

Gender in the Digital Age: Women's Participation in Designing Social Software

Tânia Cristina Lima and Júlio Cesar dos Reis

Center for Information Technology Renato Archer (CTI) - Rodovia Dom Pedro I,
km 143,6, 13069-901, Campinas, SP, Brazil
{[tania.lima,julio.reis](mailto:tania.lima,julio.reis@cti.gov.br)}@cti.gov.br

Abstract. Women's participation in social network activities may be an essential condition for its maintenance. This article aims at presenting gender issues and their connection to information technology environment. In order to know what are the gender differences that should be considered in designing a Social Software, the process of creating a social network in the Web is discussed from a female perspective. Testimonies of various social actors and residents of a lower medium class peripheral neighborhood in the city of Campinas, Brazil, the Vila União, involved in the e-Cidadania project is analyzed making references to the paths chosen by the women during the design process, in the pursuit of technological knowledge required for this activity.

Keywords: Gender, Local Culture, Technological Environment, Inclusive Social Networks.

1 Introduction

At the beginning of civilization the human being was nomad and the individuals dedicated themselves to activities of gathering, hunting and fishing, having survival as the sole purpose. Along the time and experience they learned that an organized group functions efficiently, with the increasing importance of kinship and affinity links, family and clans. In order to keep their unity and to protect their identity, these groups created particular ways to express and communicate among individuals, thus establishing specific cultures. Eventually writing became used by most groups and nations in its many forms such as: books, magazines and newspapers, television, computer, satellite, and more recently by Internet and e-mails. Far from adopting a vision of technology as the engine of history, it is accepted that its use changes the type of relationship between people and alters the way of being in the world.

To understand how relationships configure group identity at the global level, it is important to consider the connection between social actors in this environment (World Wide Web) by setting its entry into the world and their cultural traits from this perspective. In these circumstances the main question considered is: how women receive the technology and how these technologies can contribute to empower the local culture?

It is understood that the study of communication technologies, or rather its appropriation, considered from the gender point of view, is more appropriate and perhaps even more important when we want to elect the best features for a computer system.

Public policies are concerned with the inclusion of female in the digital world, so they try to support learning and communication practices that result in decreasing the digital divide. The e-Cidadania project [2] may be considered a good example of these practices, since its scope aims to achieve economic, political, and cultural changes.

Moreover, socio demographic data of women in Brazil show the rapid growth of female class and display their alternatives in search of visibility. It also shows that women still have a great lag of opportunities compared to men. Women living in large urban centers emerged as a significant contingent of people earning low income, few job prospects and low education [1].

This paper is organized as follows: the section 2 presents the female universe bringing updated data about the population social layer in the research context in Brazil. The section 3 is devoted to a theoretical discussion. The section 4 presents considerations about the feminine discourse; these are excerpts transcribed from interviews in order to enrich the debate on the subject. The section 5 finalizes the paper by also suggesting avenues for future work.

2 Gender and Life Quality

In the last 20 years the Brazilian society suffered demographic and socio-economic transformations that resulted in changes in the spheres of the family life, with prominence reduction of the size of families and the growth of the proportion of families whose responsible persons are women.

The *Vila União* neighborhood follows such change pattern, in which women's proportion responsible for homes is high. This fact is also reflected in the socio economic development of the families, both in cultural aspects, such as dissolution of marriage, until the lack of formal jobs. Among younger, there are those that look for a model of individual independence.

The women participants in the Inclusive Social Network (ISN) *VilanaRede* (built in the e-Cidadania context) represent the community's female population layer. Without opportunities in formal market jobs some of them stay home and exercise informal paid tasks. Concerning the way individuals deal with the technological environment, it is important to note that when faced with many features offered by the system, which were developed with and for the community, *VilanaRede's* women users choose preferably those that somehow would help them to develop their own business (*i.e.* they had a greater interest in certain features).

Given the geographical extent of the country and its population diversity, there is a sizable contingent that remains in the range of digital exclusion. There are different ways to measure the exclusion; for example, the access to information technologies may be measured from the approach of socio-economic development. In urban areas, in households belonging to D and E social layers, the Internet access reaches 1%,

while households in the class A access reaches 93%. Another barrier to digital inclusion is the education; efforts must still be made to improve social and economic conditions that determine the level of education. Statistics on differences in education levels achieved by men and women indicate that there are more women included in lower levels. For example, the proportion of men with up to three years of study by the last Census in 2000 was 33.7%, while women were (37.6%).

Concerning the age structure it is important to note that the Brazilian population goes through a gradual process of aging, reducing the relative proportion of children and young people, due to falling fertility levels in recent decades. This change is also reflected in the average of the female population, which stood at 19.4 years in 1980 and reached 24.9 years in 2000.

3 Theoretical Reflections

The contemporary technologies that enable and enhance communication among people must mainly consider the culture of the group that it targets, among other factors. When this communication exists to support social networks, it is important to consider the cultural structure of the target group. The analysis of social interaction as the *locus* of cultural dynamics is studied by Edward Sapir [3]. Culture, resulting from interactions between different social actors, clarifies the modes of cultural construction on any scale of event.

Anthropology and social sciences in general understands the culture according to one of its first meanings: culture as an ideology - a process that produces specific features of culture, habits and behaviors by borrowing references from the dominant ideology. This ideological feature in culture formation relates to the maintenance of order and social integration. As an example, from the ideologically 'dominant' culture emerges the 'mass consumption culture' replacing the 'traditional culture'.

