

Amazonian Geeks and Social Activism

An ethnographic study on the appropriation of ICTs in the Brazilian Amazon

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Abstract

This ethnographic study gives insight in the usage and appropriation of ICTs in the north of Brazil. A grassroots initiative called Projeto Puraqué is one of the main actors at the digital inclusion stage and has developed a didactic methodology through which they tend to go *beyond* digital inclusion and instead use ICTs as a tool for social inclusion. One of the basic principles in their methodology is remanufacturing, reusing and rebuilding electronic waste and to run free/libre and open source software on it. Thus, they stimulate collaboration, solidarity and critical thinking, aiming at the creation of autonomy and sustainable development. A thorough analysis of their activities allows us to understand what this rather profound knowledge of (alternative) ICTs means for the user and how particularly those that are “digitally included” benefit from this process.

Introduction

Many digital inclusion initiatives are either strategically aiming at accumulating capital in Southern regions¹, or top-down aid initiatives that fail to take into account the local values, knowledge and needs. In Brazil, a 'post-development' country that still faces enormous inequality, many projects and initiatives (governmental and non-governmental) tend to go beyond providing mere access to ICTs and in fact focus on a rather profound engagement with ICTs. Emerging from a network of media activists an idea called *metareciclagem* departs from the idea of using *alternative technology* as a participative methodology for marginalized groups. They remanufacture, rebuild and recreate used hardware that is considered obsolete in order to increase meta-knowledge about technology and to enhance autonomy. One of the basic principles of these initiatives is the stimulation of entrepreneurship, self-management and the creation of mini-companies and corporations, which emerges in autonomic communities. Also, the bottom-up creation of technologies fits the Brazilian inventiveness and allows it to appropriate ICTs to local standards and cultural values². Furthermore, the reuse of hardware offers a solution to a world that is already full of hardware, instead of spending resources to create new technologies³. Finally, the use of such alternative hardware and FLOSS (Free/Libre and Open Source Software) should create independence from western oligopolies and/or top-down aid in the form donating hard- and software⁴.

In order to study this rather profound and alternative usage of ICTs and the effect and benefits of it on a particular user I found Projeto Puraqué, a group of social activists who use ICTs not merely to *digitally* include people, but rather to *socially* include them. They focus on underprivileged groups throughout the region and offer them a large variety of courses, workshops and activities related to ICTs. They tend to go beyond digital inclusion and instead serve as a social space in which people learn how to use ICTs in order to increase knowledge as a basis for sustainable personal development. Furthermore, they tend to spread their methodology throughout the region through articulation to the more sustainable and rather top-down implemented digital inclusion programs, usually by the public sector. On the one hand this helps them to sustain without significant income, but on the other hand this turned out to hamper their activities as they become to operate in a certain framework imposed by

1 See: Nederveen-Pieterse J. Pieterse., "Digital Capitalism and Development: The Unbearable Lightness of ICT4D", in: Lovink, G., and Zehle, S., (eds.) *Incommunicado Reader*. Amsterdam: Institute of Network Culture, 2005, pp. 11-29

2 Fonseca, F., Freire, A., and Fiona, A., "O Impacto da Sociedade Civil (des)Organizada: Cultura Digital, os Articuladores e Software Livre no Projeto dos Pontos de Cultura do MinC" in: Rosas, R., and Vasconcelos, G., (eds) *Digitofagia*. Radical Livros: 2006

3 Felipe Fonseca in Kranenburg R. van, *The Internet of Things*. Amsterdam: Institute of Network Cultures: 2008, p 31

4 Reijswoud, V. van, and Jager, A. de, *Free and Open Source Software for development*. Polimetrica, 2008

the other party.

This ethnographic research is conducted in Santarém, a middle sized city in the state of Pará, which is located in the North of Brazil. Pará is the second largest state of the country and possesses a vast quantity of natural resources and minerals, though simultaneously it is the most deforested state of the Amazon⁵ and subject to mineral exploitation. The high poverty rate and the many cities and villages isolated from the urban regions that lack proper education, health care and access to communication and information are evidence of the discrepancy between the richness of the region and the unequal distribution of wealth among the habitants⁶. The region faces serious exploitation by transnational corporations and usually do not benefit from the wealth the area possesses, as people from rural areas face expulsion from their territories and have to move to urban areas. I imagined that, in a region without much infrastructure, access to ICTs would have an incredible impact on the people. What is done, however, for these millions of yet “digitally excluded”? Are they “being included” at the moment? And by whom? Would they go *beyond* providing access? And whom would that benefit? That is, *in what* exactly are these people included?

A two months case study offered insight in the use of ICTs by the local users. In this article I tend to move away from the idea to use ICTs as a tool for economical development and focus on the local and informal usage of ICTs by marginalized people. I will discuss what it means to be digitally included and what should be aimed at in the process of digital inclusion. I will therefore focus on the potential to locally improve the lives of excluded users, how social enhancement and transformation for a particular user are brought about. Finally, I will demonstrate how their cultural and social values and characteristics are reflected in the appropriation and use of technology.

