

UNIVERSITY OF MILAN-BICOCCA
QUA_SI Project
“Quality of Life in the Information Society” PhD Course

TRACING BACK COMMUNITIES

An analysis of Ars Electronica’s Digital Communities archive from an ANT perspective

Tutor: Prof. Guido Martinotti
Department of Sociology and Social
Research

PhD Thesis by:
Dr. Annalisa PELIZZA



This work is licensed under the Creative Commons Attribution-Noncommercial-Share Alike 3.0 Unported License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/3.0/> or send a letter to Creative Commons, 171 Second Street, Suite 300, San Francisco, California, 94105, USA.

Come insegna la Formica, ringraziare tutt* coloro che hanno partecipato al corso d'azione che ha portato a questo lavoro potrebbe essere visto come un riassunto stringatissimo di tutte le pagine che seguono.

Presso il corso di dottorato QUA_SI dell'Università di Milano-Bicocca ringrazio Elisa Ribaudò, Carmela Torelli e Valerio Minetti. Davide Diamantini e Guido Martinotti mi hanno aiutata a sviluppare una conoscenza di nuovi metodi di ricerca presso la Essex Summer School in Data Analysis and Collection e di questo li ringrazio. Tommaso Venturini è stato un compagno non solo a Milano, ma fin dai tempi dell'Università di Bologna: i suoi consigli lucidi (e ludici) sulla gestione di ampi corpora qualitativi sono stati un momento di leggerezza in mezzo a tanti dubbi.

Desidero ringraziare Giovanni Grazia per i suggerimenti sugli emulatori di pc.

Ringrazio Neil Hartley @ Leximancer per avermi messo a disposizione una versione full trial del loro software per scopi di ricerca.

Grazie al team del Digital Future Report dell'Annenberg School Center for the Digital Future, University of Southern California per avermi gentilmente fornito copia del loro Report 2007.

Grazie ad Anne Balsamo (USC) e David Theo Goldberg (UCI) per avermi ammessa e supportata al Seminar in Experimental Critical Theory 'technoSpheres: FutureS of Thinking' (2006) presso lo Human Research Institute, University California Irvine. E' stata, questa, un'occasione straordinaria per allargare il raggio della mia riflessione, e spero che queste pagine ne portino traccia.

Ringrazio Tatiana Bazzichelli e Antonio Caronia per l'interesse immediato e il coinvolgimento nell'AHA Camping e la mailing list AHA con cui ho avuto una prima occasione di confronto pubblico sui fondamenti teorici di questo lavoro.

Ringrazio anche il circuito globale Transmission.cc per avermi accolta – seppur non techie – al meeting presso il Forte Prenestino (Roma) nella primavera 2006 e per gli straordinari stimoli che ho ricevuto in quell'occasione. Grazie soprattutto ad Agnese Trocchi, Andrew Lowenthal e Andy Nicholson.

Vorrei ringraziare poi Daniela Panosetti per la disponibilità al confronto in una materia non propria e Francesco Mazzuchelli per l'aiuto prezioso nel momento della 'diplomazia informatica'.

Un ringraziamento particolare va allo staff di Ars Electronica e ai ricercatori del Boltzmann Institute Media.Art.Research. di Linz per l'interesse che hanno dimostrato verso questo lavoro fin dai suoi primi vagiti. In

particolare, Gabriela Blome, Dieter Daniels, Katja Kwastek, Bianca Petscher. Un ringraziamento di cuore ad Andreas Hirsch e a Ingrid Fischer-Schreiber per la sua capacità unica di coniugare professionalità e spirito zen.

Chi avrà la pazienza di leggere queste pagine fino alla fine vedrà come l'eterogeneità dei soggetti coinvolti sia motivo di valore nella valutazione dei resoconti testuali. E questi ringraziamenti non sono da meno.

Ci sono reti lunghe che hanno poche occasioni per rinsaldarsi, ma non sono fatte di legami deboli e continuano a far sentire la loro presenza, soprattutto se fatte di donne: in questa tesi c'è anche qualcosa di Roberta Buiani, Monica Fagioli, Ilenia Rosteghin e Sara Zambotti.

Un caro ringraziamento va a Silvia Pagnotta, Francesca Paron e Giancarlo 'Ambrogio' Vitali per l'amicizia nella solidarietà.

Non posso poi mancare di esprimere la mia più grande riconoscenza verso il circuito Telestreet, dove ho sviluppato le prime riflessioni e i primi dolorosi dubbi che hanno trovato (parziale) risposta in questo lavoro.

Infine, un grazie alle reti più corte: coloro che hanno condiviso emotivamente questi lavori. A Cesarina, Gino, Giuseppe e Mercedes, per le radici ben piantate. A Michela, che c'è sempre stata al momento giusto e nel modo giusto. A Giorgia, per la sua potenza nell'affrontare sfide che hanno il solo merito di avere retrocesso le mie a placido cabotaggio. A Ciro, con cui ho attraversato queste praterie: oggi siamo in due a 'diventar dottori'. Ad Antonio e Anna, per avermi accompagnata fin qui con la loro grande energia: perché l'amore è la miglior ginnastica correttiva. A quell'assemblaggio di elementi reali e potenziali che può essere definito 'me stessa', perché ha impastato i contributi di molti e molte con il lievito della curiosità.

Contents

INTRODUCTION	1
---------------------	----------

CHAPTER 1 CYBERCULTURE(S) AT A CROSSROADS	12
--	-----------

1.1 CONVERGING CULTURES	12
1.1.1 AT THE BEGINNING THERE WAS THE WELL	12
1.1.2 1980S' INTERNET IMAGINAIRE AND THE ATTEMPTS TO CLASSIFY EARLY VIRTUAL COMMUNITIES	24
1.1.2.1 Flichy's classification of online communities	29
1.1.3 THE NETWORK IS THE MESSAGE: NETWORKING AS A FORM OF ART AND THE MAILING LIST CULTURE OF THE 1990S	32
1.1.4 MEDIACIVISM AND THE EARLY WEB PLATFORMS FOR OPEN PUBLISHING	38
1.2 FROM THE PRAIRIE TO THE BATTLEFIELD	40
1.2.1 THE DOTCOM BURST AND THE CRISIS OF THE CREATIVES-INTERNET ENTREPRENEURS COALITION	41
1.2.2 THE TERRITORIALIZATION OF THE NET	45
1.2.3 A SECOND GENERATION OF WEB? WEB 2.0, THE RENAISSANCE OF COMMUNITY ON THE NET AND THE QUEST FOR VALUE CREATION	48
1.3 IN SEARCH OF COMMUNITY	63
1.3.1 FROM GROUPS TO NETWORKS	64
1.3.2 TOWARDS ORGANIZED NETWORKS	72
1.4 THE TAKING OVER OF COMMUNITY	78

CHAPTER 2 AN OPEN METHOD FOR FUZZY OBJECTS	83
---	-----------

2.1 ASKING FAIR QUESTIONS. RESEARCH OBJECTIVES	83
2.2 INTERROGATING FUZZY OBJECTS. A BOTTOM-UP EPISTEMOLOGY FOR EPHEMERAL ASSEMBLAGES	86
2.2.1 'PLATONIC' VS 'WITTGENSTEINIAN' METHODS OF CLASSIFICATION	93
2.2.2 SELECTION OF THE SAMPLE. ARS ELECTRONICA'S DIGITAL COMMUNITIES	97
2.2.2 COMPETITION AS SPACE OF CONTROVERSY	97
2.3 TECHNIQUES OF DATA COLLECTION	100
2.4 TECHNIQUES OF DATA ANALYSIS	102
2.4.1 FROM THE MAIN OBJECTIVE TO ANALYTICAL TASKS	103
2.4.2 CHOICE OF THE SOFTWARE	105
2.5 TASK 1: PROFILING COMMUNITY	108
2.6 TASK 2: EXTRACTING THEMES	115
2.7 TASK 3: MAPPING THEORIES OF ACTION	121

CHAPTER 3 ARS ELECTRONICA BETWEEN THE 'INDUSTRIAL AGE' AND THE 'INFORMATION SOCIETY'	125
---	------------

3.1 ARS ELECTRONICA AS A LEADING NETWORKED ORGANIZATION IN MEDIA ART AND DIGITAL CULTURE	125
---	------------

3.1.1 LINZ'S IDENTITY FROM STEEL CAPITAL TO DIGITAL CULTURE DISTRICT-----	126
3.1.2 ARS ELECTRONICA'S FOUR PILLARS-----	132
3.2 THE PRIX ARS ELECTRONICA: FROM EARLY COMPUTER ANIMATION TO THE 'DIGITAL COMMUNITIES' CATEGORY -----	139
3.2.1 THE 'DIGITAL COMMUNITIES' CATEGORY AS A FORUM FOR SOCIO-POLITICAL EMERGENCE -----	144
3.2.1.1 The origins of the 'Digital Community' category -----	146
3.2.1.2 From the submission process to the preliminary evaluation -----	148
3.2.1.3 The jury process-----	150

CHAPTER 4 RESULTS AND DISCUSSION ----- 155

4.1 THE REMAINS OF THE COMMUNITY -----	155
4.1.1 AN EARLY DEFINITION FOR ONLINE COMMUNITY -----	155
4.1.2 LOOKING AT THE MAP-----	157
4.1.2.1 Relationships between Concepts-----	161
4.1.3 BOOLEAN SEARCHES. GROUPS, NETWORKS OR BOTH? -----	163
4.2 FROM CONCEPTS TO NARRATIVES -----	165
4.2.1 DIGGING DEEP INTO CLUSTERS-----	165
4.2.2 COMPARING NARRATIVES -----	176
4.2.2.1 Social software as mediator or intermediary-----	176
4.2.2.2 Different technologies for different territories -----	179
4.2.2.3 Knowledge labour between sustainability and gift economy -----	182
4.2.2.4 'Public media art' as politics -----	185
4.3 OBSERVING DIGITAL COMMUNITIES: A PROLIFERATION OF MEDIATORS -----	188
4.3.1 TONGA.ONLINE. OR OF RIVERS, DAMS, ANTELOPE HORNS AND DIGITAL MUSIC -	190
4.3.2 ICT AND DEVELOPING COUNTRIES: EMPOWERMENT AS A CAUSE-AND-EFFECT RELATIONSHIP -----	193
4.3.3 'FREE' AS IN 'FREEDOM TO PROLIFERATE': WHEN DIGITAL COMMUNITY BECOMES MOVEMENT -----	203
4.3.4 THE WEB AS MEDIATOR. WEB 2.0 TOOLS AND USER-GENERATED-CONTENTS---	212
4.4 TOWARDS A CLASSIFICATION OF DIGITAL COMMUNITIES-----	217

CHAPTER 5 CONCLUSIONS AND FURTHER DEVELOPMENTS ----- 240

APPENDIX ----- 252

LIST OF BOXES -----	252
LIST OF DOCUMENTS -----	252
LIST OF FIGURES-----	253
LIST OF TABLES-----	254
MATERIAL RELATED TO CHAPTER 2 -----	255
MATERIAL RELATED TO CHAPTER 3 -----	261
MATERIAL RELATED TO CHAPTER 4 -----	262

REFERENCES----- 283

WEB RESOURCES----- 299

Introduction

‘Why another research on digital communities in late 2000s?’. This is the first question I asked myself when I started thinking about the research I am going to present here. The main reason could be summed up with another question: can we be reasonably sure that when we talk about ‘digital communities’ we are all referring to the same thing?

Digital communities as a strategic subject at the end of 2000s

This research investigates the conditions under which at the end of 2000s it might be possible to talk of communal ties on the Internet. Starting from the acknowledgement of a semantic expropriation, it tries to trace the remains of the digital community after the Dotcom burst, the War on Terror with its increasingly intrusive law on privacy, and the consolidation of the ‘Web 2.0’ wave. Far from being ill-timed, investigating online communities is even more strategic today, since after the Dotcom burst and 9/11, on one hand, and the explosive renaissance of community with social networking applications, on the other hand, the culture of the ‘digital communitarians’ seems to have either lost autonomy in favour of giant Internet companies and governments (Goldsmith and Wu 2006) or been popularized and absorbed into the ‘Web 2.0’ hype (Jenkins 2006). Tracing back the elements that have been contributing to the formation of online communities in the last years is thus a way to investigate not only the evolution of communal ties online, but also some future directions that will be taken by the Net in the next time.

Until the end of 1990s, recovering the experiences that marked the birth and the development of the digital communitarian culture was relatively straightforward. From cold-war academic research with its decentralized logics provided by cybernetics, to early civic networks that introduced the vision of information technology as an instrument to be made widely accessible to anyone; from Rheingold’s description of the virtual life in the WELL that has coded the counter culture’s communitarian legacy into the cyber *imaginaire*, to underground lists like *Nettime*; from early hackers’ BBSs of the 1970s and 1980s, to FLOSS communities which brought with them an

organizational system based on reputation capital; from net art's focus on the aesthetic of interaction, to *Indymedia* which saw the global movement for social justice meeting media artists. Up to the end of 1990s, all these diverse cultures have partly overlapped and contributed elements to the techno-libertarian communitarian culture.

Conversely, in 2000s multiple domains of activity have been 'taking over' the notion of digital community, so that its boundaries have become fuzzy. Today, in much diverse fields of activity online communities are recognized as key social aggregates. While 'cyber-communities' have disappeared from the top of the digital culture's hot concepts list, articles about 'social networking sites' colonize high-tech magazines' columns, 'communities of practice' constitute the backbone of corporate knowledge management policies, while almost every Internet marketer invokes participation through 'Web 2.0' tools as a strategic component adding value to Internet companies' investments.

To understand the origins of this shift in meaning one needs first to recognize how the anarchic prairie that the Internet was has turned into a battlefield. With respect to the past, today it is clear that many of the utopias that underpinned the digital revolution have revealed their naivety, if not complicity with the current neo-liberalist order (Turner 2006). At the end of 2000s, the neo-anarchic, libertarian cyberculture that had been nurturing the virtual communitarian utopia of a bottom-up digital infrastructure as a major channel for the liberation of individuals, the enforcement of democracy and social justice, the proliferation of critical communities or simply the creation of supportive ties on the Net has come to a crossroads.

According to Carlo Formenti, in the last years the free Internet communitarian culture have had to face three major threats: the massive commercial expansion of Internet companies, the increasingly strict law on intellectual property and the proliferation of 'dataveillance' technologies related to the 'War on Terror' (Formenti 2005). From another perspective, *Nettime's* moderator Felix Stalder highlights the distinction between the ethics of collaboration inherited from the free software movement and community-making: 'by now it is clear that something more than simple collaboration is needed in order to create community' (Bazzichelli 2006b). While awareness about the use ICT for collaborative production of knowledge has reached a great amount of people, according to Stalder it now seems that the aim of collaboration has shifted from community-making towards purpose-specific projects. A similar awareness characterizes also those activist and artistic networks that recently undertook a reflection on the

state-of-the-art of forms of digital aggregation and tried to re-focus the scope of online communities, notably questioning the innovative potential of social networking platforms (Networked Politics 2007).

The crisis of foundational myths

As a matter of fact, from the end of 1990s to mid 2000s three of the main libertarian myths based on the cybernetic vision of information technology as the source of a second industrial revolution bearing the promise of emancipation for the citizenry had to face counter-evidence.

First, the libertarian credo according to which Internet is intrinsically ungovernable and out of control has turned out to be an illusion. In spite of declarations of independence, geography does matter. Many authors have focused on post-9/11 architectures of social sorting, backed by the rule of law. More recently, in 2006 Stanford's researchers Jack Goldsmith and Tim Wu depicted a more and more controlled and territorialized Internet where the 'Balkanization of the Net' is the result of the teamwork between governments and global Internet companies officially fostering freedom of networking. As a matter of fact, one of the pillars of cyberculture – the possibility to keep the virtual and the brick-and-mortar domains separated – is undeniably cracking.

The second libertarian myth that had to face the new climax of early 2000s is the one associated with the emergence of a creative class whose lifestyle and economic weight could influence the global market as well as political systems. Very differently, the Dotcom burst has ratified the failure of what Carlo Formenti had called the 'Fifth State': an emerging social class whose roots would lie at the convergence of cultural values and economic interests among the social actors that led the digital revolution, on one side, and Internet entrepreneurs, on the other side. If the Net Economy did recover from the burst, the coalition between knowledge workers and Internet companies – that in the meanwhile had become giant corporations – did sink. Today, also the most optimistic observers have to acknowledge that the 'Fifth State' will never recompose.

The third myth that have had to face a reflective stage over the last years is the one asserting that the mere creation of digital commons would empower disadvantaged individuals against big governmental and commercial powers. If the openness of the digital architecture – of code, practices and standards – is a *condicio sine qua non* for the same existence of the Internet as we know it, the question on how a digital commons-driven economy should distribute resources and wealth is still a matter of dispute.

The rapid diffusion of social behaviours and commercial services subsumed under the heading 'Web 2.0' is a perfect example of this. With commercial multi-user platforms and user-generated contents, the rationale behind many independent communities from the 1990s that focused on collaborative knowledge production – from *Indymedia* to *Archive.org*, from *Teletstreet-NGVision* to *OurMedia*, just to quote some examples – seemed to have come to a large-scale realization thanks to the corporate-driven facilities provided by *YouTube*, *MySpace*, *Flickr*, and *Yahoo!*, among others. However, as Lovink (2007) has pointed out, while the 'ideology of the free' has been pushing millions of people to upload their contents on Web 2.0 platforms, there is a endemic lack of models that could foster a distributed and decentralized Internet economy. To the 'cult of the amateur' no consistent redistribution of financial resources corresponds.

These arguments, which will be further discussed in chapter 1, lead us to acknowledge that in mid 2000s some elements that accompanied the birth and the development of the digital community paradigm turned out to be either contradictory or in contrast with the evidence provided by latest developments. After the Dotcom burst, the territorialization of the Net and the advent of Web 2.0 applications brought to light some fractures in what Paul Ricœur would call the 'ideology'¹ of the free Internet culture. These fractures have been promptly described by scholars coming from different scientific disciplines who started wondering whether we can still talk about community on the Internet.

Scholars' reactions to the crisis of the libertarian digital culture

On one hand, by talking about 'network individualism', Manuel Castells and Barry Wellman have called into question the same possibility to identify communitarian assemblages online. According to Wellman, in particular, portability, ubiquitous computing and globalized connectivity are fostering the movement from place-to-place aggregations to person-to-person networks. As a consequence, we do not find community in bounded groups anymore, but rather in loose networks. In a similar way, in Castells' space of flows the

¹ According to Ricœur, utopia and ideology constitute the two extreme poles of the social *imaginaire*. Ideology, in particular, tends to preserve the identity of a given social group while, on the contrary, utopia aims at exploring new possibilities. Therefore, ideology and utopia are involved in a continuous tension between stability and change (Ricœur 1997). This notion of ideology is particular useful when dealing with virtual communities precisely because they started as utopias and now have become something different, as this research is going to argue.

individual is the hub of different kinds of flows that move from the place to the subject and vice versa (Castells 1996; 2001; 2004; Wellman 2001).

On the other hand, humanities have produced some meta-reflections aiming at putting some order among the multiple souls of the digital communitarian culture. For instance, historian Fred Turner has traced back the cultural origins of the American cyberculture movement since the early days of the Free Speech movement. By highlighting some features of that culture embodied by Kevin Kelly, Stuart Brand and the *Wired Magazine*, for instance, Turner has demonstrated how it could happen that representatives of the libertarian digital culture – the so called *digerati* – turned out to support George Gilder's conservative positions and Newt Gingrich's 'Contract with America' (Turner 2006). Sociologist of culture Patrice Flichy, on his side, has called into question the existence of a homogeneous Internet communitarian culture. He identifies three principal *imaginaires* related to the activities carried on by amateurs experimenting with technology. According to the relative weight given from time to time to technology or sociological factors, the French scholar distinguishes between initiatives linked with counter-culture and the hippie movement, hackers stressing the technical performance, ICT community projects originated by civil society (Flichy 2001).

On another hand, even those scholars that are most optimistic towards the renaissance on the Net of ties based on commonality can be so only on condition that the communitarian efforts get rid of the libertarian ideology. For instance, media theorists Geert Lovink and Ned Rossiter re-examine the notion of virtual communities as organized networks and focus on how they reflect society as well as anticipate new forms of social interaction. They conceive of digital communities and social networks as 'osmotic interfaces between the inside and the outside' (Lovink and Rossiter 2005).

Goals of the research and omissions

When one considers the crisis of the cyberculture, the shift in the meaning of the term 'digital community' appears under a clearer light. If the cyberculture paradigm is showing its limits, other paradigms are 'taking over' the notion of community. Many evidences demonstrate that we are witnessing the explosion of the *gemeinschaft* well beyond the domain of sociology and media studies – towards economics and management, as well as beyond academic institutions.

For this reason, it is by no means certain that what is meant by the term 'digital community' in all these domains relates to the same thing: it is not

clear whether there exist ties that are specific enough to be called 'communitarian' and that can be assembled together in making up a special assembly. 'Community' seems to be diluted everywhere and yet it is difficult to describe what it is made of. As a consequence, the same notion of 'digital community' is at stake, as the paradoxical weakness of this concept demonstrates: while communitarian ties enabled by digital media are more and more invoked, the Internet is revealing itself as a much more bureaucratic and profit-oriented domain than ever.

Because of this semantic dilution, a research whose aim is to take a step behind and to shoot the current state-of-the-art of digital communities is much needed. It should not so much look for an extended and up-to-date definition of digital community, but rather liberate the communitarian perspective from many of the misunderstandings that dragged it into such a blind alley and suggest systems of classification based on the rationales which underpin highly assorted experiences.

As a matter of fact, the main consequence of the crisis of the techno-libertarian paradigm is that the supposedly direct correlation between access to digital media and empowerment of individuals and communities cannot be taken for granted anymore. The assumption that lies at the core of the post-Dotcom digital community – that is, the conviction that uploading self-referred information on a multi-interactive digital platform, participating in e-democracy focus groups or even keeping a personal blog updated would empower individuals and communities – needs indeed to be tested. Therefore, this research investigates the diverse theories of self-empowerment that have underpinned the development of computer-mediated social groups in the 2000s.

On the other hand, this research doesn't provide a historical reconstruction of online forms of community, even if diachronic comparison lies at the core of the investigation and literature on how online communities evolved over the different Internet ages is reviewed. I strongly believe that a historical reconstruction should deserve a research work on itself, while this inquiry concerns mainly how social actors involved in online aggregations themselves account for the relationship between technology and society. Furthermore, today many studies that focus on the evolution² of the digital

² The use of the term 'evolution' does not imply by default the idea of a linear time to be represented by an arrow, progressively tending towards the 'optimization' of online communities. This, together with others we shall encounter later on in this work, is an instance of the constraints imposed to thought by a language soaked with the categories of modernity (see Latour 1993).

communitarian culture are available. I will therefore work on these studies as starting points.

The Actor-Network Theory's contribution to the impasses that the scientific research on fuzzy objects must face

The notion of community lies at the very heart of the social sciences and, often by opposition, has been of crucial importance in drawing the types of society brought about by modernity. The evolutionist distinction between *gemeinschaft* and *gesellschaft* by Ferdinand Tönnies, for instance, marked the dichotomy between a pre-modern form of human organization based on emotional will (*Wesenwille*) and a modern society based on rational will (*Kürwille*). Furthermore, an opposition between pre-modern group solidarity Vs. individual inclusion into a modern organizational structure is conveyed also by Émile Durkheim's notion of 'mechanical solidarity'.

Such a strong counter-correlation between the notion of supportive community and the idea of an evolution towards individualized networks persists also in post-modern references to 'community' (Beck 1996; Castells 1996; 1997; 1998; Giddens 1991; Wellman 2001). As a consequence, although it is often used as detached from any consideration about the wider forms of societal organization, also outside academic boundaries the term 'community' kept indicating social assemblages whose elements are maintained together by strong, solidarity-based ties, as opposed to weak, individual-based ties.

However, this dichotomy shows itself to be inadequate when it comes to study fuzzy, ephemeral objects like digital communities. If it is true that traditional types of grouping, like community or class, are relational phenomena taking place among individuals involved in activities of production and reproduction (Castells 1972), it is not equally clear why, from this premise, the conclusion should follow that it is better to look at individuals as the 'true' agents of social change and dismiss class (or group, community, etc.) as a relict of the past. If she wants to logically follow Castells' premise, the researcher should focus on the means whereby groups are assembled, rather than reject those groupings as less 'real' than individuals.³

This is very evident with fleeting digital communities, where duration is an exception and instability is the norm. From the premise that community is a relational phenomenon involving individuals, it is not its abdication in favour

³ Who, by the way, might in turn be seen as assemblages of organs, to remain at the most banal level of considerations.

of individuals that follows, but rather the need for an inquiry on how that assemblage is momentarily kept together.