However, some authors like Williams [4] and Hall [5] recognize the authentic culture or traditional features as resulting from the combination of high culture elements, with those from the ordinary or popular culture. Both authors show that it is possible to verify the importance of culture and language in communication flow. Based on the Marxist concept of production and consumption the authors will explain the message transmission as a chain of communication that does not operate linearly. Understood as a complex structure of meanings, communication is not always received in a clear and transparent way. This means that there is not an overall logic that allows us to understand the meaning or the ideological meaning of the message implicit in the communication [5].

This can be verified in any technology environment that desires to be inclusive. We must consider population characteristics in the design and features of a computational system, such as: cultural capital and language, understanding interactions with computer and user's expectations with network. Writing about the electronic media, Hall and Williams, calling attention to the dual interpretation of the data related to its use, in which case the culture and language may be as much an obstacle as an opportunity to allow interactivity [6].

A technological artifact properly constructed to and with the community can bring about remarkable transformations of qualitative nature. It is a process that affects the lives of families and communities, while it requires the harmonious participation of all involved. However, the appropriation of technological innovation does not happen equally to men and women. That is why we address the effects of gender, involving specific benefits for women. For this reasons, it is not clear what the communication process brings to everyday life. We ask whether these innovations realized under the project would be fully used outside of that scenario.

This question can be answered with a positive increase on the relationship between human versus computer, leading to a more frequent use of the system and its features in a meaningful way. When looking at the practices of women from the construction and use of *VilanaRede* we can see this actually happening.

4 The Community and the Technological Use

In test scenarios of the new website *VilanaRede* users gradually gave evidence of good practice, demonstrating autonomy and self-assurance when making use of hardware tools (keyboard and mouse), and also software. Over time women began to post ideas and ads in the system in order to communicate. The ISN have become (it is now seen) as an alternative communication channel of long range to the community. The use of the network system increased the opportunities of work by increasing contacts.

The correct use of the PC is rewarded with recognition for the effort invested in learning to communicate through the machine. Women learn how to communicate and keep updated about many subjects: “[...] *everyone does it nowadays; you get outdated if you not run for it. PC is a working tool used a lot.* (Vila União’s residence number 4).

Confidence, motivation and support are part of a group of taxonomies used to evaluate the system. According to Burnett [1] these are situations that should be taken into account when evaluating the design of the system.

The good practices related to gender are numerous: they are reported in the interviews and statements confirming the change of relation between the human versus the digital artifact, as the motivation for surfing in the Web, the autonomy for accessing that the good use of technology makes possible. They understand that every effort for learning is rewarded with improvement in quality of life that returns to them, to family and community.

From this community is observed that "being" in *VilanaRede* brought greater diversity to the community. It allowed access to information and make they felt satisfied with the dedicated effort. After applying their expertise in creating announcements in the ISN *VilanaRede*, using for that fully digital assets and artifacts such as cameras, photo, movies and chat, it is possible to see emerging a visible growth of their self-esteem, self-confidence and in their ability to use the resources offered by the system. They report that: “[...] *I have never imagined how was to construct a site*”...“*this knowledge has no price, there is no value. There is so many things that I didn’t know and I learned.*” (Vila União’s residence number 1).

5 Final Considerations

This paper is an attempt to show that technology when associated to gender brings the capacity to emancipate people. The facility to access information is recognized as much important, as well as the capacity for interaction and collaboration between people that technology offers. There is no doubt that the contemporary technology gives to human the capacity to produce better and in more quantity. However, it does not point out what are the better choices in front of a variety of consumption and cultural options. That is the moment that makes difference to include the female population layer that inhabit the huge urban centers.

Such significant contingent of people is capable to remake their traditional habits rooted in the local culture. They also are capable to understand the potential for communication brought by technology seeing the possibility to create and to express themselves. They realize accessing the digital world opportunities to overcome their social and economical situations, and also to improve their female condition mainly for recognizing the importance of self-esteem.

We pointed out that technology not distinguishes gender, in other hand just the gender appropriates it differently. In this sense, we are aware about the truths and myths created around the use of technology. However, a system that contemplates the differences regarding gender in design process of the computational system, must be useful to other kinds of users; *i.e.* although the reported experience has indicated to be efficient to women context, this just reinforce that potentially it can bring considerable impacts to their life (private and public). Further study can show the direction if this is enough to confirm new design methods that contemplate the female layer.

Acknowledgments. This work was funded by Microsoft Research - FAPESP Institute for IT Research (proc. n. 2007/54564-1). The authors also thank colleagues from IC/UNICAMP and from the “*Vila União*” Community.

References

1. Beckwith, L., Burnett, M.: Gender: An Important Factor in End-User Programming Environments? Visual Languages and Human Centric Computing. IEEE Symposium, 107–114, 30-30 (2004)
2. Baranauskas, M.C.C.: e-Cidadania: Systems and Methods for the Constitution of a Culture mediated by Information and Communication Technology. Research Proposal for the Microsoft Research-FAPESP Institute (2007)
3. Sapir, E.: Culture, Language and Personality. In: Mandelbaum, D. (ed). University of California Press (1949)
4. Williams, R.: Marxism and Literature. Oxford University Press, Oxford (1997)
5. Hall, S.: Da Diáspora – Identidades e Mediações Culturais. In: Horizonte, B. (ed.) UFMG Codificação/Decodificação, p.354 (2003)
6. MODELO DE REFERÊNCIA – Sistema Brasileiro de Televisão Digital Terrestre. FUNTEL. Projeto Brasileiro de Televisão Digital. OS 40539. Texto em PDF (2006)