Grassroots activism – ICT as a tool for social inclusion

Inventiveness, innovation and creativity: Gambiarra

“The gambiarra is [...] a voice, a cry—of freedom, of protest—or simply, of existence, the affirmation of an inmate creativity”. Ricardo Rosas.⁷

Whether or not a remnant from their history of exploitation, colonization and inequality, the

5 See: Vasconcelos, G., “Espaço[nave] – Manifestação Coletiva do Aparelhamento Midiático”. in: Rosas, R., and Vasconcelos, G., (eds) *Digitofagia*. Radical Livros, 2006, pp. 128-139

6 See: Vasconcelos, 2006

7 Rosas, R. “The Gambiarra: Considerations on a Recombinatory Technology”, in Boler, M., (ed) *Digital Media and Democracy. Tactics in Hard Times*. Massachusetts Institute of Technology, 2008 (p 351)

Brazilian people have developed particular skills in order to deal with several everyday problems and obstacles. *Gambiarra* refers to using your creativity to achieve a certain goal alternatively⁸. This inherently creative and inventive way of achieving things is also being used as a “solution provider” to rather physical-material problems, using your creativity in order to adapt the original function of certain objects so that they can serve an alternative function. This cultural characteristic departs from the idea of recycling material and products that are considered obsolete by our consumer society in order to give them a second life⁹. *Gambiarra* is “[...] a guerrilla tactic, a plan of action, transmission and dissemination”¹⁰ and refers to the ability to create all sorts of ad hoc solutions to everyday problems, using any available material. It is the inventiveness to explore technology and creatively transform what one *has* in what one *wants* or *needs*. During this process people learn, observe, fail and try again, needing large doses of spontaneous innovation¹¹. For instance, in a distant community, due to a lack of a high mast, the antenna to transmit the Internet signal was installed on the church, tied to the cross. Or in Santarém PET-bottles serve many *gambiarra* solutions. Once I saw a fifteen year old boy using the top half of a PET-bottle as a inventory “speaker” in order to amplify the sound of the music he was playing out loud on his cell phone. Also, and this is one of the most common *gambiarra* practices, people attach a scourer to the TV antenna in order to diminish noise and improve the quality of the image.

Gambiarra means the pulling of these objects out of their original context and addressing another role to them, though it also simply refers to looking for an alternative manner to achieve something. While in this context *gambiarra* has a rather economical connotation, several Brazilians told me that it actually is a choice; a way of living. Brazilians like to use their creativity and inventiveness in order to achieve things. It is not merely a characteristic of the lower classes in order to “survive”, but rather an attitude that people prefer. In a way, it is *tactic*. It is a subtle protest against a consumer society and a wink at the power-structures that make them behave in a certain pattern; a predetermined model. Instead of a *mere* solution to everyday problems it rather seems a lifestyle. It is something that is inherently rooted in their everyday culture.

How does this cultural characteristic relate to digital culture in the North of Brazil? There has been written a lot about *gambiarra* practices, DIY and low-tech technology. For instance, the ability to appropriate technology to local cultural characteristics and standards, which results in various practices and activities in which ICTs fulfil different functions. Though not always tactical, people obtain access to and use ICTs often in an inventive and often alternative manner. In the next section I will introduce Projeto Puraqué as a project that uses *gambiarra*

8 See: Fonseca, Freire and Foina, 2006

9 See: Rosas, 2008

10 Rosas, 351

11 “Sobre About” Retrieved from <http://mutirao.metareciclagem.org/conteudo/SobreAbout> from 02/07/2010

practices in order to digitally include people and demonstrate how these people have given a meaningful role to ICTs within their cultural characteristics and practices.

Projeto Puraqué: appropriating ICTs for social change

The Puraqué is a fish that lives in the Amazon Rivers and causes an electric shock when you touch it. Puraqué adopted this name, since they want to wake up people through a shock of knowledge.

Gambiarra has been a fundamental element in the numerous grassroots digital inclusion initiatives that have emerged throughout Brazil. In Santarém Projeto Puraqué is a collective of social activists that spreads an ideology throughout the region, aiming at social engagement and emancipation of the people through increasing collective knowledge and in a way trying to create autonomy within the existent unequal capitalist model. As innovative Brazilians they search a form of sustainable development based on the *generation of wealth through knowledge* about the daily and local reality (exploitation, violence, drugs, sex and unemployment) of the people¹².

The puraquean@ methodology

Through a more profound discourse on ICTs Puraqué tends to go beyond the basic principles of usage and equip the users with a meta-knowledge on technology. They focus on socio-political issues that are related to ICT and today's society such as capitalism, consumerism and environmental issues, and tend to use ICTs in order to think of alternatives. Originally they departed from the gambiarra idea that instead of blindly consuming everything that is produced in the Western world they should rather focus on what is going on *around them* on the streets, and what they can use it for¹³. For instance, they have once created an Internet antenna using oil cans. And in several cities and villages they built a FM radio transmitter of old components and pieces of a PC power supply. By this they demonstrate that they neither depend on the West nor on the capitalist market or on financial resources, but that they can

12 Gama, J. "PURAQUÉ: Uma história do futuro do software livre na Amazônia". Retrieved from http://puraque.comumlab.org/?page_id=2 on 07/08/2010 and Lima, P. "Santarém terá Pontão de Cultura Digital". Retrieved from <http://pontaotapajos.redemocracia.org.br/2009/03/18/pontao-de-cultura-digital-do-tapajos/> on 07/08/2010

13 Rosas, 2008

create sustainable alternatives. These activities demonstrate people how to provide *themselves* access to ICTs in an alternative manner and simultaneously encourage the individuals to collectively use this knowledge in order to transform a region that is subject to exploitation into one in which the development of digital technologies could be the main characteristic. The informal activities have evolved into organised courses and a rather didactic methodology that stimulates collaboration, solidarity and critical thinking. In this way they do not focus on providing access to ICTs as an *end* but rather use them as a *tool* for a form of social enhancement, aiming at autonomy and sustainable development.