Moreover, the dilution of the online community into domains that transcend sociology contributes to an 'opacity' of the object of study, a sort of resistance to being 'grasped'. Given the fuzziness of a fleeting object that proliferates in many directions, finding a handle to grasp it thus becomes decisive.

In order to devise a similar handle, in this research I will borrow from Science and Technology Studies⁴ the definition of 'social' as a momentary association between heterogeneous elements (Latour 2005a). The Actor-Network Theory (ANT), in particular, has been elaborated to deal exactly with opaque objects. Following this approach, in order to map the theories of self-empowerment that led the action of digital communities in 2000s, I will set absolutely radical presuppositions: that *gemeinschaft* be not opposed to *gesellschaft*, that the Social be not a stabilized substance, but needs to be re-assembled each time anew, that digital artefacts be endowed with agency, that there be no groupings more legitimate to start an inquiry with than others.

This work argues that if the digital communitarian culture entered a blind alley it is precisely because studies on online aggregates have either addressed the asymmetry between social action and material world or have tried to envision a symmetry between two different types of aggregates, namely 'technology' and 'society', each one made of homogeneous elements. This research, on the contrary, is interested in investigating how heterogeneous entities are woven together in the courses of action sustaining community formation through ICT. And it is exactly the meaning to give to this 'through' that drives this research: I will need to abandon the artificial divide between two supposedly detached 'social' and 'technical' dimensions.

It is thus evident how in this work 'heterogeneity' rhymes with interdisciplinary approach. The elements that intervene in the constitution of digital communitarian assemblages are in fact likely to come from the domains of economy as well as computer science, politics as well as art and media. Only by avoiding the barbed wire between disciplines there are some

⁴ Science and Technology Studies (STS) have emerged in Britain among sociologists inspired by later works by Wittgenstein (Bloor 1976). This research current analyses science and technology 'in action' (Latour 1987) by observing practices of scientific and technological production. These studies have fused together different epistemological traditions, among which there are ethnography, ethnomethodology and semiotics.

chances to trace techno-social innovation. As a consequence, this research will not be shut in the meta-language of specific disciplines, nor it will postulate some theories as starting points. Rather, it will follow a bottom-up method that will ask social actors themselves about their theories of action. Far from being a populist approach, this method will allow me to refrain from the necessity to set definitions and conceptual assumptions a priori: a necessity that would cast me miles away from science and objectivity, as we shall see.

The choice of a language based on everyday words, instead of a highly specialized scientific meta-language, is a consequence of this methodological approach. Notably, in this work I will use the terms 'digital', 'virtual', 'cyber' and 'online' community as synonymous. Similarly, I will use the terms 'group', 'assemblage', 'aggregate' in their most plain meaning indicating a whole composed of heterogeneous elements.⁵

Ars Electronica's Digital Communities archive

As to the data set, in this research I will analyse the entry forms submitted to *Prix Ars Electronica's* Digital Communities competition from 2004 to 2007. As the oldest international competition for digital arts, Linz's *Prix Ars Electronica* attracts a vast array of both well-known and emergent figures who are active at the confluence between art, technology and society, and it is globally recognized as the leading example of networked institution in the digital culture domain. Established in 2004, the Digital Community category is meant to focus on the techno-social innovations fostering empowerment for communities and individuals.

Since this work's scientific requirements prevent it from setting an a priori definition of multi-faceted online communities, this research will take as data source some cases recognized as instances of online community by multiple social actors. Notably, projects participating in *Prix Ars Electronica's* Digital Community competition have been admitted as occurrences of online community by the project representatives, by the International Advisory Board – an intermediate body in charge of nominating and excluding participants – and by the independent jury.

In this research, the *Prix's* Digital Communities competition is seen as a peculiar field of controversy dealing with the acknowledgement of the most innovative practices of online collaboration. The entry forms submitted for the

⁵ The only exception will occur when testing Wellman's theory in paragraphs 1.3.1, 2.5 and 4.1.3. Here, we shall borrow Wellman's vocabulary that opposes 'group' to 'network'.

purpose of an award are conceived of as accounts, that is, handles to grasp fleeting social assemblages. In the submission forms, in fact, social networks are caught in the moment when the people involved decide to freeze an identity out of a transient process of networking. Ars Electronica's competition is thus the place where networks hit representation: it constitutes the moment in an unstable process of social innovation when a spokesperson must emerge and – together with her – self-representations, identity and opponents.

Structure of the work

This work is composed of five chapters. Chapter 1 takes into consideration the role of the libertarian ideology for the Internet communitarian culture from the origins to the end of 1990s (paragraph 1). It then throws light on its aporiai as far as both the socio-economic developments the Net has witnessed over the last eight years and the politics of information are concerned (paragraph 2). Furthermore, chapter 1 discusses the arguments of those authors that have addressed the question on whether it is still possible to talk of communities on the Internet (paragraph 3). After having discussed some of the ideologies linked to the 'social potential' of ICT, I close chapter 1 by making some reflections on the current condition of digital communities in late 2000s (paragraph 4).

Chapter 2 begins by setting the overall goals of this research (paragraph 1). It continues by discussing the epistemological decisions I had to take in order to deal with fuzzy objects, the contributes given by ANT and the choice of the sample (paragraph 2). It then presents the techniques of data collection and data analysis I chose to use, together with a description of the content analysis software used and a further specification of the analytical tasks to be pursued (paragraphs 3 and 4). In the last three paragraphs of the chapter I describe in details the operations I carried on in order to fulfil the three operative tasks that implement the main goal of this research.

In chapter 3 I then introduce the partner institution of this research. I first address Ars Electronica's history and mission. Then, I describe the Prix's organization and jury process, the genesis of the Digital Communities competition and the archive – constituted by over 900 entries submitted from 2004 to 2007.

In chapter 4 I discuss the results of the quali-quantitative content analysis. Paragraph 1 provides a first definition of 'online community' by exploring the elements associated with it as they emerge from all the entry

forms submitted to Prix Ars Electronica's Digital Communities competition. It also verifies a hypothetical counter-argument to Wellman's thesis on weak ties by conducting co-occurrence analysis. Paragraph 2 identifies the relevant themes emerging from the whole data set and traces the possible variations in the conceptual map by year of submission. In addition, it identifies some contrasting narratives related to the most important themes. Finally, in paragraph 3 the qualitative analysis on the winning projects is discussed. After a detailed description of all the projects that won a first or second prize from 2004 to 2007, I draw a map of the different theories of action underpinning those projects, and suggest a system of classification for digital communities. Finally, chapter 5 deals with the conclusions and tries to suggest some further directions of analysis.

Chapter 1

Cyberculture(s) at a Crossroads

*'If there is a decision to be made,
and an enemy to be singled out,
it's the techno-libertarian religion of the "free"
Lovink and Rossiter (2005)*

This chapter recovers some of the experiences that marked the birth and the development of the digital communitarian culture, it highlights some cultural features they contributed to the notion of online community and it reviews some categorizations developed to bring order into highly dispersed and multi-faceted experiences (paragraph 1.1). Notably, the first paragraph argues that many of the 'memes' that characterize the culture of the so called 'digital communitarians' are rooted into the cyberculture, libertarian paradigm. As a consequence, once this paradigm shows its limits (paragraph 1.2), a question arises on whether and how one may keep talking about community on the Net. In paragraph 1.3, we shall try to provide some answers by tackling the positions of some authors that show scepticism as well as of those that are more optimistic, provided that the communitarian perspective be freed from the libertarian paradigm. Finally, in paragraph 1.4 we shall follow the diffusion of the digital community beyond the domain of social movements and social sciences.

1.1 Converging Cultures

1.1.1 At the beginning there was the WELL

Since long before the popularization of the Web in mid 1990s, community-making has been a significant driving force for the development of the Internet. In the history of Usenet, Arpanet and the BBSs, group-making efforts may not be separated from the infrastructural development of the Net. From *Usenet* to early *Computer Hobbyist BBS*, from *Fidonet* to *Free-Net*, during the 1970s and 1980s, hackers, university developers and simple

amateurs pursued the utopia of a bottom-up digital infrastructure where technical applications went hand-in-hand with group formation (see Benedikt 1991; Christensen and Suess 1978; Jennings 1985; Strangelove 1993).

However, common knowledge usually refers the first appearance of the term 'virtual community' to Howard Rheingold's homonymous book describing affiliations arising from practices of computer-mediated communication (Rheingold 1993/2000). That book was aiming at introducing cyberspace to the many and at enlightening stereotypes associated with early adopters' subcultures. It described social relations established through the *World Earth 'Lectronic Link* (WELL) and other computer-mediated communication systems (CMC) from the '80s.⁶ As some observers have pointed out, by so doing it translated the counterculture heritage into the cyber age (Turner 2006).

In early 1990s, the WELL – a San-Francisco-Bay-Area-based BBS started by Stuart Brand and Lawrence Brilliant in 1985 – involved eight thousand people in online 'conferencing'. The system ran on a Unix-based software called *PicoSpan* and was hosted on a computer located in the offices of the *Whole Earth Software Review*. Users had to dial in with a modem, log in, call up a list of wide-ranging conference labels and select the preferred topic to post on or start their own.

Actually, the WELL was just a resonant case among the many forms of social uses of telecommunication systems developed between late 1970s and 1980s. Nonetheless, even today the cybernetic version of the *Whole Earth Catalog* is widely recognized as one of the experiences that mostly contributed to set the intellectual and organizational context that influenced the emerging Internet culture. As Fred Turner recalls, 'in its membership and its governance, the WELL carried forward a set of ideals, management strategies, and interpersonal networks first formulated in and around the *Whole Earth Catalog* [...] by counterculturalists, hackers and journalists' (Turner 2006, 141).⁷ In order to review the experiences that marked the birth

⁶ Actually Rheingold's book takes into consideration also other kinds of 'virtual communities', like MUDs, IRC channels, Usenet and mailing lists. However, since we are interested in his unmediated account as a direct participant, at this point of the research we shall take into account his direct experience as a WELLite. Other types of online groups will be considered later on in this paragraph.

⁷ Turner in part explains the WELL's impact on public perceptions of networked computing as due to the editorial policy that granted free accounts on the system to journalists and editors for the *New York Times*, *The San Francisco Chronicle*, *Time*, *Rolling Stone*, *the Wall Street Journal*, among others. (see Turner 2006, 143) For an in depth study of the social dynamics taking place in the WELL, see Smith (1992).

and development of the digital communitarian⁸ culture, we therefore need to start from Rheingold's approach to computer-mediated sociability.

As a first-person account by a native informant, *The Virtual Community* was aiming at introducing cyberspace to wider segments of society, at informing about its role for political liberties and at enlightening stereotypes associated with early adopters' subcultures. While conceptually resonating cyberculture's dichotomy between life online and 'real life', virtual *persona* and bounded body,⁹ Rheingold's description reveals the effort to show the social thickness of the digital domain:

people in virtual communities use words on screen to exchange pleasantries and argue, engage in intellectual discourse, conduct commerce, exchange knowledge, share emotional support, make plans, brainstorm, gossip, feud, fall in love, find friends and lose them, play games, flirt, create a little high art and a lot of idle talk. *People in virtual communities do just about everything people do in real life*, but we leave our bodies behind. You can't kiss anybody and nobody can punch you in the nose, but a lot can happen without those *boundaries*. To the millions who have been drawn into it, the richness and vitality of computer-linked cultures is attractive, even addictive. (Rheingold 1993, XVII-XVIII. *Author's emphasis*)

In Rheingold's words one can notice the endeavour to clarify to the many the social practices that come about in a domain usually considered as alien to the physical realm. The author seems to be well conscious of the stereotypes of those unaware of the assorted cultural forms that had developed in the computer networks over the previous ten years:

many people are alarmed by the very idea of a virtual community, fearing that it is another step in the wrong direction, substituting more technological ersatz for yet another natural resource or human freedom. These critics often voice their sadness at what people have been reduced to doing in a civilization that worships technology, decrying the circumstances that lead some people into such pathetically disconnected lives that they prefer to find their companions on the other side of a computer screen. (Rheingold 1993, 8)

⁸ In this research with 'communitarian' and 'communitarianism' we do not refer to those political philosophies whose most influent exponents are Alasdair MacIntyre, Michael Sandel, Charles Taylor and Michael Walzer. See Bell (2004). At this stage of the research, we use this term in its most mundane meaning of 'related to community'.

⁹ For a classical example of the binary distinction between virtual and physical domains see Barlow (1996). For a cultural history account on how cybernetics led to the dismissal of human body in the information age, see Hayles (1999).

In this excerpt Rheingold rhetorically echoes US middle class' suspicion towards artificial life and cold war's dystopias on thinking machines. 'Ersatz', for instance, is a very recurring word in Philip Dick's SF novels (see Dick 1964).

Therefore, in order to make online behaviours look more familiar, the author suggests a parallel between the North-American neighbourhood-community tradition¹⁰ and the culture of early adopters of CMC systems. According to him, computer-mediated social groups could represent an instance of that 'third place' – besides the place for living and the workplace – of the informal public life where people gather for conviviality and where communities can come into being:

perhaps cyberspace is one of the informal public places where people can rebuild the aspects of community that were lost when the malt shop became a mall. [...] The feeling of logging into the WELL for just a minute or two, dozens of times a day, is very similar to the feeling of peeking into the café, the pub, the common room, to see who's there, and whether you want to stay around for a chat. (Rheingold 1993, 11)

Echoing sociology's foundational distinction between *Gemeinschaft* and *Gesellschaft*, individual solidarity and institutional bureaucracy, traditional village and modern city, Rheingold also introduces the metaphor of online communities evolving into bigger concentrations as small towns of few inhabitants grow into metropolises. Differently from real life, however, in metropolitan cyberspace the values rooted into the essence of human beings will keep having a crucial role and will not be substituted by mechanical rationality:

some knowledge of how people in a small virtual community behave will help prevent vertigo and give you tools for comparison when we zoom out to the larger metropolitan areas of cyberspace. Some aspects of life in a small community have to be abandoned when you move to an online metropolis; the fundamentals of human nature, however, always scale up. (Rheingold 1993, XXXII)

As a matter of fact, online affiliation does not only offer the possibility to expand individuals' social capital nor it enables only weak ties: it can also

¹⁰ We cannot account here for the vast North-American sociological and urban planning literature dealing with territorial communities and sense of belonging. A classic reference author for this literature is Jacobs (1961). Rheingold himself quotes Oldenburg (1991). In paragraph 1.3.1 we shall tackle sociological approaches that criticizes the (somewhat mythological) association between local, territory-based assemblages and community.

provide a strong sense of belonging and communion among individuals who had never met face to face. Rheingold's account, in fact, repeatedly remarks the practical and emotional support WELLites used to assure to members (or members' relatives) in difficult conditions:

sitting in front of our computers with our hearts racing and tears in our eyes, in Tokyo and Sacramento and Austin, we read about Lillie's croup, her tracheostomy, the days and nights at Massachusetts General Hospital, and now the vigil over Lillie's breathing and the watchful attention to the mechanical apparatus that kept her alive. It went on for days. Weeks. Lillie recovered, and relieved our anxieties about her vocal capabilities after all that time with a hole in her throat by saying the most extraordinary things, duly reported online by Jay. (Rheingold 1993, 4)

The representation of supportive, informed, self-organized citizens, as opposed to political and economic institutional powers, is deep-seated in *The Virtual Community*. Not only the author foresees the 'pitfall that political and economic powers seize, censor, meter and finally sell back the Net' (Rheingold 1993, XIX) to the real creators, the grassroots communities, but he also fosters the role of citizens in deciding how public funds should be applied to the development of the Net. A clear opposition between two cultures of initiators of the Net is at stake in Rheingold's pages. On one hand, there are the NDRC-funded top-down, 'high-tech, top-secret doings that led to ARPANET' (Rheingold 1993, XXIII); on the other hand, there are the anarchic, transparent, bottom-up uses of CMC that grew explosively and almost 'biologically' led to BBSs and Usenet.

More than a political concern, however, according to the author himself this opposition can be conceived of as a matter of different organizational paradigms. Rheingold and the WELL management were suspicious of complex, hierarchically organized institutions.¹¹ As Saxenian (1994) has pointed out, decentralized collaboration and informal, non-hierarchical labour relations were the unifying element of Silicon Valley hi-tech industry's culture. And it was that same computer industry that assured employment to many WELL members working in the San Francisco Bay Area as self-entrepreneurs, software developers, consultants, journalists, researchers. Rapidly, the WELL became the online favourite place for a remarkable

¹¹ On this regard, Rheingold himself quotes Sara Kiesler's research on how e-mail systems changed hierarchical barriers and standard operating procedures in organizations. See Kiesler, S. (1986), 'The Hidden Message in Computer Networks', *Harvard Business Review*, 64, 1, 46-58.

assortment of experts, thus offering access to information and social relations that could be transformed into job opportunities.

More generally, as many scholars have argued,¹² mid-1980s saw hierarchical industries reorganize themselves as project-oriented networks. According to Turner (2006), for cyberculturalists the decentralized organizational paradigm found its roots in technocentric patterns of management that adapted the 1960s' New Communalists rhetoric of non-hierarchical forms of cooperation to the cybernetic paradigm of control. The centrality of cybernetic principles for the emergent network culture is evident also in Rheingold's own words when he describes virtual communities of kindred souls as self-regulating biotechnological experiments:

although spatial imagery and a sense of place help convey the experience of dwelling in a virtual community, biological imagery is often more appropriate to describe the way cyberculture changes. In terms of the way the whole system is propagating and evolving, think of cyberspace as a social petri dish, the Net as the agar medium, and virtual communities, in all their diversity, as the colonies of microorganisms that grow in petri dishes. Each of the small colonies of microorganisms—the communities on the Net—is a social experiment that nobody planned but that is happening nevertheless. (Rheingold 1993, XX)

Soon after, he asserts that not only virtual communities are self-sustaining systems, but that – following the biological metaphor – they are also *inevitable* forms of collective life: 'whenever CMC technology becomes available to people anywhere, they inevitably build virtual communities with it, just as microorganisms inevitably create colonies' (Rheingold 1993, XX).

It is also from another perspective that Rheingold's understanding of computer-mediated communities reveals its debt to cybernetics. Recalling the efforts made by cold war research to design a communication-command-control network that could survive a nuclear attack,¹³ the author takes part in the popular belief that the Net cannot be controlled or killed: 'information can take so many routes that the Net is almost immortally flexible' (Rheingold 1993, XXII).

We shall see in the next paragraph how this myth, among others associated with cyberculture, had to face empirical counter-evidence. Yet, for the time being, we intend to limit the discussion to highlight the cultural threads linking the emergence of community on the Net to US techno-

¹² See, for instance, Harvey (1989); Lash and Urry (1987).

¹³ Actually many authors, among whom there is Manuel Castells, have belied this version. See Hafner and Lyon (1996).

libertarianism, our main concern being the identification of some distinguishing elements that characterize the cultures wherein the notion of online community has arisen.

Rheingold himself provides a definition for online communities: 'virtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace' (Rheingold 1993, XX). From a scientific perspective, one could guess what he means with 'human feeling' or which amount of time or persons constitutes 'enough'. Actually, one direction of scientific research on virtual communities has tackled exactly the measurement of the 'communitarian potential', the authenticity of online sociability as compared to face-to-face relations and the elements that transform an aggregation of individuals into a 'true community'.¹⁴ This latter is a common issue not only among social scientists, but also among journalists and Internet commentators.¹⁵

Conversely, this research originates from another set of questions. As we shall see in chapter 2 with the help of the *Science and Technology Studies* framework, this research does not aim at providing a further, supposedly ultimate, definition of 'online community', nor at questioning its authenticity, but rather at mapping what *social actors themselves* mean by 'digital community'. For this reason, here we want to limit our argumentation to stress how Rheingold's notion of community is debtor in many respects to other cultures and, in particular, to the anarchic, libertarian cyberculture expressed – among others – by the *World Earth Catalog*, *Wired*, *Salon* magazine and the *Electronic Frontier Foundation*. This proximity can be traced at least under five aspects.

First, Rheingold's distinction between online activities and real life as two conflicting detached domains echoes the *Electronic Frontier Foundation's* efforts to introduce in the judicial sphere the notion of cyberspace as separated from the brick-and-mortar world dominated by nation-states. Founded by John Perry Barlow, Mitch Kapor and John

¹⁴ For examples of sociological literature dealing with the features of 'successful communities' versus informal aggregates or 'pseudocommunities' (not only online), see Bartle (2005); Jones (1998); Paccagnella (2000), Smith and Kollock (1999), Taylor (1987).

¹⁵ A good example of popularizing discourse dealing with the elements that distinguish an online community from a 'simple' assemblage of people using digital media is available at http://brandshift.corante.com/archives/2005/03/03/what_is_community.php (retrieved 10th June 2008).

Gilmore, since its inception the EFF¹⁶ has been mainly focusing on legal campaigns devoted to protect the cyberspace from government control, by extending the interpretation of US Constitution's First Amendment on free speech to the Internet. One of the major successes of the Foundation was the rejection by the Supreme Court of part of the 'Communications Decency Act' that dealt with the protection of children from the exposure to pornography online. In that occasion, the Court acknowledged that the Act's provisions were an unconstitutional abridgement of the First Amendment right to free speech. Since it prevented the Congress from extending its control over the Internet, this decision was sensational and, in the long haul, it was seen as sustaining EFF's separation between 'real world' and 'virtual life'.¹⁷

Actually, the association between US spirit of the frontier and the early network culture makes it evident why cyberspace has been seen as the place, detached from territory-based nation-states, where individual liberties and communitarian self-government could be re-enacted without any control by governments. It is therefore not by accident that the reference to the 'electronic frontier' appears in Rheingold's work subtitle.¹⁸ As Fred Turner has argued:

on the WELL, such terms kept alive a New Communalist vision of sociability and at the same time facilitated the integration of new forms of social and economic exchange into the lives of WELL members. Ultimately, thanks to the work of the many journalists on the system, and particularly the writings of Howard Rheingold and John Perry Barlow, *virtual community* and *electronic frontier* became key frames through which Americans would seek to understand the nature of the emerging public Internet. (Turner 2006, 142)

In other words, according to Turner, the WELL acted as a bridge that linked the communitarian culture from the 1960s with the emerging cyberculture paradigm fostering networked forms of economic organization and labour based on self-entrepreneurship.

Second, the spatial metaphor depicting the WELL as a little town inhabited by peers finds its roots in US local community tradition. As we have

¹⁶ For an analysis of the EFF's entry form submitted to Ars Electronica's competition, see paragraph 4.3.3.

¹⁷ See the Opinion of the Court on Cornell University Law School's Supreme Court Collection: http://supct.law.cornell.edu/supct/html/historics/USSC_CR_0521_0844_ZO.html. Accessed 31 October 2008.

¹⁸ Rheingold's book complete title being *The Virtual Community. Homesteading on the Electronic Frontier*.

seen, Rheingold's social assemblage enabled by computer networks finds its communitarian dimension in the relatively small scale and in the sense of solidarity among peers. As sociologist Stanley Aronowitz has noticed, these two aspects are also present in the cultural legacy of the New Left of the 1960s-70s. According to Aronowitz, the New Left fostered principles like localism, individual empowerment, distrust in professional expertise, direct commitment of individual citizens to political affairs. These same principles, in turn, came from the Jeffersonian ideal of a democratic system based on locally self-governed townships whose decisions were taken during public open assemblies. Similarly – Aronowitz argues – direct involvement and commonality among peers can be retraced in the forms of self-governance enacted by computer-mediated social networks (Aronowitz 2006, quoted also in Formenti 2008).

Against Aronowitz's argument, however, the parallelism between the New Left's localism and the notion of cybercommunity is indirectly put under critic by Turner (2006). Even if he acknowledges the re-emergence of a strong sense of community in the 1960s, Turner argues that the communitarian tradition that ended up into the virtual community paradigm of the WELL was that of the New Communalists and of the back-to-the-earth movement exemplified by the *World Earth Catalog*. Even if common knowledge considers the New Left and the New Communalists as part of the same countercultural movement – Turner argues – the youth of the 1960s developed two overlapping but distinct social movements. While the New Left grew out of the struggles for civil rights and turned to political action and open protest against the Vietnam war, the New Communalists found their inspiration in a wide variety of cultural expressions like Beat poetry, eastern philosophies, action-painting, rock music and psychedelic trips. This second wing focused on issues of consciousness and interpersonal harmony as means whereby to build alternative, egalitarian communities. As a matter of fact, between 1965 and 1972 several thousand communes were established throughout the US, thus setting a sort of 'rural frontier' that should mark the way to 'a new nation, a land of small, egalitarian communities linked to one another by a network of shared belief' (Turner 2006, 33).

