE Intelligent Systems, January-February.