4.3.1 *Metarec*

Metareciclagem is an idea that plays a fundamental part in their methodology. Metareciclagem includes “recycling on a meta-level”, which means recycling e-waste (electronic waste) and garbage in order to create awareness and autonomy. Funnily enough, when abbreviating the word to “metarec” in Portuguese you pronounce “*metahack*”.¹⁴

In the early stages of the learning process metareciclagem consists of deconstructing a PC and rebuilding it after knowing the exact function of each piece inside the “black box”. For most of the participants the metareciclagem class is the first contact with ICTs and, therefore, the first time they see a computer from the inside. This actually helps them to understand the various functions of the PC, as for those who use a PC for the first time neither the interface and structure of software make very much sense nor do they have a clear idea about the several parts of the PC. What, for instance, *is* software? One day I was watching a lady creating an email during a class about Internet usage. At one point she said that *the Internet* in my country would probably be very much advanced. This lady had no idea what the Internet actually was and assumed that it was similar to hardware or perhaps something like software. She was not able to visualize the several different elements ICTs consist of, which would allow her to understand the working of it. Opening up the computer and explaining the function of each single piece allows the user to get a better understanding of the hardware and how each piece relates to the software. The instructors usually do this by comparing each piece with the parts of the human body or a human activity such as doing your homework: you take all your books (the documents), pens and pencils (applications to edit the documents) out of your backpack and put them on the table (random access memory (RAM)). After finishing you guard them again in your backpack (HD), so that they will not get lost. They also often compare the processor with an assistant who runs around in order to fulfil all the user's wishes. Of course this is very stressful, though luckily the cooler and the ventilator can help keep his head cool. After knowing the specific function of the HD, the processor, the cooler, the ventilator and the

14 This “r” in Portuguese becomes silent, and is pronounced as an “h”.

RAM working on a file and saving it afterwards makes much more sense.

This process not only helps them understand their actions when working on a PC, they also realize that technology is understandable, touchable, and not magical at all. This kind of meta-knowledge about technology shows new users that technology is accessible for anyone, which enhances their self-esteem. For many this causes an enormous social transformation, as people are extremely shy and insecure. During one of Puraqué's workshops at a neighbourhood association a little boy struck me. During the introduction round in which everybody is supposed to present himself in a couple of words he remained silent. While everyone was looking at him the poor kid simply was too shy to say *anything*. It took him about two minutes to pick up enough courage to speak out loud his mere name. At the end of the workshop, however, he was the first to install Ubuntu on the PC which they just finished to rebuild, without erring or needing any help. The fact that he was capable of installing the software must have given his self-esteem an enormous boost.

Metareciclagem also helps users realize that technology is not merely available for the rich. Many think ICTs are simply too distant, too magical and too elaborate for them. However, they realize that they can open up a PC, take out and hold all the pieces and subsequently put them back without breaking or damaging any of the pieces. Also, they see that it actually is very easy to rebuild the computer afterwards. When they have put back all the pieces on the right place they close the computer again and turn it on. This is a very exiting moment because the puraquean@s¹⁵ usually warn the participants that when one of the pieces has been put incorrectly the computer will start to smoke. In the worst case it will even explode. However, this is not very likely to happen and usually it switches on normally. Thus, they completely demystify technology, as participants realize that a computer is just a simple construction rather than a magical object.

The demystification of technology also helps them to overcome their fear to touch the equipment. For most of the students this is their first contact with a computer and they usually are afraid to get an electric shock or to damage it as they usually lack the financial means for compensation. Often in the case of (older) women, people stare at their screens without doing anything. I learned that this is a common phenomenon, as kids are usually not encouraged to explore and investigate things but are rather taught to be obedient. In these cases this would include not to touch or do anything without permission. For instance, one puraquean@ once told me about a lady who was very shy and passive, because when she was a young girl her mother had been very rigid with her. That means that without losing this fear these people would not enter an Infocentro or cybercafé. They would simply be too afraid. Furthermore, many adults lack the curiosity that is familiar to children and adolescents and do

15 Collaborators at Puraqué. They use to write puraquean@s instead of puraqueanos or puraqueanas, referring to men and women respectively, because they do not want to distinct between male and female participants. They are considered all equal.

not know what to do with or how to use a computer. For instance, when I showed a lady how to use Google Talk she asked me: “But what am I supposed to say?” or “Should I be formal, or rather informal?” Even when she was about to chat with their classmate. Knowing what is inside the black box makes people realize that they are capable of coping with technology. They learn that informatics is something everyone can learn and in fact is very accessible. The further they involve in the process of meta-knowledge of both the technical and social side of ICTs the more they realize that there is an actual role for them as both a user and a active participant in a space that goes beyond their geographical boundaries.

4.3.3 FLOSS in a “hacker culture”¹⁶

Besides metareciclagem FLOSS plays a fundamental part in their activities. When they started the project in 2002 in Santarém overall digitalization was yet in its infancy and they were the first who brought FLOSS to the region. They disagreed with the fact that Microsoft was the only operating system that was covering the area. Once they learned the idea and philosophy of FLOSS they realized that it would perfectly suit their activities. For them the profound and meta-knowledge of technology allows the new users to actually *do* something with technology and the usage of FLOSS is fundamental in this process. Dennie, one of the collaborators of the project, explains:

“We want to contaminate people with the “Digital Culture virus”¹⁷ and with the philosophy of FLOSS, because during the knowledge revolution, the computer has become the main tool that converges all means of multi-media production. Also, the computer is an incredibly powerful tool for learning, communication, exchanging ideas, and to store information. People need to understand that, otherwise our society will never evolve the way we want. This is what we most stress here, since these days we are subject to predatory processes (mining, deforestation, soy) that will bring more and more misery to our region”¹⁸

They are tired of being exploited for the resources the area contains and they want knowledge to become the main characteristic of the region. Jader, one of the founders of the project, once told me: “We hope that our region becomes a reference in the development of open source

16 See: Fonseca, F., “Em Busca do Brasil Profundo”, in Brunet, K., (ed) *Apropriações Tecnológicas. Emergência de textos, idéias e imagens do Submidialogia#3*. EDUFBA: Salvador, 2008. (p 94), 2005.