Anyhow, be it an element coming from the New Left or New Communalists tradition, localism remains a foundational reference for US digital communitarian initiatives, even when – like in the WELL – it is used as a metaphor of networked, immaterial proximity.

Third, Rheingold's understanding of two conflicting cultures of creators of the Net, summarized by top-down ARPANET and bottom-up Usenet,

echoes counterculture's rejection of 1950s' 'closed-world'.¹⁹ At the same time, the culture expressed by WELL's members actually has many points in common with cold-war military-academic research. These two worlds share the cybernetic utopia of a techno-scientific anarchism oriented to downsize the power of institutional actors in order to give autonomy back to individuals. As Mattelart 2001 has recalled,²⁰ in his 1948's work *Cybernetics: or Control and Communication in the Animal and the Machine* Norbert Wiener postulated information as the source of a 'second industrial revolution' bearing the promise of emancipation for the citizenry. To realize this utopia, however, information should be allowed to flow free of any obstacle set up by those institutions that control media and whose aim is the accumulation of power and wealth. Not very differently from Rheingold's warnings against political and economic powers seizing the Net, Wiener was concerned with the tendency of the market to commodify information as well as with the government apparatus' temptation to subdue science to military ends.

Fourth and strictly related to this point, another element that emerged in cold-war academic think tanks and spread across the counterculture and later across communitarian cyberculture is the distrust towards forms of leadership that do not derive from reputation capital. Goldsmith and Wu (2006) describe the decision-making models of 1950s' committees of computer scientists as based on a sort of 'rough consensus' reached among expert peers, rather than on hierarchical positions developed elsewhere. Similarly, it is well-known how in digital and hacker communities, in particular, leadership is based almost exclusively on reputation built inside the digital domain.²¹ Formenti (2008) argues that this anti-intellectualism resounds a sort of North-American suspicion towards expert knowledge and refuses educational degrees and bureaucratic rationality as essential requirements to reach leading positions. This aspect is of course related to what we have already mentioned as the decentralized organizational paradigm: in technological and scientific domains, reputation capital related to the knowledge on specific issues has been substituting forms of interpersonal power derived from traditional factors like class belonging or political

¹⁹ See Whitfield (1996).

²⁰ 'In cybernetic thinking, causality is circular. Intelligence does not radiate from a central decision-making position at the top, where information converges and from which decisions are disseminated through a hierarchy of agents, but rather involves an organization or system of decentralized, interactive control'. (Mattelart 2001, 51).

²¹ See Castells (2001); Lanzara and Morner (2005). We shall address this aspect in more depth in the next paragraph.

affiliation simply because they were not valuable in project-oriented networks (see Saxenian 1994).

The fifth source of proximity between Rheingold's understanding of community and the anarchic, libertarian culture that originated with the 1960s' countercultural movement and turned into the 1980s' cyberculture deals with those resources that not only become available to individuals as participants in an online community, but are also collaboratively created by that same community. Rheingold identifies two kinds of resources that can be obtained by means of a computer-mediated group: community for community's sake and information. According to him, the WELL is both a source of emotions and an information-seeking device bringing value to his professional life. By putting together sense of common identity and professional knowledge, the digital community acts as an information gatekeeper or 'informal software agent':

since so many members of virtual communities are workers whose professional standing is based on what they know, virtual communities can be practical instruments. If you need specific information or an expert opinion or a pointer to a resource, a virtual community is like a living encyclopedia. Virtual communities can help their members, whether or not they are information-related workers, to cope with information overload. (Rheingold 1993, 46)

The informal, unwritten social contract the author describes is a perfect example of an homeostatic process. Utility originates from the acknowledgment that every piece of information forwarded from a sender to a bunch of potentially interested receivers will be counter-balanced by other pieces of targeted information that the original sender will receive from some of the former recipients, once they have added her preferences to their contact list. Given the unit cost of forwarding which tends to null, the help she receives will outweigh the energy she expended helping others. Like in a social homeostat, altruism and self-interest go hand in hand.²²

If the first reason to join a virtual community lies in calculated interest, nonetheless Rheingold adds some less concrete goals to individuals' online commitment:

²² As a matter of fact, this is exactly the way peer-to-peer (P2P) networks work. As it is well known, P2P clients operate on the basis of a contract embedded into code, according to which the higher your upload bandwidth, the faster your download.

reciprocity is a key element of any market-based culture, but the arrangement I'm describing feels to me more like a kind of gift economy in which people do things for one another out of a spirit of building something between them, rather than a spreadsheet-calculated quid pro quo. When that spirit exists, everybody gets a little extra something, a little sparkle, from their more practical transactions; different kinds of things become possible when this mind-set pervades. (Rheingold 1993, 49)

It could be said that in the author's interpretation a sense of belonging emerges from transactions as a sense of place used to arise out of the market in the ancient Greek *agora*. Common identity setting being the ultimate goal, the calculated *quid pro quo* turns into a gift economy.

Here, Rheingold shares with the anthropological studies on exchange in pre-modern societies the notion of gift as a means for the establishment of social order. As Marcel Mauss suggested, gifts originates cycles of exchange that result in the establishment of structural relations between givers and recipients (Mauss 1954). This is possible because, as Pierre Bourdieu argued, the gift embeds multiple meanings that ultimately work to turn material resources into social capital (Bourdieu 1997).

In the case of virtual communities, nonetheless, the resources transformed into social capital are of a particular kind: they are mainly knowledge-related resources. This means they are indefinitely reproducible at null or negligible cost. As it is well-known, this peculiar feature of information-based resources has been of crucial importance for the emergence of the communitarian paradigm. If valuable resources – conceived of as gifts whose ultimate role is the establishment of structural relations – can be reproduced at very low cost, then the entrance barriers for setting up online relations turn out to be considerably reduced. This argument would explain the proliferation of online communities that Rheingold saw as a biological necessity.²³

Here is where online communities *à la* Rheingold meet the hacker ethics, on one hand, and net art, on the other hand. First, FLOSS²⁴ development communities are systems based on forms of exchange that set code as currency. With respect to other gift cultures, for Rheingold as well as for FLOSS communities, gifts are valuable for their use value and not only for their exchange value. Second, net.art substitutes the creation of art works

²³ See page 17.

²⁴ FLOSS is the acronym of *Free/Libre Open Source Software*. It is considered to be the politically correct expression that merges the 1998's controversy between Richard Stallman, initiator of the Free Software Foundation, and Eric Raymond, promoter of the 'open source' philosophy as a business model. For details on the controversy, see DiBona *et al.* (1999).

with the development of shared behaviours and knowledge corpora, as we shall discuss in paragraph 1.1.3.

Summing up, in Rheingold's and in the WELL's experience the communitarian framework is rooted into the cyberculture, libertarian paradigm whose principles are the sharp separation between cyberspace and physical world, localism and/or cultural proximity between peers, grassroots commitment, distrust in hierarchically organized institutions and professional powers, trust in technocentric forms of decentralized organization based on reputation, immaterial resources as currency in a gift economy. In paragraph 1.2 we shall see how some of these principles had to face empirical counter-evidence in early 2000s. Yet, before that we are going to see how some of these cultural elements are present also in other experiences that brought contributions to the understanding of online communities.

1.1.2 1980s' Internet imaginaire and the attempts to classify early virtual communities

Being concerned with the introduction of the social cyberspace to the many, by mid 1990s Rheingold's effort had already turned outdated. With the Internet overdrive, GUIs and hypertext, in fact, CMC systems had become directly accessible to a much wider population, as the author himself acknowledges in the 2000's new edition of *The Virtual Community*.²⁵ Nonetheless, many of the features that characterized the communitarian culture sketched in that early book were re-enacted into the new Internet logics between mid 1990s and early 2000s.

Howard Rheingold might be considered a typical exponent of that 'third layer' of the Internet culture wherein Manuel Castells lists the 'virtual communitarians': users of the Net who – while not being techies – nonetheless mould its uses.

Following a linear pattern of evolution according to which innovative behaviours propagate from élites to wider portions of society through concentric waves, Castells (2001) identifies four cultures of designers of the Internet. Highlighting the direct relationship between the culture of the creators and the technological development of the Internet, he distinguishes four hierarchical 'layers' contributing to the Internet culture: the technomeritocratic culture, the hacker culture, the virtual communitarian culture and

²⁵ See Rheingold (2000), chapter 11.

the entrepreneurial culture (Castells 2001, 36-7). The key concept underpinning all these layers – Castells argues – is the openness of the source code, since FLOSS has been the crucial technological element in the development of the Internet.²⁶

What Castells calls the 'techno-meritocratic culture' corresponds to that cold-war academic technological research we already mentioned in the previous paragraph. This culture – Castells argues – is characterized by the trust in scientific and technological development as a key component for the progressive improvement of the human condition.²⁷ The crucial features of this techno-meritocracy are the pursuit of technological advancements in computer networking, seen as commons for the whole community of highly skilled researchers/peers; the object-driven nature of valuable knowledge; the peer-review system for reputation building; the attribution of managing functions to figures recognized as authoritative among the community of peers; the denial to use common resources for individual purposes and, finally, the open communication to the whole community of the results achieved through networked collaboration.

According to Castells, these principles have also been integrated into the hacker ethics, the second layer of Internet culture. First of all, in order to introduce this second layer the author tries to provide a more specific definition of 'hacker' than those proposed by Himanen (2001) and Raymond (1999). He defines hackers as

actors in the transition from an academically and institutionally constructed milieu of innovation to the emergence of self-organizing networks transcending organizational control. In this restricted sense, the hacker culture, in my view, refers to the set of values and beliefs that emerged from the networks of computer programmers interacting on-line around their collaboration in self-defined projects of creative programming. (Castells 2001, 41-2)

Three are – according to Castells – the distinctive features of the hacker ethics of the 1980s with respect to the academic system of value: the independence of projects, the use of computer networking as the technological and organizational foundation for this autonomy, informality and

²⁶ As examples of key open technologies, Castells quotes the Apache server program, TCP/IP protocols, Unix and GNU/Linux operating systems, Mosaic and Netscape Navigator browsers and, in part, the Java language

²⁷ On this regard, Mattelart (2001) wrote extensively about the origins of the technocratic culture and of the same notion of 'Information Society', referring them back to Francis Bacon's *scientia utilis*.

virtuality as key elements in the process of identity building. Apart from this, the hacker culture shares with the technocratic paradigm a set of attributes:

- the goal of technological excellence that entails the need for collaboration and a peer review system for open source code;
- the intellectual freedom to create, manipulate and redistribute technical knowledge in whatever form;
- the value of cooperation as based on the principle of reciprocity and on a specific kind of gift economy: reputation and social esteem are directly linked not only to the symbolic value but also to the practical relevance of the gift (the innovative code) for the community of developers;
- the denial of money and formal property rights as source of authority and good reputation.

Further elements typical of the hacker ethics are the joy of creation that – according to the author – draws the hacker culture up to the art sphere, and the political involvement towards rights such as freedom of expression and privacy. We shall address the closeness between art, politics and hacking in paragraphs 1.1.3 and 1.1.4; for the time being, we want to focus on the role of the communitarian dimension, acknowledged by Castells as a key component of this second layer of the Internet culture.

In Castells' opinion, in the hacker community the sense of belonging is rooted into a form of organization – although extremely informal. Indeed, informality and organizational mechanisms are kept coherently together by the recourse to computer-mediated interaction. Conflicts and harmonization among different projects are negotiated online through collectively-reinforced rules and, eventually, sanctions in the form of 'flaming', public blame and exclusion from the community of collaborative software creation. Using CMC systems not only to weave social networks but also to organize them is something that the hacker culture shares with the communitarian one.

As the third step in the development of the culture of Internet, according to Castells virtual communities have adopted from the academic techno-meritocratic culture and the hacker ethics values such as meritocracy, freedom to use and manipulate technological artefacts, many-to-many patterns of communication, *unus inter pares* forms of leadership based on internal reputation and an open-sharing approach to the commons produced by the community itself.

In turn, this layer has added to the *techies* culture an orientation towards society-at-large, thus dismissing the strict focus on technology for technology's sake. BBSs, Usenet, Fidonet, The Digital City Amsterdam, the Institute for Global Communication (IGC) and the WELL itself shaped innovative uses and social practices on the Net, although their promoters had limited technological skills. According to Castells, while the software-oriented cultures provided the technological basis for the Internet, the communitarian culture moulded its social processes and uses.

Similarly to Turner (2006), Castells too recalls the cultural affinity between early virtual communities and the counterculture of the 1960s: 'many of the early on-line conferences and BBSs seem to have grown out of the need to build some kind of communal feeling after the failure of countercultural experiments in the physical world' (Castells 2001, 54). However, over the years – he argues – the link deadened to the point that, nowadays, it is empirically impossible to trace a single Internet communitarian culture.

Nonetheless, Castells identifies two cultural components that are shared among highly diverse online communities: the value of horizontal, many-to-many grassroots communication in a world dominated by media concentrations and a kind of self-oriented attitude towards networking, or the ability to self-publish, self-organize and induce new networks.

Lastly, such an ability has been made productive by those entrepreneurs that in the 1990s fostered the new economy and thus led the diffusion of the Internet to wider portions of society. According to Castells, the new economy firms have been a driving force for the expansion of the Internet from closer circles of techies and communitarians to society-at-large. By so doing, entrepreneurs, innovators and venture capitalists developed – and were moved by – a self-standing cultural milieu. This culture can be defined by the following set of values:

- since revenues came from conceptual innovations, entrepreneurs soon developed the capability to transform ideas into business. The realization of the potential of the power of mind became a cornerstone for the emerging Silicon Valley entrepreneurial culture.
- The new economy culture was founded on money and on the speed at which money were made as the supreme values. In this cultural system, great amounts of money became a symbol not only of success, but also of independence from the traditional corporate world. The stock option mechanism was functional in this regard,

allowing the convergence between individual freedom and entrepreneurship.

- Furthermore, money were seen as a means to earn the respect of peers. This is where the distance with the other cultures described by Castells becomes more evident. As we have seen so far, in fact, for scientists, hackers and communitarians the respect of peers depended upon the degree of excellence of the innovation proposed to the community. This degree of excellence was established *inside* the community. For Internet entrepreneurs, conversely, it was the financial market the actor who played the role of ultimate judge of the company's performance as an innovator.
- Yet, the money-making process was radically different for Internet companies with respect to traditional Wall Street corporations: while the latter ones used to make money by betting on future market behaviour, the Internet entrepreneur used to sell the future which he believed he was able to determine. This difference entails also cultural distinctions: more than a full-blown business man, the Internet entrepreneur acted as a self-fulfilling-prophecies vendor and, ultimately, as an artist.
- Even if there was a connection with the hard work ethics of the traditional industrial entrepreneurship, for the Internet business culture the reward-system did not follow a deferred gratification model but rather an immediate hedonistic pattern of superfluous consumption accompanied with an informal working behaviour. Even here, the difference with the humble life style of hackers like Richard Stallman is manifest.

To conclude, it might be said that Castells marks a clear distinction in the systems of value of excellence-oriented scientific, hacking and communitarian cultures, on the one hand, and of Internet entrepreneurs, on the other hand. It should also be noticed that this point is quite in contrast with Fred Turner's argument which, conversely, stresses the seamless translation of the New Communitarians' culture into the early experiences of online communities of the 1980s and, through them, into the Internet business logic of the 1990s. As we have seen in the previous paragraph, according to Turner (2006) the counterculture movement of the 1960s provided the emergent Internet business world not only with a cultural

framework oriented to informality and self-entrepreneurship, but also with new organizing logics derived from cybernetics.

1.1.2.1 Flichy's classification of online communities

Another author that stresses the debt of the virtual communitarian culture towards the counterculture of the 1960s – although preventing himself from extending the analogy further – is Patrice Flichy. Flichy (2001) parts with establishing a diachronic classification of the different cultures whereby the Internet was constituted and prefers to focus on the origins of virtual communities between late 1970s and early 1980s.

Flichy first distinguishes between an understanding of information technology seen exclusively as an intellectual tool, on one hand, and its conception as an instrument to be made widely accessible to everybody, on the other hand. If the first understanding is proper to the closed academic world, the second attitude towards networking technologies was fostered by computer programmers working at the margins of the university world. Following Levy (1985) and very closely to Castells' definition, Flichy adopts the term *hackers* to indicate independent computer amateurs moved by values like open access to information technology, decentralized organization, freedom of information, reputation capital based solely on the excellence of the products, and trust in the capability of computers to enhance the quality of human life.

However, Flichy does not limit this definition to designate only computer programmers, but extends the term to cover also online communitarians. According to this author, in fact, amateurs can be sorted into three principal currents: those involved in the wider project of counterculture and the hippie movement, those stressing the technical performance (*hackers* in the strict sense) and those involved in community projects oriented towards civil society at large. Among the countercultural experiences, Flichy numbers *Community Memory* – a sort of 'utopia embodied onto the first technological steps', started in 1973, whose goal was providing personal computers for all and a network of communication among peers; *CommuniTree* – a conference system started in 1978 in the San Francisco area, aiming at building a community whose freedom of communication should be inscribed into software; and the WELL itself.

The second current gets closer to those social actors we have so far called hackers. The hobbyists networks, in fact, were mainly focused on technical objectives like enhancing the capability to communicate at a distance by means of computing systems. Here, Flichy includes the

Computer Hobbyist Bulletin Board System (1978) and *Fidonet* (1983). The *Computer Hobbyist BBS* was an electronic board where anyone could exchange or sell goods. Being a system for experimenters, the developers freely released the code in order to enable other people to create their own BBSs as nodes of a wider network (Christensen and Suess 1978).

Nonetheless, it was *Fidonet* that in 1983 realized the intuition of early BBS authors. Developer Tom Jennings released a software enabling the networking of two BBSs running on micro-computers. *Fidonet*'s architecture was based on the principle of maximum decentralization: every node was self-standing and could automatically communicate with all the other nodes, in a much more anarchist way than Usenet and Arpanet. Freedom of *Fidonautes* was limited by a very minimal ethical principle: don't be annoying in order not to be annoyed.

Like for radio amateurs, Jennings' goal was primarily technical: to create a 'non-commercial network of hackers willing to play and find new uses for data transmission networks' (Jennings 1985). Yet, Flichy argues that *Fidonet* as a project defined by technical objectives revealed to be a social project, too. As a matter of fact, the 'techies' and social currents soon diverged as far as the control of the network and the focus on content transmission Vs. technical performances were concerned.

Conversely, the third type of communitarian *imaginaire* acknowledged by Flichy used to look at ICT as tools for community development. According to him, the idea of neighbourhood communities using grassroots media in order to grant free expression to citizens appeared in early 1970s in the US, with the diffusion of public access cable TV and video. The *People's Video Theatre* and *Alternative Media Center*, for instance, were projects aiming at giving communities, especially the most disadvantaged, the opportunity to independently produce information about themselves. Video-making itself was seen as a tool for community development.²⁸ Similar projects used to aggregate around principles like universal access to media, refusal of mainstream media distortions, lack of control.

Among these initiatives, Flichy includes the *Free-Net* (1984), *Big Sky Telegraph* (1987) and *PEN* (1989). The Cleveland *Free-Net* was founded by Tom Grundler, a professor in education, as a BBS focused on health-related issues. By 1989, it had turned into a multi-topic community network (the National Public Telecomputing Network) directly managed by the 250

²⁸ For a similar perspective shown in this research's sample, see the dotSUB case study in paragraph 4.3.4.

community volunteers. Differently from the WELL and commercial services, the NPTN was not based on an information-pull model: free information was published according to the desires of the senders and not to the needs of the receivers. Additionally, the logic underpinning Cleveland Free-Net was that of the digital public library based on universal free access to knowledge. Like physical libraries, the virtual one was conceived of as a founding element of the local identity and as a tool for the re-humanization of urban life.

Conversely, the logic that led Big Sky Telegraph was fairly different from that of urban Free-Net. BST was a network that digitally interconnected dispersed schools and businesses in rural communities in the West. It was aimed at facilitating community integration and oriented towards that rural middle-class that is traditionally suspicious of big governments and big businesses (see Dave Hughes quoted by Rheingold 1993, 242), rather than towards the marginalized. Here, the distrust towards big powers echoes Rheingold's opposition between top-down and bottom-up digital networks, as seen in the previous paragraph.

Lastly, Flichy quotes Santa Monica's Public Electronic Network as an experiment in local electronic democracy. The PEN was a local municipality-led digital assembly where citizens, disadvantaged individuals and local authorities could get engaged in open discussions. However, while acknowledging the communitarian scope of this early experiment of digital city, Flichy argues that this network did not succeed in constituting a place for political confrontation.

To conclude, even if he does not take into consideration more recent Web developments, Flichy argues that it is at this early prototypical stage that the Internet *imaginaire* started being constructed. Three are the elements whereby virtual communities may be classified according to the French scholar: geographical proximity, institutional belonging, degree of face-to-face knowledge.

As to geographical proximity, BBS, Free-Nets and the WELL (which was mainly based in the San Francisco Bay Area) replaced the claims for universal, de-localized communication more proper to hackers and technology amateurs with a local perspective. As to institutional belonging, apart from CommuniTree, BBS and community networks required some formal subscription and a shared vocabulary as strong identity markers. Finally, reciprocal face-to-face knowledge was a very variable element, depending upon the dimension and regularity of participation. As a unifying elements there is the understanding of networking technologies as tools to be

made accessible to wider segments of population. And this is one of the traits that may also be recovered in the communitarian experiences of the 1990s.

1.1.3 The network is the message: networking as a form of art and the mailing list culture of the 1990s

Even if we are discussing the work of historians, it should be clear by now that this chapter is not aimed at providing an additional, comprehensive historical reconstruction of the emergence and development of the notion of 'virtual community'. Historical reconstruction needs a much harder endeavour than a literature review chapter in a research whose aim is tracing community in the words of the direct participants.

However, in order to understand the reasons for a research on digital communities in late 2000s, highlighting some key features of the cultures that shaped the *imaginaire* of those multi-faceted social artefacts that have been called 'online communities' becomes imperative. Therefore, we shall try to make this review as much complete as possible for an introductory chapter.

In addition to those experiences already discussed in the previous paragraphs and widely recognized as key instances of online forms of socialization, there are two other kinds of social practices, developed during the 1990s, that contributed semantic elements to the notion of digital communities. These are the new media art practices based mainly of mailing list systems and those political movements commonly subsumed under the umbrella term 'No/New Global'. As we are going to see, these two types of practices often blended political, artistic and technological concerns.

With the Internet overdrive, the graphic interface and hypertext, in mid 1990s the World Wide Web emerged for the many as a powerful broadcast (one-to-many) medium for information retrieval. However, online groups assembled through technologies of decentralization (many-to-many) kept representing an important amount of the activities carried out on the Internet. These activities used to take place in other, self-organized digital environments than the World Wide Web, like BBSs, mailing lists, streaming channels and Internet chats. Only in late 1990s open publishing Web platforms started being implemented.

Despite the diffuse efforts to devise business plans whereby to extract profits from the Internet, many artists and activists kept looking at the Net as a place for designing collective projects in a non-profit way. As Antonio Caronia has pointed out, the 1990s were years of coexistence where the expansion of freedoms went hand-in-hand with economic chances: 'the Net was seen as a means to multiply experiences, to extend freedom, to share. A

space where not only broadening the opportunities for interpersonal relations was possible, but also subduing the logic of profit to these relations was feasible, without denying the possibility to create income from online activities, but looking at this possibility as the result of the logic of sharing' (Caronia 2008. *Author's translation from Italian*).

Such a sense of potentiality was sustained by a peculiar type of coalition. It is widely accepted that the 1990s witnessed the alliance – never overtly declared, though – between immaterial capitals and knowledge workers, libertarian capitalism and the rebels on the Net. Formenti (2002), for instance, named this variegated coalition 'Fifth State'. Governments' attempts at shrinking the spaces of autonomous action online and not the intervention of economic powers (except monopolies like Microsoft) were seen as the main obstacle to the development of the Net as a free domain. The 1990s thus were a decade where TAZ – Temporary Autonomous Zones (Bey 1992) – mingled with start-ups.

It is well-known that this phase of expansion waked up in the ruins of the Dotcom burst. As we shall discuss in paragraph 1.2, the net economy burst not only killed the illusion of medium and small companies to compete with big traditional sectors, but also marked the end of the alliance between venture capitalists and creatives of the Net. However, given their non-profit nature, this sudden awakening seemed to exert less influence on those practices of independent networking that were situated at the confluence between digital technology, art and politics.