17 Digital Culture refers to the dissemination of culture by using ICTs (video, audio, blogging, etc.) instead of providing new users with mere access to it.

18 Fabrizio, D. “É o Conhecimento que move o mundo”. Retrieved from <http://arede.inf.br/inclusao/educacao-atual/2609-e-o-conhecimento-que-move-o-mundo> 12/05/2010

digital technologies, instead of being known as an area of exploitation. We believe that the ancestral wisdom of their people and knowledge of technology, on the philosophy of FLOSS in a capitalist society and consciousness on electronic waste and the environmental damage it causes might actually change something, and increase the quality of our lives"¹⁹. Through the usage of FLOSS as the standard operating system, in combination with the reuse of electronic waste and donations of old PCs, they tend to create awareness on today's consumer society and the negative consequences of it on the environment in a region in which the damaging effects are very visible.

4.3.4 The Internet for Critical thinking

A crucial aspect in their methodology is to increase critical knowledge among the participants. The Puraquean@s argue that knowledge is what their region lacks in order to develop in an equal and sustainable manner and ICTs can serve as a tool to obtain this knowledge. Therefore, they not merely focus on accessing, using and understanding ICTs, they also imbed this discourse in several extra activities. For instance, I have watched several classes in which the students had to design a flyer about environmental threats. One group made a flyer about deforestation. They had to access the Internet in order to retrieve relevant information about a topic they wanted to write about. After visiting a couple of relevant websites they copy-pasted parts of the texts and rewrote other parts, thus informing about the environmental and social consequences of deforestation. They also searched for a couple of images which they edited in Gimp (GNU Image Manipulation Program). Subsequently, they imported both the text and the images to Inkscape (graphics editor) in order to finish the layout of the flyer. As it is a group assignment the students interact with each other, exchange opinions and discuss the information and thus collaboratively increase their knowledge of both the content and the form. Problems, for instance, are a certain image they want to use with a part of the text which in fact does not correspond to the content of the text. When they discuss this and compare it with the particular image they profoundly engage with the topic of the class. As they encourage the participants to use the Internet as a source to retrieve information about socio-political topics the students learn how to use the other functionalities of the Internet. This is important, as one of Puraqué's main aims is to use ICTs in order to obtain knowledge and develop critical thinking skills rather than merely using it for social networking or consumption.

Where the first step is to create a profound technical knowledge of ICTs in order to stimulate social enhancement and autonomy they eventually aim at increasing critical knowledge as a

¹⁹ Jader Gama, one of the founders of Puraqué on 04/12/2009

valuable resource throughout the region. By “contaminating” and educating others this knowledge will exponentially increase. As the *puraquan@s* are activists they in fact have a certain stake in the digital inclusion process. They fight against capitalism that exploits their region, destroys their environment and causes their poverty. They wary the private sector and tend to create autonomy through open source technologies (hard *and* software). They want to make people aware of that and collaboratively work on this alternative to the existing model by increasing collective knowledge and using this in order to think of and create sustainable alternatives. This too includes a form of active participation in which the users are able to *produce* content or critically analyse information rather than being a passive consumer. Most important, however, is to socially enhance an individual, departing from the idea that the user can decide what is beneficial to him without implying him certain rules or ideas²⁰.

The *puraquean@*; a couple of portraits

Jose and Jessica are two ex-*puraquean@s* that at that moment of my research were working in an Infocentro, a computer lab that is part of a project called Navegapará, which is implemented by the state government. The first time I met them I had a chat with them in the Infocentro, because I wanted to know more about their work and hear about their *puraquean@* experience. Although these women were young, Jose was 21 and Jessica only 18, I directly felt a connection with them; a spontaneity and maturity that not many girls or women in Santarém share.

4.4.1 Jose

Jose told me that when she first visited the Puraqué she was about twelve or thirteen years old and she had never touched a computer in her life. After her first visit she continued participating intensively, first as a student in the basic courses and later as a volunteer; teaching courses and giving workshops throughout the region. Since last year the *puraquean@s* indicated her as a monitor for a new Infocentro in the neighbourhood of Aeroporto Velho where she is now employed for 30 hours a week. Although she still talks a lot

20 See: Buzato, M., “Inclusão digital como invenção do cotidiano: um estudo de caso”. In: Rev. Bras. Educ. [online], vol.13, (38), 2008, pp. 325-342. Retrieved from http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-24782008000200010&lng=en&nrm=iso on 11/12/2009. He shows several concrete examples of a Telecentro's collaborator who has a certain vision on how to “include” a user and what to teach him, from the perspective of the “already included”. The user, on the other hand, oftentimes uses the technology in a different way, which directly benefits *his* needs. Not in the first place to use ICTs for other educational or professional purposes, which the included considers more important or beneficial and which might lead to inclusion in the job market eventually, but merely for informal purposes. For instance, the cases of a mother who accesses a website of a TV program to download a recipe and a boy searching for information about his favourite football team explain why many only visit the Telecentros for accessing the chat rooms or social networking sites.

with the core members of Puraqué she no longer frequently participates. “Since the project has moved to the other end of the city, it has become very difficult for me to continue visiting the project. Due to my job I have very little time left, and in order to get there I need to take two buses. This takes very much time and, besides that, it is very expensive”, she explained. Instead, she uses her spare time to study in order to prepare herself for the *vestibular*, which is a concourse in order to pass for the state universities, for the course Computer Networks. “It is a very difficult and competitive exam, though the public universities are the best. And also, I simply do not have the means to pay for a private university, as they are really expensive”.

Although she has left the project, for Jose Puraqué is still very much alive. She told me very proudly that she has been asked to give a workshop for the members of the dwellers association of a community a couple of hours away from Santarém. “Instead of approaching Puraqué”, she said, “they had thought of me and invited me to visit the community”. This really flattered her. When I asked her whether she thought she would be capable of doing that on her own she very confidently assured me that she was. “If they would ask me something of which I would not know the answer, I will just look it up or would try to find out the answer together with the participants. That is the best way to find solutions to problems, right?”

Her knowledge of informatics has brought her several opportunities. She has a nice job where she can access fast Internet whenever she wants and has several other offers besides her work. The week before I left Santarém, I met her again at a neighbourhood party and she told me that she had opened her own cybercafé. For now she is still hiring the place, which is equipped with twelve machines that run Windows and the necessary desks and chairs. However, she plans on buying the entire furniture and moving it to a neighbourhood that still lacks an Infocentro. “In our new place I want to install Linux on the computers and offer several courses and different activities related to ICTs, similar to what I have done at Puraqué. People have told me that I would make more money opening a regular cybercafé with pirate versions of Windows, but I refuse to do that! I want to do something that is important in that neighbourhood”.

Until today Jose's family has no computer at home, though her father wants to purchase one any time soon. “How I regret it that I have never taken seriously the puraquean@s when they said to us that the one who would be able to construct his own computer could take it home. I have built so many computers there”, she joked. “But on the other hand”, she continued, “I have access to the Internet everyday at work. And now that I have opened my own Cybercafé, I might be able to buy one myself”.

4.4.2 Jessica

Jessica told me how afraid she was when she had to switch on a computer for the first time. “I was a very shy girl! I never, for example, would have talked to you like I am doing now, because I would have felt too big a distance between us.” When one day Jose's mother gave her a flyer about Puraqué's activities she got curious about it. She asked her mother if she could go with Jose to follow the same course but her mother said she was too young and did not have an *RG* (the brazilian identity card). “When I kept on nagging, finally, my mom let me visit the project”, she said. “And now I am even studying at the federal university, and I am teaching! I work with what I like and I even have free and fast Internet every day.”

I asked her whether her parents have supported her in what she did. She told me that they have always been very supportive, though that they were not very enthusiastic when she chose to study Informational Systems. “When I passed through the *vestibular* exams they had rather seen me studying Law, or Medicine, as that would guarantee me a job and a good salary”. But she explains that she would not be happy working in that area. “Working with informatics is what I like most!” Now her parents understand and even see the advantages of it. For instance, they ask her advice and help if any electronic device is out of order or not working well. “Everyone in my family has difficulties with all electronic devices! Even the DVD recorder, you know. So now they always ask me when they have some doubt or problem with technology. Because, when you know how a computer works, you can mess with any electronic device.”

However, when she was a teenager her parents also complained at times, as she usually spent more time at Puraqué than at home. “Puraqué was like my second home. I went there everyday after school, and even on Saturdays, to do workshops and watch lectures on, for instance, environmental issues. My parents used to tell me that I should not work so hard. They complained that Puraqué was taking advantage of me, because I didn't get paid and get back anything in return. But the experience was worth everything”. She was working with something she actually liked and learning all these things she considered more valuable than money.

A concrete example of that is, for instance, the facility with which she has passed the *vestibular* exams. These are known as being very difficult and competitive, though she passed in one of the first places. Also, during a subject on algorithms she already knew everything, different than her colleague students. “When I was studying at high school my ICT skills really helped me doing my schoolwork. As one of the few students I knew how to use the Internet to investigate and learn things. It really increased my knowledge. I taught my friends how to use the Internet, and the ctrl+s, ctrl+v and ctrl+z combinations. And always when people have some trouble using ICTs they asked me. At my high school they used FLOSS, but no one really

knew how to use it. Even my teacher sometimes had to ask me.”

What struck me when talking to her was a comment by someone else that was listening to our conversation. She told about a trip she wanted to make and the man asked whether her boyfriend would let her go alone on this trip. She then said: “Oh why not? My boyfriend is very modern.” Letting your girlfriend go on a trip by herself is not very common, as most men are very jealous and protective. She considered her boyfriend modern, as he did not seem to care so much about her being independent and travelling on her own. Although only eighteen years old, seemingly she has chosen someone who gives her enough space to develop herself and to do whatever she wants to.

Since three months Jessica works in the same Infocentro as Jose. She stresses that the Puraqué experience and learning how to work with low-tech DIY technology stimulates people professionally. “We can work in this field, as I am currently doing, and we learn to be actual IT professionals. It opens broad possibilities for a good job, and a career!”