Actually, networked forms of collaboration did not appear with the Internet. In the field of art and activism, it is with the neo avant-gardes of the 1960s that experimental networked practices took place across distance, using traditional mail, television, radio. As Norie Neumark recalls, 'in the second half of the twentieth century, artists turned communication media into their art media. At that moment art, activism, and media fundamentally reconfigured each other – at a distance. The projects they engaged with ranged from mail art to radio art to satellite art and beyond and between' (Neumark 2005, 3). According to Neumark, it is in the critic of communication institutions that artistic and activist practices merged together: 'many artists were concerned more with challenging the institutions not (just) of art, but of communication, from the mail system, to publishing, to radio and television. This challenge to the institutions of communication was a nodal point of connection between artists and activists' (Neumark 2005, 12).

From *Fluxus* to mail art, from *Neoism* to *Mini-FM*, the minimal common denominator was the possibility to experiment art as collective inter-action

where every actor was at the same time user and producer of information. Of course, this principle brought with it a radical critique towards the dichotomy artist/spectator, the notion of originality in the art work, the same idea of individual author, and the distinction between amateur and professional.

As Tatiana Bazzichelli has pointed out, these insights were subsequently inherited and further developed by the antagonist art practices of the 1970s and 1980s. By claiming the autarchy of media and the possibility to self-produce art outside commercial circuits, cyberpunk, graffitism, hacking and squatting aimed at creating infrastructures of communication that be alternative to those dominated by market logics and commercial contents (Bazzichelli 2006a).

In the 1990s this system of values and practices found full deployment in the practices of so called 'digital networking'. Artists, hackers and activists seamlessly integrated nomadic media projects, decentralized forms of organization and critical issues as elements constituting coherent meanings and modes of action. International public discussion lists like *Nettime*, *Rhizome*, *Xchange*, *Recode*, *Syndicate* merged together technologies that enable many-to-many communication patterns, open access, low-profile moderation and media criticism (Lovink 2003).

By freeing the artistic process from the one-to-many technological restraint of broadcast media, the Internet went to embody the same concept of inter-active creation of art works and replaced the blurred dichotomy artist/spectator with that of host/guest.²⁹ Net, ascii and software art marked the transition from an aesthetics of representation to an aesthetics of interaction, from image and intention to interconnection and interaction. In these forms of art, the creative act was not oriented to the creation of objects, but rather to the development of networked organisms, share procedures and protocols and shared knowledge *corpora*. Art theorist Andreas Broeckmann has labelled this new media art subfield located at the convergence between the social, the political, the cultural and the economical 'machinic aesthetics' (Broeckmann 1996; 2004).

One of the pioneers in this field was *The Thing* (<http://bbs.thing.net>), a BBS-based discussion platform that soon became a reference point for new media art and net.art. It was founded in 1991 in New York by Austrian artists Wolfgang Staehle and Gisela Ehrenfried. In 1992 The Thing Köln and The

²⁹ We are referring here in particular to Hobijn's understanding of net.art as 'techno-parasite'. Like a parasite, net.art endlessly migrates from host to host and net.artists homepages are constituted, in turn, by links to other artists. See Hobijn and Broeckmann (1996).

Thing Vienna joined the network, followed by The Thing Berlin, Amsterdam, Frankfurt, Basel and Rome. As Marco Deseriis and Giuseppe Marano (founders of The Thing Rome) recall,

in 1995, The Thing New York <bbs.thing.net> and Vienna <www.thing.at> migrated on the Web, thanks to an interface created by young Viennese developer Max Kossatz. *This interface kept the communitarian features of the BBS*, providing members with additional chatting, comments posting and discussion list reading facilities. By gathering a rich archive of artistic projects, sound documents, radio transmissions, reviews, articles and interviews, over the years The Thing became a fundamental reference point for both the underground scene and the Avant-gard art. (Deseriis and Marano 2003, 196. *Author's emphasis. Author's translation from Italian*).

Between 1994 and 1996 other initiatives joined The Thing in offering discussion platforms on critical net culture.³⁰ Moreover, from 1995 onwards, this discussion could also rely on international mailing lists. The culture of the lists was originally born among early university researcher as a way to reach agreement on standards and software development. Then, in mid 1990s mailing list software turned out to be perfectly adaptable to the needs of media artists, theorists and technology designers. *Nettime* (www.nettime.org) was the first mailing list devoted to the development of an environment for Net critique. It was founded in 1995 at the Venice Biennale by artists, media theorists and activists like Nils Roeller, Pit Schultz, Tommaso Tozzi, Vuk Cosic, Kathy Rae Huffman, Geert Lovink, David Garcia, Diana McCarty, Siegfried Zielinski, Roberto Paci Dalò and Alessandro Ludovico. In few months the list became the reference point for European digital avant-garde, with hundreds subscribers. Net.art, public space, digital democracy, media activism were the issues of interest of the list. Among the goals of Nettime, there was the effort to renew the 'leftist' European political agenda of the 1990s by fostering an approach towards ICT that overcame the 'Californian Ideology' as well as the cynicism of 'old media' intellectuals (McCarty 1997).

³⁰ *De Digital Stad Amsterdam* was founded in 1994, *Public Netbase* was born in Vienna in 1995, *Ljubliana Digital Media Lab* started in 1995, *Backspace* was founded in London in 1996. A detailed description of the rise and fall of *De Digital Stad* can be found in Lovink (2002).

Some additional mailing lists focused on net culture have been *Rhizome*, *Syndicate*, *Cybermind*, *Xchange*, *7-11*, *Faces*.³¹ Media theorist Geert Lovink has introduced the label 'critical Internet culture' to indicate this 'emergent *milieu* made of no-profit initiatives, cultural organizations and individuals mainly based in Europe, United States, Canada and Australia and in an increasing number of other countries [...] that lies at the crossroads between visual art, social movements, pop culture, journalism and academic research.' (Lovink 2003, 32 of Italian edition. *Author's translation from Italian*). As a matter of fact, Lovink's 2003 book – titled *My First Recession* – takes the move from the Dotcom burst in order to trace back the birth and development of those groups enabled by mailing list software that were born in the optimism of the 1990s and resisted the commercialization brought about by the mainstream wave. Lovink himself has been one of the participants of many of these groups, from *Nettime* to *FibreCulture*, from *Syndicate* to *Xchange*.

The critical³² Internet culture took shape mainly through mailing lists and chats, festivals and public debates. Its goals pertained to neo-counterculture as well as to technology design. On one hand, critical media culture aimed at creating a long-standing media infrastructure that should be

³¹ *Rhizome* (www.rhizome.org) was founded by American artist Marc Tribe in Berlin in 1996. It is now based in New York. Apart from the newsletter, Rhizome has developed a Web 2.0-like archive for net.art works. The *Syndicate* (www.v2.nl/syndicate) mailing list was founded by media art critics Inke Arns and Andreas Broeckmann in 1996 as a branch of the V2_East initiative aiming at involving new media art professionals active in East and West Europe in a common discussion space. This list witnessed the controversies arisen during the war for Kosovo and was closed in 2001 under attacks by trolls and net.artists. *Cybermind* was founded in 1994 with a focus on online identity construction: arguments spanned from French theory to Mud and Moo, from cybersex to the theory of films. It collapsed during US invasion of Iraq in spring 2003 because of overwhelming tensions arisen from national identity-related controversies. *Xchange* was born in 1997 as a no-profit, independent network experimenting grassroots solutions for Internet streaming. For an extended account on international networking platforms and mailing lists, see Deseriis and Marano (2003).

³² With 'critical' Lovink does not intend to refer to the continental notion of 'critical theory' developed by the Frankfurt School, but rather to an intellectual practice that could make the Internet culture to put down roots in more solid ground than the 1990s' hype: "Critique", in this contest, refers to the urgent need to reflect and think, combined with action. In the 1990s many felt that taking action was essential in order to contrast an emphatic information obsessed by slogans. What was needed was an informed discourse that could transcend daily slogans and combine a diffuse orientation towards the public, free software and open standards with a self-critical understanding of economy and of the role of culture in the building of the "net society". (Lovink 2003, 11 of Italian edition. *Author's translation from Italian*)

independent from mainstream media corporations and governments. On the other hand, it aimed at directly intervening in the early phases of technological innovation. It used, in fact, to call into question and modify the architecture of the networks and its code, the social relations produced by ICT and the technical standards. As we are going to see in the next paragraphs, on this regard Lovink's critique very much resembles Clay Shirky's reflections on social software and Bruno Latour's understanding of technological artefacts, rather than the Frankfurt School's concerns.

Lovink himself is reluctant to describe these mailing lists as virtual communities, given his suspicion towards the term 'community' and the idea of harmony, consensus and order to which it is associated. Yet, he overtly claims that his book is about the analysis of how digital communities work a decade after the popularization of the Internet.³³

The discussion on whether it is adequate or not to label media art mailing lists as digital communities may be contextualized by considering the academic research of the 1990s. This decade saw the emergence of a considerable academic interest towards virtual communities, previously quite disregarded by scholars. Apart from computer science, the first disciplines that showed some interest in this field were cultural and media studies, art history and social sciences. While media and art studies tended to focus on the languages that characterized 'new media' from contemporary art and visual culture and to trace genealogical histories (Bolter and Grusin 1999; Daniels 2002; Kittler 1997; Lunenfeld 1999; Manovich 2000; Zielinski 1999), social sciences used to look for group boundaries and motivations, identity-building strategies, organizational models, mechanisms of consensus through 'information and communication technologies' (see Jones 1995; 1998; Smith 1992; Smith and Kollock 1999).

These two only partially overlapping scholarships may be respectively compared to David Silver's third and second stages of Internet studies. According to Silver (2000), in fact, three stages of the research about Internet may be devised. The first stage (popular cyberculture) corresponds to journalistic researches. The second stage (studies on cybercultures) focuses on virtual communities and online identity. The third stage (critical studies on cyberculture) focuses on the right to access the Internet, the 'political' aspects in the design of interfaces and other meta-issues. While Lovink

³³ It is actually Josephine Berry that labels these experiences as virtual communities in her Ph.D. thesis. According to this Nettime subscriber, mailing lists are long-standing assemblages that produce critical and information-rich virtual communities whereby art works are created, distributed and discussed (Berry quoted by Lovink 2003).

locates critical Internet culture and media art mailing lists at the third phase of Internet studies, 1990s' sociological studies on digital communities might be included in the second stage and Rheingold quasi-journalistic account in the first stage. Keeping this distinction in mind, this research will thus consider also critical Internet culture and mailing lists as digital communities.

1.1.4 Mediactivism and the early Web platforms for open publishing

In early 2000s the mailing list communities' efforts to create a techno-political agenda wherein political, media and artistic aspects were seamlessly integrated were taken by surprise by an emerging new collective actor. Those were in fact the years of deep global political developments. As American film professor and activist Dee Dee Halleck has pointed out, from the so called 'battle of Seattle' onwards, an increasing number of worldwide appointments has been ratifying the welding of two currents that up to that moment had rarely met. During the protests in Seattle, Davos, Geneva, Nice, Genoa and Prague, the anti-neoliberalism movement for social justice and the alternative media scene integrated their agendas, thus setting the bases for the birth of a globally widespread network of Independent Media Centres (IMC) (Halleck 2002).

Despite the different currents, the hybrid movement that emerged to worldwide visibility in 1999's uprising showed the common will to resist neo-liberalist policies imposed by Western countries to developing ones. One unifying trait that characterized these initiatives was the capability to gain global visibility starting from grassroots conditions by 'tactically' using media and the Internet (see Pasquinelli 2002). 'Don't hate the media, become the media' soon became the motto of the Independent Media Centres.

Multiple cultures contributed to the *Indymedia* experience and to early 2000s media activism in general: activists from the *World Social Forum* in Porto Alegre and pirate radios, hackers and journalists, fanzine editors and artists from the punk scene. As Pasquinelli has observed, in the notion of media activism there are 'two geopolitical faults – the Latin and the Anglo-Saxon – that collide in the global scene of independent communication [...] Media activism explodes at the junction of Internet and Seattle, at the convergence of self-organized networked information with the global movement network' (Pasquinelli 2002, 10. *Author's translation from Italian*). As a consequence, early 2000s' media activism also witnessed the merging of two different attitudes towards bottom-up media which we have already

reviewed.³⁴ the ‘techno-narcissism’ of the *techies* – programmers, hackers, media designers, and the technological naivety of local community-based networks, mainly from the so called ‘Global South’.

In a certain way, media activism re-enacted Fluxus’s ‘intermedia’ practices that used to combine different media and languages (see Bazzichelli 2006a). Often in precarious situations, mediactivists produced grassroots information by using combined low- and high-resolution ICT: Web radio and podcasts, video streaming and FM microradios, open channels and communitarian televisions, satellite transponders and weblogs (Pelizza 2005; 2006). On one hand, for instance, Seattle’s uprising could rely on TV coverage by *Deep Dish TV*, an independent satellite video network founded in mid 1980s by US artists, activists and academics involved in the open channel initiative *Paper Tiger TV* (Drew 2005). On the other hand, the Indymedia website that was launched during the anti-WTO protests in Seattle was based on the open-publishing software *Active* developed by the *Catalyst* community in Sidney.³⁵

The Indymedia Web platform developed by Catalyst was particularly flexible and scalable: contents were automatically ordered by the software, the news section was constantly updated and the publishing system was open to everyone’s contribution. While first users could consult a Web-based guide to get started with video editing and news publishing, members of the nodes used to coordinate through public mailing lists and IRC channels. As a matter of fact, with Indymedia the adoption of an open publishing Web platform, sustained by mailing lists and IRC channels, foreshadowed the massive advent of weblogs in mid 2000s.

Because of their capability to manage collective activity, between 1999 and 2003 Independent Media Centres asserted themselves as models for combined media production, as well as concrete examples of decentralized organization and consensus building through ICT. The global network of local IMC was managed according to some principles proper to the hacker ethics: decentralization, self-management of autonomous local collectives, do-it-yourself (DIY) attitude towards media and technology at large, free access to information and free, collaborative knowledge sharing.

Many organizations started using the Internet and Indymedia websites as tools to coordinate the protests: during the G8 rallies in Genoa in 2001, for

³⁴ We are referring in particular to the second and third type of online community identified by Flichy (2001). See paragraph 1.1.2.1.

³⁵ For a reconstruction of the history of Indymedia’s Weblog and the *Active* software, see Meikle (2002).

instance, the constellation of self-organized, grassroots media gathered through Indymedia Italy acted as the principal source for information retrieval and publishing, used also by national broadcast media. As a consequence, the explosion of the digitally mediated global movement triggered also the interest of political studies in the digital community domain (see Della Porta et al. 2006).

All these reasons mark the necessity to include Indymedia and the media activist movement at large into the composite landscape of communities aggregating through Internet. As Andreas Hirsch, the designer of the *Prix Ars Electronica* competition for digital community, has suggested:

the basic ideas of the internet about 'giving' and 'taking' are not only present on the meme level, but are also coded into the basic protocol architecture of the internet. It would probably be bold to argue that the 'basis' of such protocols shapes the thoughts of users, but to a certain degree it might, if certain other factors come to help. Among those 'other' factors I see the drastic increase in usership of the net between the 1990s and today, a backswing away from the neoliberal ideology together with a certain renaissance of leftist positions, the anti-globalization movement and an entirely new generation of users, who grew up with computers. (Personal e-mail to the Author, 28 September 2007)

However, over the very last years the 'second super-power' – as the *New York Times* titled in March 2003, the day after the global rallies against the war in Iraq – proved to be unable to exert significant influence on the choices in international politics made by the US-UK coalition, as well as to lobby at the social-democratic door. On the contrary, the new measures associated with the 'War on Terror' marked the strengthening of the control over Internet by governments assisted by ICT companies. Therefore, in mid 2000s the neo-anarchic grassroots credo (or better, credos) looking at the Internet as a major channel for the liberation of individuals, the enforcement of democracy and social justice, the proliferation of critical communities or simply the creation of supportive ties on the Net got to a crossroads, as we are going to discuss in the next paragraph.

1.2 From the Prairie to the Battlefield

As we have seen so far, among scholars and experts there is a common agreement on the experiences that marked the birth and the development of the digital communitarian culture until the end of 1990s. This is partly due to a scale factor: until the 1990s the Internet was accessed by few and

homogeneous users. Today, with 1,464 million users³⁶ the situation has changed completely.

As a matter of fact, in late 2000s the notion of digital community has spread in so many domains that one might wonder whether it retains some semantic value, whether it is still possible to distinguish a peculiar substance behind the label 'online community'.

In paragraph 1.3 we shall address some authors that tried to answer this question. Before that, however, in order to understand some aspects of this dilution, we need first to recognize how the anarchic prairie that the Internet was has turned into a battlefield, a field of conflict and competition not very different from the brick-and-mortar world. Our argument is that over the last years the cyberculture that has been nurturing the virtual communitarian utopia of a bottom-up ICT infrastructure bearing the promise of emancipation for the citizenry came to a crossroads. Since early 2000s, many of the beliefs that the digital communitarians inherited from cyberculture have either revealed their inconsistency or had to face empirical counter-evidence. While the previous paragraph observed some of the postulates associated with the digital communitarian culture, by examining their limits this paragraph confutes in particular three myths.

1.2.1 The Dotcom burst and the crisis of the creatives-Internet entrepreneurs coalition

The first communitarian myth that had to face the new climax of early 2000s was the one associated with the emergence of an autonomous creative class whose lifestyle and economic weight could influence the global market – towards informal and more equal organizational forms of labour and production, as well as political systems – towards post-democratic forms of direct participation.

Let's follow the genesis of this myth. As we have seen in the previous paragraph, in mid 1990s' net culture, leftists positions tended to coexist and share resources with neo-liberalist agendas. This coexistence is reflected by the literature on 'immaterial work'.³⁷

³⁶ Source: Internet World Stats <http://www.internetworldstats.com/stats.htm>. Datum updated 30 June 2008.

³⁷ Rullani (2008) defines 'immaterial work' as 'cognitive and explorative work that produces knowledge. Modern work is both self-organizer (it moulds a subjectivity which is self-generated through experience) and reflexive (it is done by human beings who are, above all, in search for a meaning). [...] [Cognitive work's] role consists in explaining the growing complexity of life and production'.

Over the years the actors that led the digital revolution have been called alternatively 'creative class' (Florida 2002), 'hacker class' (Wark 2004), 'creative workers' (Lovink 2003), 'cognitarians' (Berardi 2004). While these labels share some common traits as to the new relevance of knowledge-related assets, they differ very much as far as the assumptions which underpin them are concerned.

For instance, according to Richard Florida the creative class is an emerging subject whose power relies upon the capacity to produce knowledge (Florida 2002). His argument is founded on two presuppositions: that techno-economical innovation is more and more fed by artistic creativity, and that knowledge-based capitalism is pushed to extend its scope in order to grasp the creative potential of those social actors who were at the margins of the old system of production.

According to this position, this new dominant class does not own nor control material means of production, but rather bases its economical power on the immaterial capital of the mind. Furthermore, in Florida's argument Internet companies' executives are themselves included into the creative class. As a consequence, the conflict between capital and labour is reduced to the tensions between creativity and organization, informality that fosters creativity and old hierarchies.

Conversely, McKenzie Wark's hacker class includes creative workers that have been expropriated of their own immaterial means of production (Wark 2004). According to this second perspective, Internet companies, the cultural industry and telcos executives belong to a distinct 'vector class' which founds its economic power on a system that struggles to extend intellectual property rights to all forms of immaterial production. By extending the intellectual property regime with a help from the juridical apparatus, the vector class reduces immaterial commons into goods, thus producing that principle of scarcity which is necessary to the proliferation of the capitalistic market. By conceiving of the hacker class as a by-product of this process, McKenzie Wark's argument thus proposes an original understanding of the traditional Marxist opposition between capital and labour.

Although they show many similarities in other respects, Florida's and Wark's divergent perspectives as to the ownership of immaterial means of production and intellectual property reflect the coexistence of different souls

in the Internet culture of mid and late 1990s.³⁸ This coexistence was made feasible first of all by a cultural compatibility. On one hand, as Lovink has recalled, in mid 1990s Internet was perfectly fitting the libertarian anti-state and market-oriented agenda which was popular at that time. Embodied by Newt Gingrich's 'Contract with America', that agenda was meant to give massive power to financial institutions (Lovink 2003, 63-4).

On the other hand, paragraphs 1.1.1. and 1.1.2 let us discover more profound cultural similarities. As we have seen, libertarianism had fostered forms of organization of labour that were perfectly suitable for neoliberalism. Notably, creative workers and Internet entrepreneurs used to share those decentralized organizational paradigm and self-entrepreneurship ethics that they had both inherited from cybernetics and excellence-oriented peer communities. But they also shared Wiener's suspicion towards big powers as opposed to grassroots organizations: as Castells 2001 has recalled,³⁹ in the New Economy system of values, great amounts of money became a symbol of independence from that traditional corporate world from which both digital wizards and entrepreneurs felt the greatest distance.

But there were also economic interests that sustained the coexistence between creatives and Internet capitals. The non-profit Internet communitarian culture has rarely developed economic models for its sustainability. Or better, its economic models have been mainly based on the concept of 'heterarchy'. Introduced by David Stark in order to explain the behaviour of firms in post-Soviet Eastern Europe, the concept of 'heterarchy' is recovered by Turner (2006) and associated to the ways of evaluating worth on the WELL:

within a heterarchy one encounters multiple, and at times competing, value systems, principles of organization, and mechanisms for performance appraisal. "Heterarchies create wealth by inviting more than one way of evaluating worth". [...] On the WELL, users' abilities to characterize their postings as having value in both the social and the

³⁸ The attentive reader could call this assertion into question by noticing that the two books mentioned were published at the beginning of 2000s. However, we are not saying that the authors were directly involved in the Dotcom culture, but rather that their works 'reflect' a coexistence that was first experienced in the 1990s. After all, as Lovink (2003) recalled, the Dotcom hype used to travel at such a speed that there are few books that were published *during* the phase of expansion. The first studies started being published only in 2000, in concomitance with the NASDAQ slump.

³⁹ See paragraph 1.1.2.

economic registers depended on both the computer technology of the WELL and the cultural legacy of the New Communalist movement. (Turner 2006, 156)⁴⁰

In substance, while voluntarily contributing to the creation of common knowledge, WELLites invested on their reputation capital that ultimately led to a number of working opportunities.

Even if Turner limits the application of the heterarchy concept to the WELL, it is not difficult to recognise a similar mechanism at work among developers and creatives participating in 1990s' digital communities. It is well-known that reputation capital and knowledge that had been acquired through the communitarian activity started being made productive elsewhere in the new euphoric high-tech industry by digital creatives.

To indicate an emergent social class whose roots lay at the convergence of cultural values and economic interests between Internet entrepreneurs, on one side, and the social actors that led the digital revolution, on the other side, Formenti (2002) devised the label 'Fifth State'. In his work following the Dotcom burst and 9/11, Formenti put forward a hypothesis overtly in counter-tendency with those developments. He suggested that – although knowledge workers were undergoing a severe loss of contractual power because of the burst – there still existed some chances to reconstitute the coalition between creatives and entrepreneurial power. If that hypothesis turned out to be right – Formenti argued – there would be good chances for Western democracies to evolve towards post-democratic political systems where forms of representational democracy could mingle with forms of direct participation.

By 2008 Formenti had to admit that his hypothesis would have never come true (Formenti 2008). With the collapse of 500 dotcoms, half million jobs lost in the high-tech industry and three trillions dollars ended up in smoke at NASDAQ, the Dotcom burst not only had made venture capitals to take to their heels, but also had marked the final end of dreams of bottom-up alliances. The Dotcom burst ratified the failure of the coalition between the rebels of the Net and emerging Internet entrepreneurs. If later on the Net Economy did recover from the burst, the coalition between knowledge workers and Internet companies did sink. However, while the ideological alliance between techno-anarchism and neoliberalism broke into fragments in

⁴⁰ The inner quotation is taken from Stark, D. (2001), 'Ambiguous Assets for Uncertain Environments: Heterarchy in Postsocialist Firms', in DiMaggio, P. J., *The Twenty-first Century Firm: Changing Economic Organization in International Perspective*. (Princeton, NJ: Princeton University Press).

2000, another alliance, based on completely different presuppositions, was appearing on the horizon and became solid with 9/11: the alliance between governments and those Internet companies that had survived the Burst and had become giant corporations.