Spreading the ideology: the Puraqué parasite

The puraquean@ methodology beyond its physical boundaries

Puraqué has been a major driving force in the articulation to and the establishment of partnerships with several projects. This allows them to maintain the project without any significant or fixed income. That is, they all work voluntarily and depend on donations of used technology by the private or public sector in order to continue their projects. Also, via calls for project proposals by public institutions they here and there generate a subsidy. However, as these donations and subsidies are one-off or temporary, a lack of resources would hamper their activities. Therefore, they seek top-down projects that are sustainable (especially the public schools) or have financial resources (such as Navegapará or other projects by the federal government²¹), and *hack* them in order to disseminate their methodology and ideology. What is maintained is not the project, but their methodology. Thus, the physical boundaries of Puraqué dissolve, but their methodology extends pervasively.

Over the last couple of years the team of Puraqué consisted of about fifty people. Lately, the core group found the majority of the participants jobs in the field of digital inclusion, most of them as monitors in the Infocentros, and others in various local initiatives, like Casa Brasil and

21 The “Electronic Government Service for Citizen Attendance” is a project by the Ministry of Communications and the private sector in order to provide distant communities with satellite or broadband Internet connections.

the Pontão de Cultura de Tapajós. These other digital inclusion program throughout the region usually consist of a three months course on the basics of informatics (an introduction to Ubuntu, Openoffice – word processor, spread sheets and presentation slides – and the Internet) and, though usually rather limited, some time for free usage. The *puraquean@s* who get to work in these projects obviously have a profound knowledge of technology, as they have learned the principles of programming through using FLOSS, done a lot of metareciclagem and have gone through an intensive learning process during all these years they spent at Puraqué. This allows them to implement the *puraquean@* methodology into their activities: the rather profound discourse on open source technology, e-waste, and using ICTs as a tool to increase critical knowledge. Different than monitors in these projects who have, for instance, completed a private course on ICTs, the *puraquean@s* tend to maintain the socio-political discourse. For instance, they include several additional activities within the basics of informatics course. They also try to give the participants a little more room to discover and develop things by themselves, thus stimulating their curiosity, creativity and inventiveness.

In this way, Puraqué both assures these people a job and an income and the expansion of their ideology and methodology throughout the region. In the following sections I will further demonstrate this by describing Jessica and Jose's Infocentro and Rogerio's classes at Casa Brasil as two spaces in which the *puraquean@* methodology is disseminated outside the physical boundaries of the project.

3.1.1 Jessica's and Jose's Infocentro

Ex-*puraquean@s* Jessica and Jose are both monitors in the Infocentro located in Aeroporto Velho, which is inside the building of the neighbourhood association. The space is equipped with thirteen PCs, so that is also the maximum number of participants of a course. Classes are either three times a week (Monday-Wednesday-Friday) one hour, or two times a week (Tuesday-Thursday) 1,5 hour. In total, fifteen to sixteen different groups are taking the course at the same time, which means that during one course of three months about 200 people are enrolled. After completion of the Navegapará course the participant will receive a certificate.

Potential monitors need to participate in a workshop of a couple of days in order to become a monitor in the Infocentros. The program requires them to have a basic knowledge of Linux, usage of a PC and the Internet in general, and on the content of the course which they are supposed to teach. Jessica told me that those that have never joined Puraqué are not very likely to know Linux. Windows is still the standard operating system for those that learn the basics of informatics at a private course or at private schools. As it was Puraqué that introduced FLOSS in the region—at the time nobody new what it was—others usually have difficulties using Linux. Therefore, *puraquean@s* certainly are a step ahead and have a

broader knowledge. As Jose and Jessica have participated in the activities at Puraqué for many years, they already complied with most of these requirements, and a short explanation of the content of the course and a couple of rules that they needed to follow was sufficient.

I asked them whether there is a difference between them, ex-puraquean@s, and the “regular” monitors. Jose said that the difference is not very big, as they have to follow a similar structure. But then Jessica added that they are more critical. “If we do not agree with some of the rules, we change them”. That is, within the fixed framework that is imposed by the existing program through the structure of the course, which predetermines the topics and assignments of each class, they tend to give the course a different flavour. For instance, they disagree with the sequence of the classes. The Internet is supposed to be the subject of the last classes, but they think it is fundamental to start with a couple of classes on the Internet. For instance, during a class about the use of a word processor, I noticed a girl downloading music while she was working on her assignment. While some teachers would disapprove this type of activities, Jessica said that she thinks it is important to let them discover these kinds of activities. For the girl, the Infocentro is the only place in the city where she has access to fast Internet, and thus the only opportunity to download music. Through using the time she spends in class to download music, she learns new things and simultaneously takes advantage of the connection to download her favourite songs. Also, Jessica and Jose let the people use the Internet freely in the last ten or fifteen minutes of each class in order to explore different sites, or do some necessary things for which they would otherwise not have time. Furthermore, in order to combine different subjects within one class, they let the participants do an image search online during the class about presentation slides, or a text from a website of their choice in the class about word processing. If they had left the class about Internet until the end of the course, users would not be encouraged to use the Internet for these ends.

According to Jessica, the course is not complete. “Many important, perhaps fundamental, things are missing. I want to show them more than how to use a word processor, spreadsheets and Google. Therefore, I am planning on giving graphic design classes using Gimp and Inkscape, or to implement these programs within the existing courses.” Also, in the past, they have already offered a course on the creation of blogs and another solely on Internet usage. Thus, they tend to give an extra dimension to the “basic” activities in the Infocentro, and allow the users to engage more profoundly with the ICTs.

The general atmosphere in the Infocentro is friendly, relaxed and the women guarantee a healthy dose of humour. There is a discourse going on in this place. They give people a certain freedom in which they can decide what to do, and can choose how access to ICTs can be meaningful for them, as demonstrated by the girl who was downloading her music during class. Jose mentioned that a certain freedom is necessary. “Every user is different, and not necessarily needs the same treatment. It is important that each Infocentro has its own

characteristic, that they all differ a bit from one another”. Jessica and Jose joke with the people and make them feel very comfortable. This is fundamental and makes the Infocentro a reference point in the neighbourhood.

3.1.2 Rogerio

A very special person I met at Casa Brasil is Rogerio. Casa Brasil is a project by the Federal government that aims at the implementation of computers and connectivity in order to provide marginalized communities access to open source technologies combined with culture, art, entertainment, community articulation and participation²². Rogerio has been teaching the basics of informatics and advanced informatics classes ever since Casa Brasil opened two years ago. He is one of the ex-puraquean@s for whom they found a job in the field, and has always stuck to the participatory methodology in his courses at Casa Brasil. The problem, however, is that many people quit Casa Brasil when they finish the basic course. Rogerio explains that of the students in his classes, usually just a few people continue studying and developing their skills. “I try to improve this number by motivating my students and inviting them to come volunteering after the first course. Thus, these people, usually kids or teenagers, remain frequenting the project and become involved in other activities”, he said. “Because, in fact the main objective of Puraqué is not to train these people in order to become ICT experts, or that they will work with digital inclusion eventually. The major goal of offering these people a voluntary job is to get them off the street, the violence, and the drugs. What is important is that we give them an occupation”. He stresses, though, that some of these volunteers stay but that for others it does not work out. “Some expect something different, such as remuneration, or other benefits, and fail to recognise how knowledge actually is a very valuable exchange. That is a shame, but we have to strive for the best. Each person who will eventually stay is an achievement”.

Rogerio and I discussed the fact that many of the participants of the basic courses throughout the region merely seem to be interested in obtaining an IT certificate. He said that he shares this concern with me, though he tends to have open and extensive conversations with the participants about that. “We talk a lot about the purpose to find a mere job. Unfortunately, making money seems to be the objective of most people, and a certificate that proves basic knowledge of ICTs is required. Because here in Santarém you simply need to have a course on the basics of informatics in order to find a job, any simple job! So, during the course I tend to convince them that a job, however, should not be the main objective. I always tell them that it *isn't* about getting a job, and making money. Because, at one point, a job will become scarce. *Work*, on the other hand, there will always be.” Thus, he encourages them to develop skills

22 “O que é Casa Brasil?” Retrieved from http://www.casabrasil.gov.br/index.php?option=com_content&task=view&id=275&Itemid=74 on 11/05/2010

with which they can do several things, and maintain themselves. They have to develop their talents, instead of focusing on a certificate, as the latter will eventually lose its value.

Proudly he told me a success story about two guys that had once taken the course. Although they left, they seemed to have understood his message. “One day they returned to me and told me that they wanted to open their own cybercafé. The fact that they *believed* that they were able to do this, instead of accepting any simple job, made me really happy. Because I think these are results we strive for.”

Rogério's classes actually go *beyond* learning how to use software and access the Internet. For instance, the PCs they use during the course are really old, and students usually are irritated by the fact that they are really slow, and often freeze. “I always try to have a conversation about this”, he explained. “For instance, when the PCs are used every day, in the morning, afternoon *and* evening, *each day* of the week, I explain the that they heat too much, and therefore freeze sometimes. Once they understand this, they seem to have more patience”. He also encourages them to recognize and identify problems and to think of possible solutions. In the metareciclagem class, then, they can actually apply this knowledge in a practical manner. Furthermore, he invites those students that are really participatory for the monthly maintenance of the PCs in his classroom, where they help opening up the computers in order to clean them. Thus, he creates an understanding with his students, and triggers their curiosity to find solutions for these problems. Eventually, he hopes that this helps in convincing them to participate in other courses and develop their IT skills in the future.

Only when he was 22 years old, his family moved to Santarém and he started *ensino medio*²³. Simultaneously, he has always sought to develop his ICT skills, by way of participating in an IT course and, subsequently, at Puraqué. When reflecting on his years at Puraqué, he assures me that his life has completely chanced. “I found out what I really like, and what is important and relevant in life. In fact”, he said, “Puraqué changed my mentality, my life philosophy.” Today he is enjoying his work very much, and actually tries to pass his knowledge and philosophy onto his students, hoping to have a similar impact on their lives as Puraqué has had on his.

While articulation to these projects allows their methodology to spread throughout the region, simultaneously the “effect” seems to weaken. In the Infocentros the monitors have to operate in a certain framework, a fixed pattern. They have a certain liberty that is limited by a certain structure in which their activities have to fit. That means that there is less space for discussions and extra activities and less freedom to decide what to do with technology. While Jessica and Jose try to implement and add certain elements besides the course that is developed by Navegapará, the main activities in the Infocentro remain those that are

23 Similar to high school in Brazil, usually from 15 to 17 years.

predetermined by the course. Also, the Navegapar program deliberately occupies the major part of the day with the course, so that there is little space for free Internet usage. They want to prevent visitors from using Orkut, MSN and video games and instead occupy them with “more useful” activities²⁴. Thus, users have significantly less choice regarding personal appropriation of ICTs. Furthermore, as the major time is occupied with the classes, users will lack sufficient space to develop their skills to a higher level. While this course teaches people basic knowledge about ICTs, and offers them a handle on open source technology and the advantages and possibilities, the Infocentro fails to provide those that grasp this idea the chance to further develop it.