1.2.2 The territorialization of the Net

We saw in paragraph 1.1 that one of the pillars that the digital communitarian culture inherited from cybernetics deals with the possibility to keep the virtual and the brick-and-mortar domains separated. Born together with the efforts to build a network architecture that could survive nuclear attacks,⁴¹ the idea of a virtual network that is unassailable by old 'hard' powers appeared not only in Barlow's Declaration of Independence, in the Electronic Frontier Foundation's Blue Ribbon campaign against the Communications Decency Act and in Rheingold's everyday life reports from the WELL, but also in Indymedia's and cyberpunk's efforts to create self-organized independent digital infrastructures.

This postulate is based on the idea of a complete de-territorialization of the Internet, thought of as an intrinsically borderless network that could escape any effort to reduce it to nation-states' boundaries, sovereignty and, ultimately, laws. However, under the pressures for political and copyright control that followed the War on Terror,⁴² the weakness of this pillar has become evident.

Already in 1999 Lawrence Lessig warned the reader against the architectures of regulation exercised by technologies of 'smooth' commerce, backed by the rule of law (Lessig 1999). More recently, Stanford's researchers Jack Goldsmith & Tim Wu have depicted a more and more controlled and territorialized Internet where the 'Balkanization of the Net' is the result of the teamwork between governments and global Internet

⁴¹ At least, this is the mythology that accompanies the birth of Arpanet. For a confutation of it – that nonetheless does not affect our discussion, see Hafner and Lyon (1996).

⁴² We cannot account here for the numerous studies that since 2001 have been investigating the threats to privacy constituted by technologies of social sorting and control backed by TIA (Total Information Awareness, the global surveillance project designed by Pentagon in 2002 to substitute Echelon) and similar governmental initiatives worldwide. On the value of privacy confronted to national security see, among others, Nissenbaum (2007); Rössler (2005). On dataveillance technologies and the patterns of human coexistence that they enable, especially in the urban domain, see Graham, S. (2004, 2005); Lyon (2002). We ourselves wrote a paper about urban planning challenges and technologies of social sorting in Pelizza (2008). For some lucid reflections about the interrelation of privacy and copyright issues, see Grassmuck (2007).

companies officially fostering the cult of freedom of networking (Goldsmith and Wu 2006).

Goldsmith and Wu suggest that in the last decade Internet has been transformed 'from a technology that resists territorial law to one that facilitates its enforcement' (Goldsmith and Wu 2006, 10). Instead of imposing its cosmopolitan culture on local milieus, in fact, Internet is more and more adapting itself to local conditions and norms. According to the two researchers, three are the factors pushing Internet into this course.

First, it is users themselves that ask for a culture-specific Internet browsing: 'geographical borders first emerged on the Internet not as a result of fiat by national governments, but rather organically, from below, because Internet users around the globe demanded different Internet experiences that corresponded to geography' (Goldsmith and Wu 2006, 49). The first need in this regard is, of course, linguistic. If in late 1990s 80% of Internet contents were in English,⁴³ by 2002 English web pages were 50% of the total amount.⁴⁴ On 30 June 2008, the percentage of Internet users worldwide that do not speak English as first language is 70,6%.⁴⁵ While the amount of English-speaking persons that use Internet grew 203,5% from 2000 to 2008, in the same period the amount of Chinese-speaking Internet users grew 755,1%, Spanish-speaking Internet users grew 405,3%, Portuguese-speaking Internet users grew 668% and Arabic-speaking Internet users grew 2.063,7%. It is evident that if the demand for non-English contents increases at these rates, contents providers will be more and more pushed to offer services that meet local linguistic and cultural needs, thus leading to a jeopardization of the Internet.

The second factor comes consequently. The need to meet local needs can now rely upon powerful geo-identification technologies that can automatically localize the user and thus provide targeted information or block 'forbidden' contents. While geo-ID technologies have at first been developed in order to filter information for commercial purposes, the alliance between Internet companies and governments that followed the Dotcom burst and the War on Terror has in fact shown new control-oriented applications.

⁴³ Source: Wallraff, B. (2000), 'What Global Language?', *Atlantic Monthly*, November. Quoted by Goldsmith and Wu (2006).

⁴⁴ Source: Crystal, D. (2004), *The Language Revolution* (Cambridge, Mass.: Polity). Quoted by Goldsmith and Wu (2006).

⁴⁵ Source of these and of the following statistics: Internet World Stat, 'Internet World Users by Language'. Available at <http://www.internetworldstats.com/stats7.htm>, accessed 30 October 2008.

Goldsmith and Wu dedicate a whole chapter to the Chinese case. Here, the 'Great Electronic Wall' could not have been built without Cisco's gateways and Google's filtering systems. These same Internet corporations that elsewhere are champions of the 'free flows of information' ideology, in China subscribed a binding self-discipline pact according to which they cannot 'produce or disseminate harmful texts or news likely to jeopardize national security and social stability, violate laws and regulations, or spread false news, superstitions and obscenities'.⁴⁶

Chinese Internet writers' arrests are the demonstration of how virtual life can have awful consequences on physical life once geo-ID technologies allow to associate a physical address to an information packet. Furthermore, they reveal that there is no Internet architecture which is 'naturally' uncontrollable:

[the Chinese Government] is trying to create an Internet that is free enough to support and maintain the fastest growing economy, and yet closed enough to tamp down political threats to its monopoly on power. [...] Only time will tell whether the China strategy will work, or whether the sheer volume of information will erode the government's influence and render the Internet in China open and free. But so far, China is showing the opposite: that the Internet enjoyed in the West is a choice – not fate, not destiny, and not natural law. (Goldsmith and Wu 2006, 89-90)

Third element in the Balkanization of the Net, the Chinese government is not the only one that backs its control policies with ID technologies. Also democratically elected governments worldwide have found ways to impose their own laws on that transnational territory that the Internet is. Even if a nation-state can exert coercive power only within its borders, Goldsmith and Wu argue that global Internet companies usually 'hit the ground' in local branches that can be subjected to governments' pressures.

As a matter of fact, Dow Jones, Yahoo, eBay, Pay Pal, Google and MasterCard are examples of large firms with a presence in many nations that had to comply with national laws in the places where they do business. In the case Dow Jones Vs. Gutnick, for instance, Australian billionaire Joseph Gutnick sued Dow Jones and Company – the parent company of American online business magazine *Barron's* that accused Gutnick of tax evasion without proofs – in an Australian court, 'taking advantage of tough Australian libel laws unleavened by the U. S. First Amendment' (Goldsmith and Wu

⁴⁶ AA.VV. (2003), "Living Dangerously on the Net": Censorship and Surveillance of Internet Forums, *Reporters without Borders*. May 12. Quoted by Goldsmith and Wu (2006).

2006, 147). According to the authors, the extraterritorial effects of Australian court's decision (that condemned Down Jones to pay compensation for damages to Gutnick) were absolutely legitimate, since 'a government's responsibility for redressing local harms caused by a foreign source does not change because the harms are caused by an Internet communication' (Goldsmith and Wu 2006, 156).

As Goldsmith and Wu's book title suggests,⁴⁷ once the Internet turns out to be subjected to nation-state sovereignty as far as its local effects are concerned, the core problem is not anymore about techno-pundit's concerns on Internet controllability, but rather about the sources of the law. As Italian former head of the Governmental Agency on Privacy Stefano Rodotà has pointed out, the lack of rules would hand the Internet over the same big powers against which it was originally born.⁴⁸ According to Rodotà (1997), subtracting the Internet to the control of the law established by democratically elected parliaments means turning it into a space where the only rules that are in force are those made by the most powerful private actors, according to their specific needs. As a consequence, with the privatization of regulatory functions, law loses its *super-partes* nature.⁴⁹

Summing up, at the end of the 2000s techno-political developments have shrunked the gap between virtual and physical domains. As a matter of fact, the cyberculture's libertarian credo according to which Internet is intrinsically ungovernable and out of control has turned out to be an illusion. In spite of declarations of independence, today geography matters more than ever.

1.2.3 A second generation of Web? Web 2.0, the renaissance of community on the Net and the quest for value creation

The third libertarian belief that has been facing scepticism over the last years is the one asserting that the sharing of information would empower

⁴⁷ *Who Controls the Internet? Illusions of a Borderless World.*

⁴⁸ Turner's reconstruction of how *Wired*'s editorial board turned out to sustain conservative politicians from 'the Big Old Party' is exemplary in this respect, even if it adopts a purely cultural perspective.

⁴⁹ Even if we cannot account here for the juridical literature on the sources of Law when acting on a transnational level, it should be mentioned that Rodotà talks about the privatization of governance functions on the Internet (*Lex Informatica*) in a way that very much resembles Saskia Sassen's concerns about the privatization of the regulatory functions in transnational politics and trade (*Lex Mercatoria*). See Sassen (2006, 184-271). This similarity could be seen as a further element suggesting the artificiality of any distinction between virtual and physical realms, since they both have to face similar challenges.

individuals and communities against big governmental and commercial powers.

As we saw in paragraph 1.1, the creation of commons and the ethics of sharing lie at the very heart of the Internet, they are embedded into its same architecture. However, we are not referring here so much to free software architecture, but rather to less structural types of information produced by net surfers through multi-interactive commercial platforms and labelled as 'user-generated contents' (UGC). On a more abstract level, we are addressing the theory of action according to which the spontaneous online interactions of millions of individuals worldwide would produce diffuse wealth, stronger participation to political processes, reduction of social inequalities, empowerment of disadvantaged sectors of population, and so on and so forth.

Let's make a step behind. Soon after the Dotcom burst, Internet pundits and cyberculturalists denied the economic models they had followed over the previous years and re-asserted the inherently open and sharing-oriented nature of the Internet:

so much money flew around dot-coms, that it hid the main event on the Web, which is the exchange of gifts. While the most popular 50 websites are crassly commercial, most of the 3 billion web pages in the world are not. Only thirty percent of the pages of the Web are built by companies and corporations like *pets.com*. The rest is built on love, such as *care4pets.com* or *responsiblepetcare.org*. The answer to the mystery of why people would make 3 billion web pages in 2,000 days is simple: sharing. (Kelly 2002)

In some way, this quotation might represent the first involuntary reference to so called 'Web 2.0', that is, Web platforms where information is supplied by users themselves.⁵⁰ Yet, one has to wait a couple of years in order that this recovered ethics of sharing produces a new business model.

Between 2004 and 2005, in fact, the Net got re-embodied into the user-generated-content-driven Web as the Net Economy got recovered from the Dotcom burst into a newly new business model better fitting the inherent openness of the medium. Simultaneously, 'digital community' had already

⁵⁰ For the most extended, classical definition of 'Web 2.0' see O'Reilly (2005). For a further, condensed definition see Graham, P. (2005). Paul Graham describes the origins of the term from the title of a series of \$2800-fee conferences oriented to 'throngs of VCs and biz dev guys' organized by O'Reilly Media and Medialive International in 2004-5. Graham also provides a definition of Web 2.0 as user-oriented 'Ajax' Web-based applications that can rely upon high-quality free contents thanks to systems of selection based on the vote of crowds of people ('voters do a significantly better job than human editors').

turned into a much inflated expression and the opportunity was appropriate to rejuvenate it with 'social networks', 'mobs', 'swarms' (Boyd and Ellison 2007; Rheingold 2002).

According to Tim O'Reilly – the inventor of the popular expression – the Web 2.0 constitutes an effort to devise a business model that respects the sharing-oriented nature of Internet, after the dotcom's failure demonstrated the inadequacy of those business models underpinned by the old pay-per-view idea. In mid 2000s it was necessary to create new models that relied upon online sociability as a fundamental source of value:

Web 2.0 is the business revolution in the computer industry caused by the move to the internet as platform, and an attempt to understand the rules for success on that new platform. Chief among those rules is this: Build applications that harness network effects to get better the more people use them. (This is what I've elsewhere called "harnessing collective intelligence.") Eric Schmidt has an even briefer formulation of this rule: "Don't fight the internet." That's actually a wonderful way to think about it. Think deeply about the way the internet works, and build systems and applications that use it more richly, freed from the constraints of PC-era thinking, and you're well on your way. Ironically, Tim Berners-Lee's original Web 1.0 is one of the most "Web 2.0" systems out there -- it completely harnesses the power of user contribution, collective intelligence, and network effects. It was Web 1.5, the dotcom bubble, in which people tried to make the Web into something else, that fought the internet, and lost. (O'Reilly 2006)

This long quotation is useful to recall a fundamental aspect that is often forgotten by the hype around user-generated contents and multi-interactive platforms subsumed under the umbrella term 'Web 2.0': this kind of services are first of all a response to the need to create new ways to produce value on Internet. Although this statement is a truism, it is usually underestimated in accounts dealing with Web 2.0 platforms, even when they come from academic domains. The famous December 2006 issue of *Time*, for instance, is a compendium of much Web 2.0 rhetoric on renewed democracy, solidarity and grassroots cooperation.

As usual for *Time*, December 2006's cover story identified the 'Person of the Year'. That year, under the title 'Time's Person of the Year: You', the magazine decided to nominate the crowds contributing to the amount of knowledge available for free on the Web:

we're looking at an explosion of productivity and innovation, and it's just getting started, as millions of minds that would otherwise have drowned in obscurity get backhauled into the global intellectual economy. Who are these people? Seriously, who actually sits down after a long day at work and says, I'm not going to watch *Lost* tonight. I'm going to turn on my computer and make a movie starring my pet iguana? [...] The answer is, you

do. And for seizing the reins of the global media, for founding and framing the new digital democracy, for working for nothing and beating the pros at their own game, TIME's Person of the Year for 2006 is you. (Grossman 2006)

Apart from the obvious consideration that the rationale according to which making a movie starring an iguana is supposed to have something to do with founding the new digital democracy is not fully graspable, the postulate that asserts that including millions of minds into the global intellectual economy would cause an explosion of innovation and seize the reins of global media is all but tested. As many authors have argued, for instance, the blogosphere can be very conservative and can be also a promoter and not only a competitor for mainstream media (Lovink 2007).

From a further perspective, *Time's* article recovers cyberculture's duality between institutions and simple individuals, top-down power and bottom-up communities.⁵¹

look at 2006 through a different lens and you'll see another story, one that isn't about conflict or great men. It's a story about community and collaboration on a scale never seen before. It's about the cosmic compendium of knowledge Wikipedia and the million-channel people's network YouTube and the online metropolis MySpace. It's about the many wresting power from the few and helping one another for nothing and how that will not only change the world, but also change the way the world changes. (Grossman 2006)

Apart from the high-sounding communalist rhetoric, the article's theory of action is explicit: Web 2.0 deals with small contributions that – when assembled together in a Web platform – gain a higher weight than professional contents and thus 'wrest power from the few' and give it back to 'the many'. However, this theory of action does not mention *which* power to do *what*, nor what is supposed to keep community together, it does not show *in which direction* the world is changing its way of changing, nor *who* will benefit from these changes. In other words, this article replaces technological determinism with sociological determinism, but refrains from questioning the cause-and-effect explanatory model underpinning the alleged correlation between collaboration and empowerment. Even if it is people's behaviour and not technology that determines the redistribution of power, the questions about *why* strangers collaborate and how collaboration is supposed to lead to empowerment remain unanswered.

⁵¹ See paragraph 1.1.1.

Counter-evidences to this functionalist (and somewhat ideological) theory of action come from politics of information, cultural studies and labour economy.

First, there is the unexpected evidence according to which multi-interactive technologies, that are said to empower individuals by providing tools for self-expression and collaboration, are scarcely used by political movements, which are supposed to be the champions of free speech and grassroots organization. On field research has demonstrated, in fact, that political movements are very reluctant to adopt multi-interactive services in their websites (Della Porta et al. 2006).

The 'Searching the Net: An Analysis of the Democratic Use of Internet by 266 Social Movement Organizations' survey systematically analysed the main features of the websites of 266 social movement organizations involved in the Global Justice Movement in Italy, France, Germany, Great Britain, Spain and Switzerland, as well as at the transnational level. The results show that Internet is used to satisfy five functions:

1. spreading alternative knowledge: 90% of websites publish papers and dossiers
2. identity-building: more than 50% of analyzed websites produce a newsletter
3. multiplying the opportunities for debating and communicating: about one third of the websites provide an asynchronous space for discussion (forum and/or mailing-list)
4. improving the transparency and the accountability of the organization: 85% of the websites publish their constitution online, almost two thirds of the websites contain information on the organizational structure of the group
5. online and offline mobilization: more than 60% of the organizations publish online their action calendar

What is striking in this research is the fact that – albeit the efforts to foster participation and empowerment constitute a large amount of the activities carried on online by the movements analyzed – multi-interactive tools other than first-generation forums and mailing lists are not very common. Only 10% of social movement's websites, in fact, use multi-interactive technologies allowing UGC (Della Porta et al. 2006).

As the *Networked Politics* think tank has highlighted, elements indicating that social movements make a limited use of the Web 2.0

technology come also from other two evidences. First, while Wikipedia started using wiki technology in 2001, the first wiki was used in social forums in 2004; second, Indymedia, which introduced open-publishing platforms in political action,⁵² is now losing popularity and recent initiatives aimed at building interactive websites to organize social forums and to collect the social memory of the process had very limited diffusion (Fuster i Morell 2007). As a matter of fact, all these evidences coming from the field of political action call into question the capability of Web 2.0 tools to foster bottom-up political participation and empowerment.

Second, as Formenti (2008) has pointed out, the notion of empowerment underpinning the Web 2.0 hype makes it difficult to distinguish between democratic engagement and cyber-ideology, 'cyber-soviet'⁵³ and 'cyber-pop'. The Italian scholar provocatively wonders whether empowerment coincides with the possibility to make one's own post public among millions of other ones, or whether it lies in the wisdom of the crowds that are supposed to always end up awarding the most deserving contributions. While techno-enthusiasts cannot refrain from claiming their absolute confidence in the capacity of multi-interactive technologies to select the best contributions from the millions of flows of information that converge in popular platforms like YouTube and MySpace, according to Formenti the definition of 'best' is never 'natural' nor objective, but is embodied into filtering code. Google's Page Rank, for instance, does not measure the quality and reliability of the information contained in the pages indexed, but rather a sort of 'popularity index' (see Ippolita 2007, quoted in Formenti 2008).

Furthermore, Formenti recalls that empowerment does not come from the use of ICT for entertainment purposes, like in most Web 2.0 applications, but rather from the capability to harness its potential for life-long learning, job finding, cognitive enrichment, democratic participation (Formenti 2008, 244). Referring to a survey conducted by ACNielsen, Formenti updates the notion of 'cultural divide' to indicate the distinction, among strong ICT users, between enthusiast consumers of information technology that show low overall cultural consumption rates (*technofans*), and those who combine technological interest with high rates of cultural consumption (*eclectics*). While these latter users retain the cultural skills that allow them to bend ICT to their needs, technofans are more likely to enthusiastically adopt ICT

⁵² See paragraph 1.1.4.

⁵³ With 'cybersoviet' Formenti (2008) names self-organized initiatives run by hackers and virtual communitarians that aggregate online and do not transcend from political concerns when dealing with forms of internal direct democracy.

without developing the ability to harness its potential for personal enrichment. According to Formenti, this cultural divide can easily be transformed into 'a new class divide, since there is a significant trend in intergenerational transmission of attitudes towards ICT'.⁵⁴

Third, the most elaborate counter-arguments to the Web 2.0's claims to empower individuals and communities come from the economy of labour. If the openness of the digital architecture – of code, protocols, practices and standards – is a *condicio sine qua non* for the same existence of the Internet as we know it, the question on how a digital commons-driven economy should distribute resources and wealth is still matter of dispute. As a matter of fact, not only online relationships constitute a highly-targeted audience for profits based on adverts and data mining, but they also act as content producers in a newly New Economy founded on the 'cult of the amateur'. Still, only very rarely forms of redistribution of financial resources correspond to the voluntary supply of UGC.

Formenti (2008) numbers seven examples of Web 2.0-based business models that have succeeded in 'harnessing the collective intelligence' of users by deploying technologies of participation. First, book reviews by users allow book sellers like Amazon to better profile niches of consumption, thus facilitating other customers' choices. This involvement of the users has been of crucial importance in building Amazon's global leadership. Second, commercial intermediaries like e-Bay create value by providing the technological infrastructure that sustains the reciprocal trust of sellers and buyers. Intermediaries do not sell anything, but keep a percentage of the transaction value obtained from the trust supplied by sellers/buyers themselves. Third, more and more often newspapers and broadcast networks obtain for free photos, video footage and other material by individuals equipped with prosumer technologies who happened to be in the right place at the right time.

Fourth, in the case of YouTube, UGC provide reliable ways to monitor cultural trends in real time, while – fifth source of value – traditional advertising finds new stimuli in fans' posts dealing with specific products and – sixth source of value – cultural industry's R&D investments may be reduced thanks to the easiness to conduct talent-scout activities online. The seventh

⁵⁴ In his argumentation Formenti quotes the results of the 'Liquidi & Mutanti. Industrie dei contenuti & consumatori digitali' survey conducted by ACNielsen for the Italian Permanent Observatory on Digital Contents. A summary of the results of the survey are available at http://www.osservatoriocontenutidigitali.it/Portals/22/File%20allegati/OCD_sintesiindagine.pdf, accessed 30 October 2008.

source of value deals with the spontaneous activity of collaborative categorization performed by millions of individuals online. According to Formenti, 'folksonomies' produce value not only because they create statistically analyzable semantic clusters, but also because they help defining the innumerable niches that constitute the 'Long Tail' (see Anderson 2006 and below).

However, probably the most interesting example of business model based on UGC comes from \$ 15bn *Facebook*. This popular social networking site⁵⁵ in November 2007 saw *Coca-Cola*, *Blockbuster*, *Verizon*, *Sony Pictures*, *Condé Nast* and seven other global brands make strong investments in advertising through its platform. Furthermore, it is fresh news that *Facebook* is launching a new generation of commercials called 'engagement ads' (Boorstin 2008). With engagement ads, *Facebook* members will be asked to respond to ads that pop up when they log in, by evaluating a product. Their response will then be shared with the user's *Facebook* friends. As a matter of fact, these ads will ask *Facebook* users to generate contents about a marketer's product or brand, which *Facebook* will then disseminate throughout their networks of friends. The company began testing the format in August 2008 and will offer it to all its advertisers in November 2008.

As Guardian's journalist Tom Hodgkinson has critically pointed out, the interest of giant companies towards 59 millions potential advocates of their brand is self-evident:

[the creators of the site] simply sit back and watch as millions of Facebook addicts voluntarily upload their ID details, photographs and lists of their favourite consumer objects. Once in receipt of this vast database of human beings, Facebook then simply has to sell the information back to advertisers, or, as Zuckerberg puts it in a recent blog post, 'to try to help people share information with their friends about things they do on the Web'. [...] 'Share' is Facebook speak for 'advertise'. Sign up to Facebook and you become a free walking, talking advert for Blockbuster or Coke, extolling the virtues of

⁵⁵ On whose board three members sit: its young creator Mark Zuckerberg, venture capitalist Jim Breyer and neocon futurist and hedge fund manager Peter Thiel.

these brands to your friends. We are seeing the commodification of human relationships, the extraction of capitalistic value from friendships. (Hodgkinson 2008)⁵⁶

Similar critiques focusing on the production of value from non-economical activities are becoming increasingly frequent, not only among Internet commentators, but also among scholars. The post-Operaist critique to the cyberculture paradigm, for instance, has been developing a similar argument by questioning the principle of symmetry between material resources and symbolic production typically fostered by those FLOSS activists and *digerati* who envision a cyberspace made of immaterial flows and equal opportunities. In a recent book, Matteo Pasquinelli calls into question the 'Ideology of free culture' by arguing that the immaterial and the economical flows interact in an asymmetrical way.

Introducing Michel Serres' notion of 'immaterial parasite',⁵⁷ Pasquinelli (2008) argues that technology acts as an asymmetrical arrow – a 'parasite' – absorbing and condensing energy from the material domain into the immaterial one:

what happens to network subcultures when the network is outlined as a massive cybernetic parasite? It is time to re-introduce a sharp asymmetry between the semiotic, technological and biological levels, between material and immaterial. By the conceptual figure of the *immaterial parasite* I name precisely the exploitation of the biological production through the semiotic and technological domain: material energy and economic surplus are not absorbed and consumed by digital machines but simply allocated. The immaterial flow extracts surplus from the material flow and through continuous exchanges (energy-commodity-technology-knowledge-money). (Pasquinelli 2008, 3)

According to Pasquinelli, FLOSS and 'digitalism' are ideologies, as they have never questioned how surplus is accumulated through Internet-based

⁵⁶ That Hodgkinson's tone is all but exaggerated is demonstrated by the same firms' representatives commenting the agreement: 'with Facebook Ads, our brands can become a part of the way users communicate and interact on Facebook' (Carol Kruse, vice president, global interactive marketing, the Coca-Cola Company); 'we view this as an innovative way to cultivate relationships with millions of Facebook users by enabling them to interact with Blockbuster in convenient, relevant and entertaining ways. This is beyond creating advertising impressions. This is about Blockbuster participating in the community of the consumer so that, in return, consumers feel motivated to share the benefits of our brand with their friends' (Jim Keyes, Blockbuster chairman and CEO). Comments quoted in Hodgkinson (2008).

⁵⁷ Pasquinelli cites Serres, M. (1980), *Le parasite*. (Paris: Grasset). Transl. (1982), *The Parasite*. (Baltimore: Johns Hopkins University Press).

collaborative activities, nor they have ever questioned the way value is re-allocated once it hits the ground in the metropolis (as real estate speculation), media (as monopoly of online spaces), knowledge (as revenues on intellectual property), financial markets (as stock exchange speculation). The ideology of the gift economy postulates that Internet is virtually free of any exploitation and tends naturally towards a social equilibrium: 'here digitalism works as disembodied politics with no acknowledgement of the offline labour that is sustaining the online world (a class divide that precedes any digital divide)' (Pasquinelli 2008, 4).

Despite a rigid structuralist approach, similar perspectives are of great merit in focusing back the discussion on the means of production in a domain that has for too long celebrated dematerialization, and in introducing a perspective of conflict into digital utopianism. Similar approaches help in raising the question on whether the supposed empowerment of individuals and communities through Web 2.0 tools belongs only to the immaterial domain or it hits also the material ground in terms of distribution of living resources and wealth.

As a matter of fact, although UGC act as source of value in Web 2.0 business models, none of the most popular Web 2.0 platforms provides for the remuneration of amateur authors, in turn.⁵⁸ According to an increasing number of observers and scholars, the paradox of an informal gift economy turned into a hundred-million-dollars machine passes through the appropriation of the communitarian, techno-libertarian vernacular by the language of Internet corporate companies. As Lovink (2007) has pointed out, while the 'Ideology of the free' has been pushing millions of people to upload their contents on Web 2.0 platforms, there is a endemic lack of business models that foster an impartial, distributed and decentralized Internet economy.

According to Lovink and other scholars, lacking a similar business model, the activity of producing contents to be published on Web 2.0 platforms becomes a zero-sum game. While Internet corporations compete on their revenues (Bradshaw and Garrahan 2008), not only content

⁵⁸ One of the few exceptions is the video sharing platform *Revver*. Another case is the *AdSense* service by Google allowing targeted adverts banners to be published on personal websites and blogs. See http://www.google.com/services/adsense_tour/index.html. Already on 27 January 2007, during the World Economic Forum in Davos, Switzerland, *YouTube*'s founder Chad Hurley announced that a revenue-sharing system was being developed in order to 'reward creativity' (Weber 2007). Even if at that time the system was said to be expected in few months, almost two years later there is no trace left of it.

producers supply their time and cognitive resources for free, but they also have to pay in order to exhibit their works in terms of hardware, connection fees, software updates. This aspect – Lovink argues – is usually taken for granted and the ways whereby amateur and professional authors earn a living are commonly seen as a private affair.

According to Lovink (2007), the 'Ideology of the free' is systematically avoiding the crucial issue of a distributed economy in the so called 'knowledge society'. While 'liberal communists'⁵⁹ like Joichi Ito, Yochai Benkler, Tim O'Reilly, Jimmy Wales evade questions about their own business models, they keep talking about users, developers, citizens that would need to be 'liberated', rather than enabled to earn a living from their creativity:

in order to open new social spaces for action, it is necessary to get rid of the religion of the free: 'social media' need to develop their own economy. Giving one's own contents for free should be a voluntary, generous act and not the only option available. Instead of celebrating the amateur, we should develop a culture of the Internet that help young amateurs to become professionals. And this cannot happen if we preach to them that the only choice they have is to make ends meet through a McJob during daytime, so that they can celebrate their "freedom" during the long night hours spent online. A redistribution of money, resources and power is necessary. (Lovink 2007, 37 of Italian edition. *Author's translation from Italian*)

If amateurs encounter difficulties in becoming professionals, a further limit of the emerging commons-based economy is the loss of power of professional figures in the cultural industry, being replaced by amateurs. According to Lovink,⁶⁰ in the neo-liberalist approach professionals are conceived of as less acquiescent than amateurs, even when they have abandoned a compensation model based on intellectual property rights. As a

⁵⁹ This label, quoted by Lovink (2007, 11 of Italian edition), was originally coined by Olivier Malnuit in his 'Ten Liberal Communist Commandments' published by French magazine *Technikart*. The label indicates that economical paradigm that sees copyright as an impediment to knowledge-based economical flows and fosters the creation of immaterial commons while recovering Adam Smith's theory of the invisible hand. See Zizek, S. (2006), 'Nobody has to be vile', *London Review of Books*, available at <http://www.lrb.co.uk/v28/n07/zize01.html>, accessed 31 October 2008. Benkler (2006) has probably elaborated the most complete version of this post-modern eschatology: he gets to foresee a new form of capitalism freed from private property. For an accurate analysis of the theoretical bases of this school of thought, see Formenti (2008).

⁶⁰ Who, by the way, has only recently been granted a tenure at University of Amsterdam, after a life as animator of underground initiatives like *Digital City Amsterdam*, *Nettime*, *Nex5Minutes*, *FibreCulture*.

consequence, while the 'networked organization' outsources more and more risks to the distributed contributors on the Web, it shrinks R&D resources for professionals. The concern that the cult of the amateur constitutes a threaten for the living of creative workers is shared by ICT analyst Nicholas Carr. In his effort to formulate counter-arguments to the Web 2.0 hype, Carr has questioned the effective quality of Wikipedia's articles, while admitting that the search for quality tends to be overwhelmed by the search for free contents:

the Internet is changing the economics of creative work - or, to put it more broadly, the economics of culture - and it's doing it in a way that may well restrict rather than expand our choices. Wikipedia might be a pale shadow of the Britannica, but because it's created by amateurs rather than professionals, it's free. And free trumps quality all the time. So what happens to those poor saps who write encyclopedias for a living? They wither and die. The same thing happens when blogs and other free on-line content go up against old-fashioned newspapers and magazines. [...] Implicit in the ecstatic visions of Web 2.0 is the hegemony of the amateur. I for one can't imagine anything more frightening. (Carr 2005a)

Yet, authors' loss of contractual power is not only due to their replacement with amateurs, but it seems to be due also to the organizational changes the creative industry is undergoing. In another article about the theory of disintermediation, Carr argues that in the Internet-content-production and distribution chain the most profitable position is that of the intermediary, and not that of the author. Contrarily to early claims celebrating the end-to-end pattern of communication enabled by the Web which was supposed to free authors from the costs associated with intermediating functions, 'internet continues to be a rich platform for intermediation strategies, and it's the intermediaries who stand to skim up most of the profits to be made from Web 2.0' (Carr 2005b).

Venture capitalist David Hornik has linked the renewed relevance of intermediaries to the Long Tail paradigm.⁶¹ Hornik argues that there are essentially two types of technology (and actors, we would add) that benefit economically from the Long Tail: aggregators and filterers. This is possible because while aggregators and filterers rely upon the increasing volume and

⁶¹ The famous 'Long Tail' economic paradigm illustrated by Wired editor Chris Anderson (Anderson 2006) asserts that products that are in low demand or have low sales volume can collectively make up a market share that rivals or exceeds the relatively few current bestsellers and blockbusters, if the store or distribution channel is large enough. Examples of such mega-stores include Amazon.com and Netflix.

diversity of content to boost their value, 'that growth of content will not have a material impact upon the value of any one piece of content floating somewhere in the Tail' (Hornik 2005). That is, the value produced by filtering and aggregating activities will all go to the benefit of the intermediaries, and nothing is expected to go to the content producers.

If these previsions are confirmed,⁶² they will not only shape the crisis of early XX century sharp separation between labour and non-economical activities, but also call into question the same foundations of the Internet free culture. Readers could probably remember that in 2001 Lawrence Lessig numbered the features upon which the openness of the Internet architecture relies. Among these, Lessig conceived of the end-to-end (e2e) principle of direct communication between sender and receiver as the crucial element in the design of a commons. The e2e principle embodied into peer-to-peer architectures led Lessig to assert that the wisdom of the network lies on the single terminals and not on the network itself. Now that Web 2.0 platforms that aggregate and filter contents have centralized the wisdom of the network, one could wonder upon which new principles the openness of the Internet should rely.

As far as this research's focus is concerned, the point is not so much about questioning Web 2.0 models as initiatives that seek to make profits out of users' contents. Late 1990s' Bubble has brought with it a much more disenchanted gaze than that shown by the prophets of the digital harmony and of the gift economy (that nonetheless often took active part in the Bubble). Rather, the point is about understanding what remains of the 'digital community' once communal ties based on solidarity and the gift economy not only coexist with, but are also invoked as the cornerstone of commercial activities whose revenues are kept in the solid hands of few corporations. While the benefits for Internet companies that act as aggregators and filterers are easily quantifiable by analysts in terms of millions of dollars,⁶³ the theory of action according to which participating in Web 2.0 open-publishing should

⁶² As it is well-known, currently there are few reliable data regarding how many people use Web 2.0 tools and the value produced by these activities. Previsions can thus be carried on mainly on the basis of marketing researches and companies' balance sheets.

⁶³ For instance, in 2008 *YouTube* is expected to produce \$ 100 millions of revenue in US and between \$ 200 and 250 millions worldwide, while *Google* paid 1,65 billions to take it over in 2006. Source: Bradshaw and Garrahan (2008). In 2007 *Facebook*'s revenue amounted to \$150m millions, while they are expected to reach \$ 265 millions in 2008. Source: Swisher (2008).

foster community empowerment, produce diffuse wealth and boost stronger participation to political processes is not as much self-evident.

For sure, the supposed empowerment does not pass through the possibility to earn money from one's creative work. It is likely that the concept of 'heterarchy' that Turner (2006) introduced in the digital community domain can still work for social network sites like *Facebook* and *MySpace*, but it is more difficult to see how it could work for platforms like *YouTube*.

According to an emergent scholarship on social network sites (SNSs), participation in services like *Friendster*, *Orkut* or *Facebook* provides resources for identity-building and reputation management. For instance, Donath and Boyd (2004) have argued that SNSs allow users to negotiate presentations of self and have suggested that the 'public display of connection' serves as an important identity signal that helps people navigate the networked social world. In addition, Boyd (2006) has pointed out that 'Friends' in SNSs provide users with an imagined audience to guide behavioural norms. They act as self-presentational devices. Furthermore, Choi (2006) has found that 85% of respondents to a Korean study 'listed the maintenance and reinforcement of pre-existing social networks as their main motive for Cyworld use' (Choi 2006, 181, quoted by Boyd and Ellison 2007).

If we take into account these studies, the question becomes whether sociability in itself can be considered as an empowering factor, or whether it acts as a means to reach further resources on different domains.⁶⁴ However, in this second case, there are currently very few studies that identify the nature of these further resources. Some, then, could also find sociability in itself a poor outcome, especially if one considers that it is paid in that precious currency that privacy is (see Barnes 2006).

In any case, the critical perspectives we have reviewed in this paragraph show that the advantages for individuals and communities cannot be simply postulated, but need to be investigated by asking contributors themselves about their own theory of empowerment. Furthermore, it should be investigated what is the space left for conflict when the advantages are not perceived. These are exactly the objectives of this research. Before embarking on this task, though, we need to first review two theories that try to answer the question about what remains of online communities once the techno-libertarian belief in an immaterial economy of the 'free beer' that was

⁶⁴ We are of course referring here to the notion of 'social capital', a cornerstone in current sociology of networks.

supposed to liberate individuals from the archaic market model based on *ancienne régime*-like copyright has come to a crossroads.

Box 1 – The manifesto of the ‘No Screw Tube’ campaign numbering seven good reasons not to upload videos on YouTube-like Web 2.0 platforms. The campaign is promoted by Transmission.cc, a global network of citizen journalists, video makers, artists, researchers, hackers and web producers who are developing online video distribution tools for social justice and media democracy (<http://transmission.cc/>)

Why NOT Just Use YouTube?

The ‘No Screw Tube’ campaign is beginning...

1. Exploitation:

ScrewTube exploits your free videomaking to gain ad revenue.

2. Surveillance:

Posting on YT risks surveillance and IP tracking, both by corporations and the state. For example in 2004 Yahoo collaborated with Chinese authorities to identify dissident blogger Shi Tao. He is now serving 10 years in jail. Many sites record your IP address, not just corporate projects.

3. Censorship:

Posting on YT opens the door to censorship since they will do takedowns at State request or for copyright violations.

4. When Sharing isn't really sharing:

Sites like YT only allow sharing with other members, or by embedding YT videos in your site or blog. There is no re-distribution via p2p networks, or availability of high-resolution downloads for screenings.

5. When Free isn't really free:

Though free to use, the platform is closed – using YT technology entails using YT. With free software platforms, anyone can create their own video-sharing site.

6. When a community isn't really a community:

YouTube was sold to Google for \$1.65 billion in Google stock. If it can be bought and sold, is it really a community? Editorial and software control should be in the hands of the user community. Control of ScrewTube sites is organised by the profit motive.

7. Intellectual Property:

Sites like ScrewTube place exploitative terms and conditions on your contributions, allowing them to re-sell and remix your work.

Using existing ethical and pirate technologies, we can do much, much better...

Projects like VisiononTv, Ifiwatch.tv, Engagemedia.org (Australia) and numerous Indymedia video spin-offs, coordinated through Transmission, are linking up their databases to create decentralised search tools. This will greatly increase the profile and possibilities for social justice video online.

Using open source tools these projects hope that once you start watching in this way you won't go back! Miro allows subscription to different channels of video content; some themed and some the pick of channel editors. You can even subscribe to YouTube channels and it

sneakily downloads those videos for you.

Independent Media is not stagnant, it's mutating. We'll start to see the fruits of this mutation soon... so stay tuned.

1.3 In Search of Community

It should be clear by now what we meant when we said that the anarchic prairie that the Internet was has turned into a battlefield. Over the last decade, many of the utopias that the digital communiterians inherited from cyberculture have revealed their empirical inconsistency. By confuting in particular three myths, the previous paragraph examined some of the counter-evidences that the digital communiterian culture is facing. Notably, we got to acknowledge that:

- the Dotcom burst has ratified the failure of an imagined coalition between the rebels of the Net and Internet entrepreneurs. As a consequence, dreams of grassroots cultural alliances – or even class-building efforts – cannot rely upon the support of venture capitals anymore (if ever);

- the Net is not a space detached from the brick-and-mortar world: it is simply impossible to distinguish a material and a virtual realm anymore. As a matter of fact, the recent alliances between governments and big Internet companies have contributed to shrink the autonomous spaces on the Internet. Corporate geo-ID technologies enable the enforcement of territorial law, both by dictatorial and democratic powers. As a consequence, the cyberculture's libertarian credo according to which Internet is intrinsically ungovernable and out of control has turned out to be an illusion;

- the belief according to which the sharing of information would empower individuals and communities against big governmental and commercial powers cannot be taken for granted. The 'Ideology of the free' risks to hide what is at stake when we talk about digital communities and their empowerment through the creation of a digital commons. As a matter of fact, the production of value on the Internet – and on Web 2.0 platforms, in particular – relies upon communities as key actors, but does not necessarily redistribute part of the resources created to them. Actually, the sources of empowerment for individuals and communities providing their contents on Web 2.0 platforms and social network sites are all but known.

As a consequence, some 'memes', some cultural elements that accompanied the birth and development of the digital community paradigm have turned out to be in contrast with the evidence provided by the latest developments. First, the opposition between simple citizens and big powers

that Rheingold and the WELL alike inherited from Wiener has witnessed the hype of crowds voluntarily contributing their contents and personal data to Internet corporations that act as aggregators and 'networkers'. Instead of aggregating and exchanging information on independent peer-to-peer networks, more and more citizens rely upon few big corporations in order to socialize online. Second, early academic and hacker confidence on the impossibility to control the Net have met geo-ID technologies that enforce the territorialization of law, and sorting technologies that challenge privacy rights. Third, New Communalists' decentralized organizational paradigm and the ethics of self-entrepreneurship and informal labour have turned out to fit cultural industries' organization that outsources the content-production function to amateurs while shrinks resources for professional creative workers. Fourth, the gift economy fostered by excellence-oriented networks and FLOSS communities has turned out to sustain the million-dollar economy of the new big Internet powers that gain revenues by promoting old global brands through user-generated-contents.

Similar arguments have led many Internet scholars to acknowledge that over the last decade the utopia of an Internet rooted into communitarian harmony has left room to conflicts and competitions which are not very different from the ones affecting the brick-and-mortar world. Today, these contradictions have become so manifest that many wonder whether we can still talk about community on the Internet, and, if so, under which conditions.

This paragraph tackles some attempts to answer this question by dealing with social sciences scholars and media theorists who have formulated different responses. Beside the point of view of those who highlight the structural variations in the wider notion of 'community' in late Modernity, in fact, this paragraph will also deal with the positions of those authors arguing for new forms of communal ties on the Net, on condition that the communitarian efforts get rid of the libertarian paradigm.

1.3.1 From groups to networks

The position arguing that communitarian ties have been facing deep changes is shared also by two of the most influential social scientists that have contributed to shape the field of Internet studies: Manuel Castells and Barry Wellman. Yet, their position is not only focused on online communities, nor it is limited in time to the evolution of the Internet, rather, it tackles a deeper societal transformation.

By using the expression 'networked individualism', Castells and Wellman call into question the same possibility to identify communitarian

assemblages online. More precisely, they both argue that the traditional notion of online community as bounded group has been replaced by networks of individuals interacting online in one-to-one patterns of communication. In Castells' 'space of flows', for instance, the individual is the hub of different kinds of flows that move from the place to the subject and vice versa.

According to Castells, social relationships are over determined by the technical organization of the means of production brought about by informational capitalism. That is, sociability is moulded on the shape that the dominant mode of production takes in the Information Age. Since the dominant form of organization of informational capitalism is the network (Castells 1996), social relations reflect a similar structure. 'Networked individualism' is thus a specific model of sociability rooted into the specific relationship between labour and the networked enterprise proper to the Information Age:

Now the dominant trend in the evolution of social relationships in our societies is the rise of individualism, in all its manifestations. [...] Social scientists, such as Giddens, Putnam, Wellman, Beck, Carnoy, and myself, have emphasized the emergence of a new system of social relationships centered on the individual. After the transition from the predominance of primary relationships (embodied in families and communities) to secondary relationships (embodied in associations), the new, dominant pattern seems to be built on what could be called 'tertiary relationships', or what Wellman calls 'personalized communities,' embodied in me-centered networks. It represents the privatization of sociability. This individualized relationship to society is a specific pattern of sociability, not a psychological attribute. It is rooted, first of all, in the individualization of the relationship between capital and labor, between workers and the work process in the network enterprise. (Castells 2001, 128)

Me-centred networks can establish themselves offline or online or both: it is not the dichotomy material Vs. virtual that interests Castells the most, but rather the opposition between traditional (and somewhat mythological) territorial communities structured around dwelling proximity and social ties based on cultural affinity. According to Castells and other influential scholars he quotes (see Wellman and Gulia 1999, among others), territoriality plays a less and less relevant role in shaping social relationships in advanced societies, being replaced by similarity of interests. In particular, the Catalan sociologist tends to associate the territorial type of relationship with the label 'community' and the cultural one with the term 'network'. As a consequence, Castells argues, we are witnessing the substitution of communities with networks as the primary form of social interaction:

communities, at least in the tradition of sociological research, were based on the sharing of values and social organization. Networks are built by the choices and strategies of social actors, be it individuals, families, or social groups. Thus, the major transformation of sociability in complex societies took place with the substitution of networks for spatial communities as major forms of sociability. (Castells 2001, 127)⁶⁵

The principal model of sociability is thus constituted by a centre – built around the household nucleus – that spreads in many non-territorial directions according to individuals' interests. Furthermore, Castells tends to associate this kind of affinity-based ties with Wellman's 'weak ties' (see Castells 2001, 127-8).

If networked individualism is the model of both online and offline sociability in the Information Age, according to Castells Internet only provides a material support to the spread of networked individualism as the dominant form of sociability. While social networks based on weak ties are not new, ICT have allowed them to become dominant. By so asserting, Castells distances himself from technologically deterministic explanations and introduces a multi-causality model. Only once online networks get stabilized into social practices, they can build virtual communities.⁶⁶ However, stable virtual communities like the WELL or Nettime – Castells adds – are exceptions and it would be easier to understand them if we used the term 'networks of sociability'.

Since Castells avoids the dichotomy between the material and the immaterial domains, the form that online social relationships take reproduces the form of urban communities. They both reflect changes in the mode of production in the Information Age: 'social relationships are characterized simultaneously by individuation and communalism, both processes using, at the same time, spatial patterning and online communication. Virtual communities and physical communities develop in close interaction, and both processes of aggregation are challenged by increasing individualization of work, social relationships and residential habits' (Castells 2004, 83).

⁶⁵ Actually, this argument's logical consequentiality is not fully deployed, as it can be noticed from this quotation: it is not clear why community's 'values and social organization' should be seen as opposed to network's 'choices and strategies', as if networks were not built on common values. After four pages, in fact, Castells himself asserts that 'individuals build their networks, on-line and off-line, on the basis of their interests, values, affinities, and projects' (Castells 2001, 131).

⁶⁶ This latter point is evidently in opposition with Rheingold's biological (and deterministic) understanding of virtual communities. See page 17.

Wellman (2001) shares with Castells some insights on networked individualism that he further develops by focusing on the interplay between urban space and immaterial social practices enabled by mobile ICT. Notably, with Castells and other authors (Jones 1995; Putnam 2000; Tracey and Anderson 2001) he argues that inquiries on sociability on/with Internet must be considered in the light of the wider context of studies investigating the transformation of sociability patterns at large. According to Wellman, the proliferation of personal networks happened well before the advent of ICT: computer-mediated-communication (CMC) has 'only' supported the emergence of individualized networks as the dominant form of social organization. In other words, according to Wellman computer networks are computer-supported social networks.

This approach allows Wellman to distance himself from cybercultural utopias dealing with futuristic implementations of technology towards the betterment of society, and to examine the opportunities and transformations triggered by computerized communication networks. Like Castells, Wellman too carefully avoids mono-causality and technological determinism and outlines a retro-active mechanism to explain the relationship between technology and society:

the technological development of computer networks and the societal flourishing of social networks are now in a positive feedback loop. Just as the flexibility of less-bounded, spatially dispersed social networks creates demand for the world wide web and collaborative communication, the breathless development of computer networks nourishes societal transitions from little boxes to social networks. (Wellman 2001, 2)

In Wellman's approach, technology does not 'cause' social transformations, but 'supports', 'enables', 'allows' them. Crucial in this regards is the introduction of the concept of the 'social affordances' of technology as 'the possibilities that technological changes afford for social relations and social structure' (Wellman 2001, 2).⁶⁷ Notably, Wellman argues that portability, ubiquitous computing, globalized connectivity and

⁶⁷ As we shall see in paragraph 2.2, the notion of 'affordance' is proper to Human-Computer-Interaction (HCI) studies. Wellman recalls that the concept of 'social affordance' has been coined by Erin Bradner [Bradner, E. (2000), 'Understanding Groupware Adoption: The Social Affordances of Computer-Mediated Communication among Distributed Groups', Working Paper, Department of Information and Computer Science, University of California, Irvine] to 'emphasize the *social* as well as *individual* implications of the technological features of computer-supported communication networks and human-computer interfaces' (Wellman 2001, 26. *Author's emphasis*).

personalization are *supporting* the movement from place-to-place communities to person-to-person communities.

The evolution from place-to-place to person-to-person connectivity introduces the second aspect which Wellman's paradigm shares with Castells'. Like Castells, Wellman conceives of the dichotomy between territorial and de-territorialized social ties as the most pertinent category for analysis, that cuts across the material/immaterial dichotomy.⁶⁸ He distinguishes, in fact, two main types of community: spatially defined community Vs. socially defined one. They roughly correspond to Castells' 'territorial community' and 'interest-based network' respectively.

Actually, Wellman identifies four main uses of the term 'community', but he concentrates on only one: 'I define "community" networks of interpersonal ties that provide sociability, support, information, a sense of belonging, and social identity' (Wellman 2001, 2).