Digital inclusion

It is important to rethink what it means to be digitally included. Digital inclusion is not a dichotomous distinction between having and not having access to ICTs. Instead, amongst those that have access there exists a certain hierarchy of digital inclusion, which varies from simply *having access* to ICTs to *meaningful digital inclusion* as a state of being that socially enhances the particular user²⁵. I would like to question here what *meaningful* means, and to whom this applies.

The basic courses in the Infocentros *digitally include* the users. The user gets an idea of the structure of Ubuntu, learns how to use Openoffice (word processor, spread sheets, slide shows) and the Internet. At best, the user understands the difference between proprietary software and FLOSS. It benefits the particular user as it enhances his or her self-esteem. It provides knowledge of the usage of ICTs (especially Linux), and it increases his chances on the job market. Furthermore, free usage of ICTs certainly changes something for a user. When free access to the Internet is permitted, most computers are occupied and users check their Orkut profiles, view photos and leave *scraps* (short messages on each other's profile). Another very common activity is watching music videos on Youtube and playing games, activities that in a way enforce the cultural bonds that hold them together as a people²⁶.

However, the above revolves around the question *who benefits from digital inclusion?* To what extent are these people actually encouraged to develop and use their creativity? How much space do they have to decide what they want to do with ICTs? While Navegapar says it aims at community “empowerment”, this course simply trains people in order to fulfil a passive and non-critical role as an employee or consumer. While “empowerment” connotes a form of

24 Digital Inclusion Report by Navegapar, Secretary of Education

25 See: Selwyn, N., “Reconsidering Political and Popular understandings of the Digital Divide”, in: *New Media and Society*. Vol. 6, 2004, pp. 341-362, p 341

26 See: Weiss, B., *Sweet Dreams and Hip Hop Barbershops, Global fantasy in Urban Tanzania*, Indiana University Press, 2008, and Vasconcelos, 2006. Popular cultural expression enforces cultural bonds and the perception of their place in the world.

emancipation, an enhanced self-esteem or autonomy, most of the people enrolled in the courses are really shy and insecure. They fail to show faith in themselves as individuals and in society. When I tried to talk with them during the courses in order to ask them about their experiences, their objectives, and what they like most, they hardly answer my questions. Even less do they look at me when they briefly respond, pretending that they are busy with their assignment. They seem too shy to speak to me, or afraid that the monitor will give them an earful. When they obtain the certificate and find a job, who exactly benefits from digital inclusion in this way? What will a job bring them besides a salary that is usually very low? In other words, in *what* actually are these users included? Arguably, the formation of these people functions in the service of the government and the market, aiming at quick (economical) development throughout the region. Digital inclusion, then, becomes economical rather than social or political.

Appropriating Technology

Although the methodology tends to go *beyond* digital inclusion, many fail to grasp the idea of using ICTs as a tool to achieve social enhancement and autonomy. The basics of informatics course fails to go beyond *digital inclusion* and in fact digitally includes many users in a short period and on a very large scale. Although there is some input from the bottom, the major structure of the program is top-down. What is done is providing *access* to ICTs. However, a rather intensive involvement with ICTs could lead *beyond* digital inclusion, which allows the *appropriation of technology* in order to achieve social transformation. Pointing at Puraqué, the principal aim there is not to *digitally include* people, but to encourage people to use the technology as a *tool for social inclusion*. Instead of “being forced to” learn how to write an application letter using a word processor, a particular user can choose take part in the multi-media course and thus might realize that he *is* able to go after his dream to become, say, a movie producer. Through the discourse *around* ICTs, which includes several social, political and environmental issues, the participants will increase their knowledge about these issues. In fact, when aiming at empowerment digital inclusion is a paradoxical term. Whether considered “meaningful” or not, the term already indicates a *passive* subject that is *included* by an dominant force while appropriating technology departs from an *active subject who is allowed to appropriate technology in a manner that benefits him*.

I have seen several people undergoing a social transformation, by way of appropriating technology in a personal manner, as many of them actually become critical citizens that are politically and socially engaged. Jessica and Jose realized that they can do all kinds of fun things with ICTs, something which they had always considered only available for the rich. In fact, they have undergone not only a social transformation, but a *professional* transformation as well, as they have developed extensive knowledge about several technological and social

topics, such as programming, technical support and maintenance, open source and collaborative technology and e-waste. Today the women use their knowledge in order to achieve interesting jobs in their field, to study at the state university and, as Jose has recently shown, to start their own businesses. These women were stimulated to pursue their *dreams* and to do something they really wanted, instead of accepting any job that would ensure them an income or marrying, having kids and taking care of the family. Perhaps it was not as much the ICTs in itself, or the ICTs as a tool for socio-political enhancement, but instead a playful manner for increasing knowledge. This playful way to develop a certain discourse about their social reality and things that matter to them might have triggered their sense of being *someone*, their courage to dream, and the confidence that they can realize these dreams.

In Santarém, the people have shown the several manners in which they embed ICTs in their local culture, and how they are capable of ascribing a significant role to ICTs in their day-to-day lives. What is an important dimension in Puraqué's activities is their attempt to enhance people's self-esteem through a profound and intensive process of learning how to use open source technologies and to obtain extensive knowledge about them. Whether this will eventually transform their region into a reference for the development open source technologies is a question I will leave unanswered. However, I can say that this knowledge has a transformational impact on people's lives. And knowledge is something that cannot be taken away.

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