As we have mentioned above, Wellman's main thesis argues that the most significant trend in sociability models concerns the evolution from place-to-place communities to person-to-person communities. Place-to-place interactions⁶⁹ are centred on the household where it is possible to receive visits, telephone calls and connect to the Internet through desktop computers. This pattern of sociability links households and family nucleuses that are not in the same neighbourhood: home is the base for relationships that are more selective than the neighbourhood communities of the past. Furthermore, being based on inter-household networks, place-to-place connectivity creates a fluid system for accessing material and cognitive resources: by switching among networks, people can use ties in one network to bring resources to another one.⁷⁰

⁶⁸ 'The cyberspace-physical space comparison is a false dichotomy. Many ties operate in both cyberspace and physical space, used whatever means of communication is convenient and appropriate at the moment. [...] Myopically fixating on the rapidly-developing internet, hysteresis, pundits, and wired scholars have all wrongly proclaimed it to be a place apart. Yet systematic research shows that physical space and cyber space interpenetrate as people actively surf their networks online and offline' (Wellman 2001, 19).

⁶⁹ Household-based place-to-place connectivity evolved from neighbourhood-based door-to-door interaction, in turn. 'Community interactions have moved inside the private home--where most entertaining, phone-calling and emailing take place--and away from chatting with patrons in public spaces such as bars, street corners and coffee shops' (Wellman 2001, 6).

⁷⁰ We have already seen in paragraph 1.2.1 that Turner (2006) calls the structure arising from this behaviour 'heterarchy'. Yet, Turner refers only to online communities like the WELL.

If the place-to-place model of sociability has enabled communities of affinity less constrained by territoriality, yet it preserved some sense of social context. Conversely, person-to-person connectivity drastically reduces the sense of place. With 'person-to-person connectivity', in fact, Wellman indicates an emerging pattern of sociability enabled by innovations in the technologies of communication, notably by the development of mobile ICT centred on the individual:

when someone calls a telephone wired into the telephone network, the phone rings at the place, no matter which person is being called. Indeed, many place-to-place ties have connected households as much as individuals. By contrast, mobile phones afford a fundamental liberation from place, and they soon will be joined by wireless computers and personalized software. Their use shifts community ties from linking people-in-places to linking people wherever they are. Because the connection is to the person and not to the place, it shifts the dynamics of connectivity from places--typically households or worksites--to individuals. (Wellman 2001, 8-9)

According to Wellman,⁷¹ with the shift to mobile connectivity it is the individual, and not the household nor the group, that becomes the principal unit of interaction. It is around the individual that communities that provide support, sociability, information and a sense of belonging aggregate: they are thus labelled 'personalized communities'.

Coming to the third aspect in common with Castells, to the dichotomies territorialized/affinity-based community and household/individual-centred community Wellman superimposes the structural distinction between group and network. This category basically follows Wellman's early dichotomy between strong and weak ties (Wellman 1979; 1988; Wellman and Leighton 1979; Wellman, Carrington and Hall 1988). Networks are sparsely-knit (few people are directly connected), far-flung, loosely-bounded (few ties stay within the densely-knit cluster) and fragmentary. In networked societies 'boundaries are permeable, interactions are with diverse others, connections switch between multiple networks, and hierarchies can be flatter and recursive' (Wellman 2001,1). Conversely, groups are densely-knit, tightly-bounded and multithreaded (most ties contain many role relationships).

Literally speaking, group and networks are not opposed: 'formally, a group is a special type of network' (Wellman 2001, 26). However, Wellman prefers to simplify and fix an opposition: 'in practice, it is linguistically convenient to contrast groups and networks' (Wellman 2001, 26). Wellman

⁷¹ Apart from Castells, this argument is shared also by other scholars like, for instance, Kopomaa (2000).

also tends to identify the group/network dichotomy with the territorial/affinity-based community dichotomy: he basically uses the term 'group' to indicate neighbourhood-bounded door-to-door connectivity, while the place-to-place and person-to-person models of interaction are structured as 'network'.

On one point Wellman's and Castells' positions differ. According to Wellman, community can take a shape resembling both groups or networks, while for Castells it is opposed to networks and corresponds rather to Wellman's definition of 'group'. Actually, for Wellman 'community' does not refer to a specific social structure, but it seems to be related to a particular type of substance that characterizes social ties through a sense of belonging.⁷² As a consequence, given the current trend towards networks, Wellman concludes that nowadays we do not find community in bounded groups anymore, but rather in loose networks: 'arguments and evidence converge in thinking about the transformation of community from solidarity groups to individualized networks' (Wellman 2001, 1), today there is a 'predominance of networks (rather than groups) in communities' (Wellman 2001, 7).

Castells' and Wellman's arguments are of great merit in developing the crucial intuition that society and technology are intertwined in ways that are much more complex than simple causality models would imply. In Wellman, the multi-causality explanation model allows him to distance himself from cyberculture's utopias underpinned by a simple cause-and-effect theory of action, and to introduce more variegated forms of interaction between technology and society. Still, in these authors' approach these two dimensions keep to be conceived of as distinct domains.

From another perspective, these approaches set binary types of aggregation ('territorial community' Vs. 'affinity-based community', 'collective' Vs. 'individual', 'group' Vs. 'network') that are to be used as starting points for sociological inquiries. However, it is not clear whether these categories partially overlap or whether one overlays/excludes the others. In Wellman's

⁷² See Wellman's definition of 'community' above. Actually, the way Wellman uses the term 'community' is fluctuating and sometimes contradictory. While most times it seems to refer to a substance that characterizes social ties based on solidarity and not to a structure, in some occasions it is used as synonymous of neighbourhood-based bounded group. For instance, 'where high speed place-to-place communication supports the dispersal and fragmentation of *community*, high speed person-to-person communication goes one step further and supports the dispersal and role-fragmentation of *households*' (Wellman 2001, 9, *Author's emphasis*).

argument, for instance, bounded groups made of strong ties characterize door-to-door neighbourhood communities ('group' overlays the 'territorial community' category), while loose networks made of weak ties characterize communities based on common interests ('network' overlays the 'affinity-based community' category). Furthermore, networks as a structure characterize also person-to-person networks of individuals as well as place-to-place household-based communities. That is, 'network' overlays the 'individual' category and it also overlaps with 'collective' as far as household communities are concerned, but not as far as neighbourhood communities are concerned. In other words, while the 'territorial Vs. interest community' dichotomy corresponds to the 'group Vs. network' one, the 'collective Vs. individual' dichotomy seems to be transversal to the previous ones.

Furthermore, it is not evident why territorial, neighbourhood communities should be completely identified with bounded groups, while studies have usually shown that street corners and coffee shops are the 'third places' where mainly weak ties proliferate (Oldenburg 1991). Similarly, it is not obvious why the intersection between 'group' and 'affinity-based community' is not taken into consideration. After all, it is at least as much likely that strong ties emerge from cultural affinity and similarity of interests as that they emerge from mere physical dwelling proximity.

Such a terminological ambiguity is probably partly due to the two, divergent meanings that are associated to 'social' in Wellman's 2001 essay: 'social' as related to human beings and thus opposed to 'technology', and 'social' as 'collection of human beings', thus opposed to 'individual'.⁷³ As to this point and to the notion of 'community' as a peculiar type of substance, we shall see in the next chapter how a shrunk meaning of 'social' can turn out to lead the researcher astray.

Coming to the relationship between technology and society, Wellman's argument seems to lack logical consequentiality when it comes to the conclusions. Acknowledging that Internet facilitates the maintenance of weak ties and that mobile technologies' affordances enable the individual to be the hub of different flows of communication does not logically imply that 'networks of individuals' are the dominant type of aggregate making up the social world, nor that they can be seen as the best type of grouping with which to start a sociological inquiry. As Latour (2005a) has argued for similar cases, logically speaking this is an inference that does not follow the

⁷³ This second meaning is exemplified by the words in italics in the excerpt reported in note 67.

premises. Apart from the fact that it does minimize the constraints related to the Digital Divide,⁷⁴ this inference follows a linear evolution model according to which dominant forms of sociability progressively replace non-dominant ones. Yet, as we shall see in paragraph 4.1.3, different models of sociability do not need to be mutually exclusive, but can co-exist and fulfil different functions.

The point here is understanding whether 'group', 'network of individuals', 'territorial community', 'personalized community' are conceived of as ideal types that get intertwined in the concrete world, or whether Wellman looks at them as macro-structural trends that sharply cut society in terms of 'groups' or 'networks', place-to-place or person-to-person connectivity according to an evolutionist model that sees bounded groups withering in favour of Me-centred loose networks.

1.3.2 Towards organized networks

Not all scholars who have addressed the question about whether digital communities are still relevant actors of the virtual world have turned to focus on the individual as the hub of contemporary computer-mediated models of sociability. Different solutions (and questions) come from the domain of media studies and software development.

Internet commentator Clay Shirky, for instance, has pointed out that the de-coupling of groups in space and time⁷⁵ allowed by the Internet has ushered in a host of new social patterns which are embodied into social software. According to Shirky, what makes social software different from other communication tools is that with social software *groups* are entities in their own right. 'A group of people interacting with one another will exhibit behaviours that cannot be predicted by examining the individuals in isolation, peculiarly social effects like flaming and trolling or concerns about trust and reputation. This means that designing software for group-as-user is a problem that can't be attacked in the same way as designing a word processor or a graphics tool' (Shirky 2003). Since the software interface rearranges the regimes of access and visibility, 'social software is political science in executable form' (*Ibidem*). This argument, that will be considered again in paragraph 2.1, is of major importance because it draws an

⁷⁴ 'The "digital divide"--the income/location/cultural gap between those comfortable with computerization and those not--is shrinking within the western world; the gender gap has already disappeared' (Wellman 2001, 3).

⁷⁵ Even if Shirky does not mention him, it should be recalled that one of the first scholars that focused on space-time decoupling as a feature of 'late modernism' was Giddens (1991).

interpretation of 'the political sphere' which is immanent to digital media: since it manages the procedures and protocols whereby people aggregate, software always embodies political decisions.

From a similar perspective, Geert Lovink and Ned Rossiter's 'organized networks' combine the assembling of a collective agent with the effort to address traditional organizational impasses proper to digital communities like accountability, sustainability and scalability. We have already seen how Lovink (2003) re-examines the notion of virtual communities as social networks and focuses on how they reflect society as well as anticipate new forms of social interaction. Making a step forward, Lovink and Rossiter (2005) show the conviction that online forms of cooperation are still possible on condition that the communitarian efforts distance themselves from the libertarian ideology.

First of all, Lovink and Rossiter specify that 'organized networks' are not a new type of social actor resulting from statistical analysis, but should be read as a proposal, guidelines aimed at replacing the inflated term 'virtual community'. Albeit on a theoretical level, the authors try to address many of the impasses we reviewed in the previous pages. The notion of 'organized networks' thus starts from recognizing the limits that virtual communities and tactical media have been unable to deal with and tries to figure out new strategic directions for techno-social assemblages that aim at experimenting forms of social interaction.

In order to do this, organized networks first of all need to acknowledge that instability, conflict, heterogeneity, passivity are the norm, and collaboration, unity and cooperation are exceptions. Freedom of refusal and 'notworking' are put at the very heart of any collaboration:

organised networks are "clouds" of social relationships in which disengagement is pushed to the limit. Community is an idealistic construct and suggests bonding and harmony, which often is simply not there. [...] Networks thrive on diversity and conflict (the notworking), not on unity, and this is what community theorists are unable to reflect upon (Lovink and Rossiter 2005, 2)

Despite the claims for participation and interactivity, in fact, in the Information Society passivity rules: activities like browsing, watching, waiting, surfing and long periods of 'interpassivity' characterize online life. Total involvement would mean billions of reply from all to all and the implosion of every network. Therefore – the authors argue – networks are kept together

by a 'shared sense of potentiality' and at the same time are saved by the fact that this potentiality is realised only in part.

Furthermore, disagreement and distrust do not imply the disruption of the flow of dialogue. Rather, they act as productive principles, as 'disputes condition and are internal to the creation of new institutional forms' (Lovink and Rossiter 2005, 3). To explain this point the authors introduce the notion of 'constitutive outside' (see Rossiter 2004) as a 'process of post-negativity in which rupture and antagonism affirm the future life of the network. The tension between internal dynamics and external forces comprise a new ground of "the political"' (Lovink and Rossiter 2005, 6).⁷⁶ In other words, for organised network the 'outside' always plays a constitutive role in determining the direction, actions and shape of the network, which is always situated. The 'other' is visible, present and active.

Similarly to the approaches we have reviewed in the previous paragraph, according to Lovink and Rossiter networks are made of loose ties, forms of collaboration are always temporary, voluntary and subjected to disengagement: 'networks foster and reproduce loose relationships. They are hedonistic machines of promiscuous contacts. Networked multitudes create temporary and voluntary forms of collaboration that transcend but do not necessary disrupt the Age of Disengagement' (Lovink and Rossiter 2005, 2). Here is where Lovink and Rossiter meet Wellman. Yet, there is a relevant difference between them. On one hand, while he disregards conflict, Wellman conceives of networks as structures and keeps considering community as a sort of psychological substance – characterized by 'sense of belonging' – that nowadays is embodied into networked structures rather than into bounded groups. On the other hand, Lovink and Rossiter abandon the structuralist dichotomy between form and substance and, with it, the idealist construct of a community kept together by solidarity, harmony and support: conflict is as constitutive for networks as inner harmony is. In addition, the two authors specify that organised networks 'are specific in that they are situated within digital media' (Lovink and Rossiter 2005, 1).

⁷⁶ For Lovink and Rossiter, as well as for other scholars like Sassen (2006), for instance, 'the political' is a very wide concept that transcends the formal political system made of parties and political institutions. An example provided by the authors is the activity of linking in blogs, as it is explained in note 82. In the next chapter we shall find Bruno Latour's definition of political as the protocols and procedures whereby the entities legitimated to take part in an assembly are aggregated. This definition may for sure be applied to Lovink and Rossiter use of the term in these pages. See also paragraph 4.3.5.

In this respect, organised networks echo Bruno Latour's relativist epistemology focusing on instability, conflict and heterogeneity in social relationships. We shall discuss in depth the ANT approach in the next chapter; for the time being, we want to anticipate the correspondence between Lovink and Rossiter's focus on network's dynamicity and conflict and ANT's efforts to devise a scientific method to deal with fleeting social aggregates made of heterogeneous elements by means of the study of controversies.

By blurring the distinction between 'horizontal' and 'vertical' models of organization, organized networks aim at constituting themselves as new institutional digital forms, hybrid formations where tactical media⁷⁷ encounter institutions: 'all forms of techno-sociality combine both horizontal and vertical forms of organization. Our argument is not so much that a hard distinction separates these modes of organization, as a degree in scale' (Lovink and Rossiter 2005, 10). As in Turner's concept of heterarchy,⁷⁸ their hybrid nature would allow organized networks to obtain benefits from both the tactical and the institutional domains. In particular, in order to develop their own form of organisation, emergent organised networks have to address three crucial aspects: accountability, sustainability and scalability.

As to accountability, Lovink and Rossiter do not leave room to much ambiguity: 'networks disintegrate traditional forms of representation [...] it is time to abandon the illusion that the myths of representational democracy might somehow be transferred and realised within network setting. That is not going to happen' (Lovink and Rossiter 2005, 3-4). Nor process-oriented forms of governance like those experimented by hackers seem to be sustainable in the long haul. According to the authors, the issue of accountability and transparency is crucial and needs to be addressed starting from a set of questions: 'Where does it [the organised network] go? How long does it last? Why do it in the first place? But also: who is speaking? And: why bother? A focus on the vital forces that constitute socio-technical life is thus required' (Lovink and Rossiter 2005, 4).

Another major issue is sustainability. Here is where organised networks distance themselves the most from their precursors of the 1990s – lists, collaborative blogs, alternative media⁷⁹ – that rarely put business models on

⁷⁷ See paragraph 1.1.4.

⁷⁸ See paragraph 1.2.1.

⁷⁹ See paragraphs 1.1.3 and 1.1.4.

the agenda. Lovink and Rossiter suggest some reference points and break some taboo associated with early independent digital communities:

- 'Time has come for cautious planning': independent digital networks must overcome their self-destructive tendency and accept the challenge of organisation. Defining a collaborative value system that is able to address issues like funding, internal power management, accountability and transparency is the first step.
- It is advisable to use non-profit providers and avoid commercial services that are unreliable and suffer from regular security breaches.
- The constitution of a company with legal status could be necessary. Otherwise, funding for online activities, meetings, coding, design, research or publications could be channelled through allied institutions.
- While it works for free software geeks that develop their own coding projects, voluntary work does not work for cultural, artistic, activist projects, content editors and web-designers. Work has to be paid. It is thus necessary to face this economic reality and to outline how networks can be funded over time.
- Since attracting funding from traditional sectors like private philanthropy, governments and business is always a hard task, 'complementary currencies'⁸⁰ need to be devised. As a matter of fact, the greatest asset of organised networks consists of the activities they regularly carry out:⁸¹ these activities could be conceived of as media of communication and exchange and thus work as alternative currency. 'The primary difference between conventional and complementary currencies rests on the different regimes of value inscribed upon the mode of labour and the logic of exchange. Lietaer: "Conventional currencies are built to create competition, and complementary

⁸⁰ Lovink and Rossiter quote Dykema, R. and Lietaer, B. (2003), 'Complementary Currencies for Social Change: An Interview with Bernard Lietaer', *Nexus: Colorado's Holistic Journal*, July-August. Bernard Lietaer is one of the designers of the Euro and a researcher on complementary currencies, which he defines as 'an agreement within a community to use something as a medium of exchange'.

⁸¹ That is 'exchanging information and conducting debates on mailing lists; running public education programs and archiving education resources; open publishing of journals and books; organising workshops, exhibitions and conferences; providing an infrastructure that lends itself to rapid connections and collaborations amongst participants and potential partners; hosting individual Web sites, wikis and blogs' (Lovink and Rossiter 2005, 5).

currencies are built to create cooperation and community...” (Lovink and Rossiter 2005, 5). According to the authors, devising alternative currencies would also allow organised network to refuse the cyberculture logic of free labour and free contents.

Lastly, the issue of scalability tackles a well-known aspect of online communities: the tendency to split up in myriads micro-conversations when they reach few thousands participants. According to Lovink and Rossiter, this issue lies at the convergence between software architecture and internal power structures. On this regard the notion of ‘constitutive outside’ we have reviewed above is crucial: it is exactly because organised networks need to open up new horizons within which ‘the political’ find a space of expression that the requirement of scalability has to be addressed. If in the digital organised network the ‘outside’ has to play a constitutive role in determining the actions of the network, then software needs to embody this principle by allowing the ‘other’ to be always visible and present.⁸² However, addressing this demand for scalability means to overtly recognize internal informal power structures and to go beyond the dominant assumption of decentralization that prevents the discussion about new forms of organization – the authors argue.

Once also the taboo of decentralisation has been called into question, for Lovink and Rossiter it is easy game getting rid of the last legacies of the techno-libertarian cyberculture. First, they point out how blogs (see note 82) and social networks like Friendster and Orkut are based on software that refuses antagonisms. Similar software does not leave any other choice than accepting an inflation of friends: ‘this is New Age revivalism at work, desperately insecure, and in search of a “friend”’ (Lovink and Rossiter 2005, 8).

Second, the authors observe that while wiki software allows the collaborative creation of ‘collective intelligence’, this specific social-technical model will probably not work in all cultures and countries, as, for instance, those where public work and full visibility are not appreciated. Despite free culture’s claims, sharing knowledge is not a universal value.

⁸² Contrarily to what happens with blogs – the authors argue, where the ‘enemy’ is invisible and only friends are present. This is possible because the logic of blogs is that of the link. It is links that enhance visibility through a ranking system, and links correspond to ‘friends’, to the blog’s cultural enclave. All what is outside the zone of affinity simply does not exist. With blogs ‘the political’ corresponds to the moment of linking. ‘The fact that I do NOT link to you remains invisible. [...] Blogs can thus be understood as incestuous networks of auto-reproduction’ (Lovink and Rossiter 2005, 7). Blogs are not organised networks because they are not open, they close themselves to the potential for change. See also Lovink (2007).

Third, Lovink and Rossiter point out the naivety of those initiatives, like the Creative Commons, that seek to conquest institutions and cultural industries to their cause by recalling their 'non political' character, while, on the contrary, 'there is no escape from politics'. According to the authors, the rhetoric of openness hides the political motivations and economic interests at work in these projects: 'the provocation of organised networks is to unveil these mechanisms of control and contradiction, to discuss the power of money flows, and to redirect funds [...] the organised network has to break with the "information must be free" logic' (Lovink and Rossiter 2005, 8).

1.4 The Taking Over of Community

The literature review we have been discussing up to now is firstly meant to make the reasons for another research on digital communities in late 2000s evident. The experiences we have reviewed in paragraph 1.1 have all contributed to an extended understanding of 'online communities' by bringing along some 'memes' to this notion. Paragraph 1.2 has shown how some recent developments in the economy of Internet and in the politics of information have called into question a considerable amount of the utopias that the digital community paradigm inherited from cyberculture and from counter-culture, both from the 1960s and the 1990s. The shift from the prairie to the battlefield has been promptly documented by scholars from diverse disciplines. Despite the different approaches, the authors these pages have dealt with have all argued that many of the postulates that the communitarian, non-profit Internet culture has inherited from cyberculture cannot be taken for granted, when they are not overtly disproved by evidence.

As a consequence, many academic commentators have renounced to acknowledge the digital existence of peculiar social aggregates kept together by communal ties. As we have seen in paragraph 1.3, influent sociologists that have opened the field of Internet studies have replaced communities with networks of individuals. Also those scholars who are more optimistic towards the renaissance of collaborative ties online can be so only provided that the communitarian perspective gets rid of the libertarian paradigm that postulates harmony as the norm.

It is thus paradoxical to notice that today references to 'community' are more numerous than ever. According to the *2007 Digital Future Report* elaborated by USC Annenberg School Center for the Digital Future, 67,2

percent of members of online communities⁸³ answer their community is very or extremely important to them, while 46,1 percent of members say they benefit a lot from their community and only 3,8 percent find no benefit from their online community.

Under different forms, online communities are recognized as key social aggregates in much diverse fields of activity. While 'cyber-communities' are disappearing from the top of the digital culture's hot concepts list (see Bazzichelli 2006b), articles about 'social networking sites' colonize high-tech magazines' columns, 'communities of practice' constitute the backbone of corporate knowledge management policies, while almost every venture capitalist and Internet marketer invokes participation through 'Web 2.0 community tools' as a strategic component adding value to Internet companies' investments.

If one conducts a Google search for 'online community', it is very difficult to figure out what this is supposed to be. Among the Top Ten list, two items are related to governmental or university institutions, two items refer to the definitions of the expression posted on UGC platforms, four items link to toolkit pages oriented to professionals who aim to start an online community as their own business and one item refers to a closed, commercial chat platform. Only one item links to the support community of a free software project.⁸⁴

It might be said that while the cyberculture paradigm underpinning the notion of online community is showing its limits, other domains are taking over this notion. As a consequence, its boundaries have become fuzzy: in late 2000s online communities are becoming more and more difficult to be delineated and the relationship between access to digital media and empowerment hard to be disentangled. Already in 2001 Wellman noticed the movement from a restricted definition of online community to a more comprehensive one. He mentioned four main uses of the term 'community': '(1) the ecological juxtaposition of people in the same locale; (2) interpersonal relations, no matter where they are located; (3) Internet marketers label as a "community" disconnected aggregations of random visitors to websites; 4) Businesses talk about "communities of practice": colleagues sharing lore either within or between organizations' (Wellman 2001, 26).

⁸³ The Digital Future project defines 'online community' as 'a group that shares thoughts or ideas, or works on common projects, through electronic communication only'.

⁸⁴ Search ran on 11th September 2008 from Italy. To avoid distortions caused by Google's geolD filters ranking local pages higher, we selected only English results in the advanced search options.

To a deep observation, one can see three currents that are rippling the apparently flat ocean's surface of digital communities. First, to the new popularity of digital communities an ever widening meaning of community corresponds. There is a clear etymological trend in the successive variations of this expression. It goes from the most specific and context-related meaning of the 1980s' underground scene to the most generic one. As a matter of fact, the definition of digital communities has been ranging up to include almost every form of aggregation through ICT: RSS feeding, tagging, blogging, bookmarking associate multimedia objects as well as digital *personae*.

What is thus at stake is not only the possibility to trace communities, but the meaning of the same notions of collaboration and the nature (human/machinic) of those actors supposed to collaborate. Can individuals using the same tags in order to organize and share their own pictures through a Web platform be considered a community or, at least, a network? Which kind of collaboration is conveyed by a video posted in order to critically respond to a previously published one? Are the bonds arising from blog cross-linking similar to those originated through USENET? Ultimately, these questions lead to ask whether it is possible to extend agency to technological artefacts.

Second, it might be affirmed that the term 'online community' has been growing in popularity as the range of potential shared interests has widened. If the Berkshire Encyclopaedia of Human Computer Interaction still indicates digital divide reduction, open access to ICT, local communities empowerment and revitalized democracy as issues that were addressed by 'cybercommunities' during late 1990s and early 2000s, with social networking sites and Web 2.0 the identification of an explicit interest focus – beyond sociability itself – has become increasingly hard.

If early digital communities were glued together exactly by a common mission, this doesn't seem the case anymore. In her effort to classify text-based virtual communities, for instance, Mascio (2003) recognizes that 'since it is usually very generic, the interest focus cannot be considered a prolific category for research' (Mascio 2003, 157. *Author's translation*).

Likewise, echoing Wellman's vocabulary, Boyd and Ellison (2007) argue that social network sites mark a shift from interest-centred networks to me-centred networks and that this shift 'mirrors' a new organizational structure of online communities:

the rise of SNSs indicates a shift in the organization of online communities. While websites dedicated to communities of interest still exist and prosper, SNSs are primarily organized around people, not interests. Early public online communities such as Usenet and public discussion forums were structured by topics or according to topical hierarchies, but social network sites are structured as personal (or "egocentric") networks, with the individual at the center of their own community. This more accurately mirrors unmediated social structures, where "the world is composed of networks, not groups" (Wellman, 1988, p. 37). The introduction of SNS features has introduced a new organizational framework for online communities, and with it, a vibrant new research context. (Boyd and Ellison 2007, 10)

Third and more generally, we are witnessing the explosion of the *gemeinschaft* well beyond the domain of sociology and computer science – towards economics and management, as well as beyond academic institutions – towards market and corporate media. It has crashed the boundaries of social sciences and urban planning to shore on the crowded coast of business, Internet companies and media discourse.

For instance, Amin and Thrift (2001) argue that while the concept of 'community' is called into question inside its native urban studies domain, paradoxically it seems to gain new relevance as a key element of success for economical systems. In order to explain why some cities have turned out to be more competitive than others, for example, scholars like Storper (1997) and Scott (1988) have stressed the role of community-based non-economical ties in economic processes of adaptation and knowledge sharing. Similarly, a number of works have argued that the key to success with online businesses is the development of virtual communities (Downes and Mui 1998; Hagel and Armstrong 1997).

As a consequence of these movements, it is by no means certain that what is meant by the term 'online community' in all these domains relates to the same thing. Early researches from the 1990s could quite straightforwardly not only postulate specific definitions of digital communities as starting points, but also classify them on the basis of their kind of interface (text-based/graphics) or of time modalities (synchronous/asynchronous) (see Jones 1995, 1998; Smith 1992; Stone 1995). Today, on the contrary, this proliferation gets to the point that drawing a list of all the types of grouping subsumed under the word 'online community' appears as an impossible task. Do digital communities pertain to the domain of politics, business, art or media culture? Are they circumscribed to non-profit initiatives or can they be initiated also by commercial players? With the term 'digital commons' do we refer to the web-contents (hypertexts, photos, videos, 3D worlds, etc.)

produced by participants or also to the virtual spaces, codes and procedures whereby they aggregate?

In other words, it is not clear anymore whether there exist ties that are specific enough to be called 'communitarian' and that can be assembled together in constituting a special assemblage. 'Community' seems to be watered down: it is diffuse everywhere and yet nowhere in particular.

Even so, instead of being overwhelmed by such a vagueness, admitting the ill-timeliness of a study on online communities and turning to consider only cooler online aggregates like 'social networking sites', one can realize the need for a research on this subject that liberates the communitarian perspective from many of the misunderstandings that dragged it into such a blind alley.

Notably, in the next chapter we shall set the bases for a research on online social assemblages that starts from absolutely radical presuppositions: that *gemeinschaft* be not opposed to *gesellschaft*, that the Social be not a stabilized substance, but needs to be re-assembled each time anew, that digital artefacts be endowed with agency, that there be no groupings more legitimate to start an inquiry with than others. In counter-tendency with recent developments, tracing back communities could turn out to be one of the most intellectually exciting missions in late 2000s' digital realm.

Chapter 2

An Open Method for Fuzzy Objects

2.1 Asking Fair Questions. Research Objectives

The arguments discussed in chapter 1 have led us to acknowledge that in the 2000s the libertarian cyberculture paradigm underpinning the mainstream idea of online community has come to a crossroads. Notably, some of the utopias based on the cybernetic vision of information technology as the source of a second industrial revolution bearing the promise of emancipation for the citizenry are facing the counter-evidence of both a more and more controlled and territorialized Internet and of a newly new economy based on the exploitation of informal cognitive labour.

As a consequence of the uncertainties we have reviewed up to now, the same notion of online community is at stake. In the last paragraph of chapter 1 we came across some of the concerns arising from the proliferation of the digital community in very diverse domains. Here, we want to stress the paradoxical weakness of such a concept: while communal ties enabled by ICT are more and more invoked, the Internet is revealing itself as a much more bureaucratic and profit-oriented domain than ever. What are, therefore, the conditions under which today it is still possible to talk about digital communities, if any possible at all? More radically, is still 'online community' a notion that brings with it some scientific weight? By the end of this research, we hope we shall be able to answer these fundamental questions.

In the meanwhile, we shall carry on this research on online social assemblages by explicitly avoiding the use of such an inflated term. Looking for a direct answer to the question about what 'true' virtual communities are, in fact, is only one way to look at the question, another one being the attempt to re-consider the relationship between information technologies and social ties by avoiding the notion of 'online community' as a key concept. If we get rid of this tormenting paradox – evoking communal ties when talking about collaboration in a more and more profit-oriented digital domain, we won't

probably answer the question about the nature of online community. Nonetheless, our reflection will stop making undue questions.

As a consequence, this research's main objective deals with the investigation of the assorted patterns of self-empowerment that have underpinned the development of computer-mediated social groups in the 2000s. Indeed, the main consequence of the crisis of the techno-libertarian paradigm lies in the fact that the supposedly direct correlation between access to digital media and empowerment of individuals and communities – a correlation which lies at the core of the digital community concept – cannot be taken for granted anymore. The assumption that uploading self-referred information on a multi-interactive digital platform, participating in e-democracy focus groups or even keeping a personal blog updated would empower individuals and communities needs indeed to be tested.

Far from being straightforward, however, a similar kind of assessment cannot rely on more objective data than subjective accounts nor on more consistent methods than those provided by a relativist approach. Still, it is intended to be as much scientific as those studies which 'imitate the successes of the natural sciences by being as objective as other scientists thanks to the use of quantitative tools' (Latour 2005a, 4).

To test the relationship between access to digital media and empowerment, in fact, one has first to recognize that, along its history, the discourse on digital communities has witnessed the struggle between two types of deterministic explanations of the relationship between technology and social ties. The technologically-driven position which argues that assuring access to digital media would straightforwardly empower marginalized actors, on one hand, and the sociologically driven argument that sees the design of participatory tools on the Net as 'reflecting' the needs of local communities,⁸⁵ on the other hand, are both based on a simple cause-and-effect pattern of interaction that shrinks the number of possible relationships between technological artefacts and social ties. In the first case, technological objects are seen as causes whose effects are diffused through human action, while in the second case it is social action that shapes technological artefacts.⁸⁶

However, what is difficult when dealing with those techno-social assemblages commonly subsumed under the umbrella term 'digital community' is precisely to disentangle the 'technological' dimension from the

⁸⁵ See Flichy's categorization in paragraph 1.1.2.1.

⁸⁶ For an extended critique of social constructivism, see Hacking (1999).

‘human’ one. As a matter of fact, where is the threshold between the social and the technological set when it is the software interface that rearranges the regimes of access and visibility? As Internet commentator Clay Shirky points out, ‘social software is political science in executable form. [...] designers of social software have more in common with economists or political scientists than they do with designers of single-user software, and operators of communal resources have more in common with politicians or landlords than with operators of ordinary web sites’ (Shirky 2003).⁸⁷

It thus appears clear how a research dealing with similar transient objects of study would rather need a theory of action that go beyond the simple relation of causality and that take into account a multiplicity of modes of action between technological artefacts and social ties. Code not always ‘causes’ the patterns whereby people associate:⁸⁸ it may also ‘allow’, ‘enable’, ‘hamper’, etc. In other words, we need to take into account the possibility that digital objects be endowed with agency themselves.

This is why, in order to pursue this research’s main objective, we shall follow a relativist, bottom-up approach. As Bruno Latour argues,

in situations where innovations proliferate, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates, [...] to the convenient shorthand of the social, one has to substitute the painful and costly longhand of its associations. The duties of the social scientist mutate accordingly: it is no longer enough to limit actors to the role of informers offering cases of some well-known types. You have to grant them back the ability to make up their own theories of what the social is made of. Your task is no longer to impose some order, to limit the range of acceptable entities, to teach actors what they are, or to add some reflexivity to their blind practice. [...] [You have to] try to catch up with their often wild innovations in order to learn from them what the collective existence has become in their hands, which methods they have elaborated to make it fit

⁸⁷ Although we agree with Shirky’s insight, in paragraph 4.2.2.1 we shall further extend our argumentation by questioning the same notion of ‘social software’ as a peculiar kind of software in its own right.

⁸⁸ Again, we are not assuming here a technologically deterministic position: people have always the chance to act upon how the software works, either acting directly at the level of software development for FLOSS, explicitly asking designers for changes or collectively redeploying the functions designed on the software side. Indeed, this is the most remarkable achievement of early digital communities. When we talk about ‘patterns’, we are rather referring to what interpretative semiotics would call ‘model reader’ and cognitive ergonomics would call ‘affordances’: invitations to use embedded in the software but still open to undergo a process of resistance by empirical users. We shall discuss the notion of mediation and affordance more in depth in the next paragraph. See Eco (1979) for a definition of ‘model reader’, Norman (1988) for the concept of ‘affordance’ in Human-Computer Interaction theory. For examples of bottom-up uses of applications that ‘betray’ the functions intended by software designers, see Shirky (2003).

together, which accounts could best define the new associations that they have been forced to establish. If the sociology of the social works fine with what has been already *assembled*, it does not work so well to collect anew the participants in what is not, *not yet*, any sort of social realm'. (Latour 2005a, 12)

This research's main question thus concerns how social actors involved in online aggregations themselves account for the empowering potential of technological artefacts. So far, few researches about humans interacting online have acknowledged the importance to take into account multiple modes of action and, most importantly, the transient nature of community. In the following paragraphs we are going to consider all these aspects in depth.

2.2 Interrogating Fuzzy Objects. A Bottom-up Epistemology for Ephemeral Assemblages

The features of the object of study we have so far addressed converge in enlightening an 'opacity' of online communities, a sort of resistance to being 'grasped'. Differently from earlier studies carried on in mid '90s, today the researcher interested in digital social assemblages encounters more and more problems in setting the boundaries of her object of study. We can resume the main epistemological constraints arising when starting a scientific work on online social aggregates as the following.

- The semantic proliferation of the term 'online community' means that drawing a list of all the types of grouping subsumed under this notion appears an impossible task. In order to face elements of growing complexity, a researcher could probably fall into the temptation to sort in advance by herself what are the most relevant units of society wherewith to start the enquiry. However, setting 'loose networks' rather than 'bounded groups' or 'groupware' or even 'communities of practice' as starting points is not less arbitrary a decision than postulating the consistency of a theory without testing it on field. Of course, our researcher would strive to justify her preference for a type of grouping rather than another, and would also probably argue against other studies that selected 'worse' social assemblages as starting points. Still, her justifications will not be sufficient to prevent other scholars from criticising her approach as arbitrary or meaningless, in turn. In other words, when groups proliferate, objectivity has nothing to do with the a priori selection of one better group to start with, but rather with the observation of different contrasting selections. If we want to retain a scientific approach, we

need to avoid defining the type of online group which is supposed to be relevant to the analysis *before* beginning the research.

- More generally, any preliminary classification based on the type of technology used, the type of social ties created or the shared interests and commons would get stuck in the same necessity to define those types in advance, thus postulating concepts derived from other researches, multiple other disciplines,⁸⁹ or even from the market-driven digital hype.⁹⁰ Again, if we want to keep our feet on the solid ground of science, we cannot rely on other concepts than those provided by social actors themselves.
- Furthermore, following the aporiai we reviewed in chapter 1, it is evident that one cannot postulate the existence of peculiar social aggregates definable as 'digital communities' anymore. It is not clear whether there exist ties online that are specific enough to be called 'communal' and that can be assembled together in making up a peculiar assembly. Whether 'digital communities' still retain some semantic value, this is something that is to be evaluated at the end of the on field research.
- Online social assemblages are not established once and for all. As some studies on the high percentage of lurkers in online discussions demonstrate (Nielsen 2006), boundaries are so hazy and the number of those that cross them regularly so high that one should better admit that stability and order are rare exceptions. Therefore, a research dealing with online social assemblages needs to constantly address the transient nature of social ties and to focus on the means whereby elements are kept assembled.
- The impossibility to disentangle the 'technological' and the 'social' when dealing with digital assemblages implies the need to extend agency to non-human actors. To give reason for the fact that 'software is political science in executable form', we should avoid deterministic

⁸⁹ In these two cases, the method would be unscientific because it would postulate the seamless adaptability of those concepts to any object of study/field of inquiry. Even if then adaptation showed some seams, it would not be clear how the researcher elaborated the rationale according to which she could sew the a priori categories to the peculiar object of study. This, in fact, is supposed to be unknown, since it is precisely what is to be investigated in the study.

⁹⁰ The fluctuating meanings associated with the popular, market-driven label 'Web 2.0' are an excellent example of this.

explanations of the relationship between technological artefacts and social ties as a simple relation of cause-and-effect and explore more flexible definitions of agency.

- Lastly, the importance of avoiding the reduction of online forms of collaboration to already known patterns of interaction is even more crucial when considering that for years online communities have been a site where innovation of product and innovation of process were jointly led. By seamlessly developing technical applications and organizational solutions, for instance, early FLOSS communities were the first to call into question the notion of ownership and to replace it with access, thus anticipating the knowledge economy.⁹¹ Appealing to established and restricted sets of agency or grouping could thus lead the researcher to an even thicker opacity and to disregard innovation; conversely, avoiding arbitrary closures will give her enquiry much more freedom of movement to trace innovations.

Finding a research method that could help us to address these constraints was not a trouble-free task. Most researches, in fact, concentrate on the extent to which a digital assemblage might be considered a community rather than a fleeting transaction, thus disregarding the same complexity in postulating 'community'. As a consequence, in this research we borrow some epistemological insights from Science and Technology Studies (STS): the Actor-Network-Theory (ANT), in particular, has been elaborated to deal exactly with opaque, unstable objects of study.⁹² Far from leading us to

⁹¹ See paragraphs 1.1.2 and 1.1.3. Rifkin (2000) argues that in the New Economy age ownership has been substituted by access. The exchange of proprietary goods has been replaced by the temporary access to goods or services which is negotiated between client and server. Knowledge thus becomes a key resource for detecting new organizational strategies. Similarly, Benkler (2006) envisions the rise of a reformed capitalism that is more and more oriented towards the production of knowledge and meanings. This new form of immaterial capitalism will get rid of private property, and intellectual rights in particular, as a obstacle to the free deployment of market potentialities.

⁹² It should be noticed that there exist two different meanings of 'network': as object or study or as method. We are fully aware of the fact that using ANT to study digital communities may turn out to be risky since what 'network' means in ANT and what is usually understood as 'network' when talking about digital communities are two completely different things: a method in the first case, an object of the world in the second case. Nonetheless, since we decided to deal with an ever-changing object whose boundaries are so terribly fuzzy, we shall face the risk of confusing the object with the method and will try to be even more cautious.

abdicate to scientific reliability and objectivity, this approach adapts tools derived from ethnography, ethnomethodology and literature studies to sociological concerns, in order to fully take advantage of the richness given by the proliferation of social forms, instead of being overwhelmed by it. Notably, three are the elements derived from an ANT perspective that could help us to address the constraints listed above.

First, ANT starts explicitly from taking into account this research's main constraint: there are no groups more legitimate to start an inquiry with than others.

While the most common experience we have of the social world is of being simultaneously seized by several possible and contradictory calls for regroupings, it seems that the most important decision to make before becoming a social scientist is to decide first which ingredients are already there in society. [...] [On the contrary,] there is no relevant group that can be said to make up social aggregates, no established component that can be used as an incontrovertible starting point. (Latour 2005a, 28-9)

As we saw when we mentioned the proliferation of forms of online collaboration, this research, too, cannot set any specific framework as a starting point. In order to keep an adherence to scientific objectivity, it cannot begin from setting 'networks' rather than 'groups' as the best social assemblage to start with, nor take 'social networking sites' as the brand new machinery for social capital production. In this research, thus, no social groups are postulated at the beginning of the investigation: they will rather be found at the end, as the result of the analysis of the accounts provided by social actors themselves.⁹³

Second, according to the STS approach focused on 'situated action', the presence of the social needs to be demonstrated each time anew and cannot be simply postulated once and for all. This approach takes as a major evidence what we came to realize at the end of chapter 1 by considering the current state-of-the-art of digital communities. That is, in the Internet domain instability is the norm.

In particular, ANT stresses the fact that social groups are not inertial, but they need to be constantly kept up by group-making efforts. Focusing on the elaboration of a sociological method to deal with unstable objects of study, Latour 2005a comes back to Gabriel Tarde's insights and brings into question the same notion of 'society' as a kind of substance in itself,

⁹³ We shall return on the need for an a posteriori definition of concepts in paragraph 2.2.1. For a demonstration of the appropriateness of this choice, see paragraph 4.1.3.

separated from other domains like economics, politics and culture. He defines the 'social' as

a movement that can be seized indirectly when there is a slight change in one older association mutating into a slightly newer or different one. Far from a stable and sure thing, it is no more than an occasional spark generated by the shift, the shock, the slight displacement of other non-social phenomena (Latour 2005a, 36).

Under this perspective – we would add – the traditional distinction between *gemeinschaft* and *gesellschaft* loses its meaning. If there exist no *homogeneous* ties that are peculiar to a substance named 'society', similarly it is unlikely that there exist homogeneous elements that are peculiar to a substance labelled 'community'. This consideration frees this research from the incumbency to look for peculiar, homogeneous ties that can be named as 'communal' and, as a consequence, from the paradox we discussed in the previous paragraph. On the contrary, by comparing assemblages among themselves and in time, in this analysis we shall concentrate on how *heterogeneous* elements move from association to association.

Third, while Human-Computer-Interaction (HCI) has historically assumed the dichotomy between subject/object and has focused on the 'immediacy' between input and output as a key concept for the evaluation of interfaces,⁹⁴ on the contrary STS have adopted the notion of 'mediation' as a fundamental concept and have overcome that dichotomy by replacing it with that of actor/network (see Akrich 1992). In particular, Latour distinguishes 'mediation' – a relationship that constitutes actors while taking place, from 'intermediation' – a relationship where a tool just transports agency from one pre-existing point to another pre-existing point. While in intermediation the inputs are enough to define the outputs, mediation exceeds its inputs and cannot be reduced to a relationship of cause-and-effect (Latour 1999; 2005a).

This main theoretical opposition between the two disciplines implies two completely different approaches towards agency. According to HCI, on one hand, agency pertains to a full-blown subject endowed with intentionality. On the other hand, by calling into question the same notion of intentionality, STS see action as distributed throughout an assemblage, a network of hybrid

⁹⁴ See Nielsen (1999); Norman (1988); Visciola (2000). We must nonetheless recall that, thanks to the influence of the social sciences, some HCI studies are emerging, that call into question these dichotomies. See Mantovani (1995).

‘actants’⁹⁵. For ANT, action is a knot, a conglomerate of agencies taken up by multiple actants and shared with the masses. Action is not embodied in a single actor, nor in a single ‘social cause’, rather, it is dislocated. ‘Action is borrowed, distributed, suggested, influenced, dominated, betrayed, translated. If an actor is said to be an *actor-network*, it is first of all to underline that it represents the major source of uncertainty about the origin of action’ (Latour 2005a, 46. *Italic in the text*).

As a consequence, for ANT objects too can be ‘participants’ (actants) in a course of action: it is sufficient that they make a difference in some other agent’s action. For instance, a kettle participates in the action of boiling water, since it makes a great difference to boil water with or without it, even if one may not say that the kettle *causes* the boiling of the water. ‘There might exist many metaphysical shades between full causality and sheer inexistence. In addition to “determining” and serving as a “backdrop for human action”, things might authorize, allow, afford, encourage, permit, suggest, influence, block, render possible, forbid, and so on’ (Latour 2005a, 71-2).

On closer inspection, one could notice that this extended definition of ‘action’ as ‘making someone do something’ resembles HCI notion of ‘affordance’ as an invitation to action that is embedded in the artefact (Gibson 1986; Norman 1988). Nonetheless, a crucial difference between the two approaches should not be forgotten: while for the theories based on situated action affordances emerge *during* action (see Quéré 1997), for cognitive

⁹⁵ With ‘hybrid’ we mean both human and non-human. In his works, Latour uses the term ‘actant’ as substitute of ‘actor’ in order to gain higher pliability with respect to figuration. Roughly speaking, it might be said that an actant is an abstract agent endowed with a logical function that on a discursive level gets embodied into an actor endowed with a figuration. Latour borrowed this distinction from semiotics, where it corresponds to the deployment of agency respectively on the narrative level (where we talk of ‘actants’) and on the discursive level (wherein ‘actors’ lie). Greimas and Courtés define an actant as ‘the one that performs or undergoes the act, regardless of any other determination. Thus, quoting L. Tesnière whose work this term is borrowed from, “actants are the beings or the things that – under whichever qualification and in whatsoever manner, even as simple bit players and in the most passive manner – take part in the process”. Under this perspective, the actant designates a type of syntactic unit, a peculiarly formal one, before any semantic and/or ideological investment’ (Greimas and Courtés 1979, 40, *Italian edition. Author’s translation into English from Italian edition*). We shall borrow this distinction between abstract agency and figurative actors at due time. For now, it is interesting to notice that, under this distinction, ‘loose networks’, ‘communities of practice’ and ‘groupware’ differ on a discursive, figurative level, while they might fulfil the same logical function in a course of action.

ergonomics the subject and the object are constituted *before* the interaction. This latter thus involves mere intermediaries.

ANT's approach to agency as distributed action *in potentia* rather recalls Greimas' notion of 'competence' as a 'being-able-to-do' and a 'knowing-how-to-do' (Greimas and Courtés 1979, 65, *Italian edition*). In Greimas' Narrative Schema,⁹⁶ *competence* is acquired during the qualification stage that logically precedes the performance: before performing an action, an actant needs both a pragmatic (*being-able*) and a cognitive (*know-how* or *implicit knowledge*) competence that makes the action possible. In a similar way, when saying that 'things might authorize, allow, afford, encourage, permit', etc., Latour is acknowledging that they are providing some competence, a 'being-able-to-do' and/or a 'knowing-how-to-do'. If the kettle does not *cause* the boiling of water, at least it provides someone with the *potentiality* to boil the water.

Albeit on a theoretical level, these considerations turn out to be very helpful when it comes to this research's need to extend agency to objects. If we want to give reason of the fact that software design is political science in executable form, we need to get rid of the notion of agency as related to intentionality and to acknowledge that code too can participate in a course of action. Digital interfaces address political concerns because they re-organize the associations that constitute the socio-technical network wherein they are included. They may thus be conceived of as mediators in their own right and not mere intermediaries. As mediators, digital artefacts do not *cause* some effects on the 'social' side, but rather can provide some *competences* to the action. Under this perspective, it is clear how the ANT's approach provides

⁹⁶ The 'Narrative Schema' is a model useful as a starting point in order to understand the organizational principles of a vast array of texts. It is articulated into four major functions: Manipulation, Qualification, Performance, Sanction. Through Manipulation, someone (the Addresser) persuades/obliges/convince someone else (the Subject of Action – SoA) to do something. Once the SoA is endowed with a will or a duty, it needs to acquire the cognitive and pragmatic competences (Qualification) to perform the action (Performance). After having performed the action, the SoA is judged by the Addresser which evaluates whether the action has been performed as requested (Sanction). See Greimas and Courtés (1979), 'Narrative (Schema)'. A good (and somewhat mundane) extra-literary example is provided by politics itself. Politicians are pushed to operate for the Common Good by civic (the Citizen), moral (Ethics), nationalist (the Country) or other Addressers. They first need to acquire competences: to get a knowledge on the matters of concern of politics and to establish the governing bodies. Once they have governed for a certain amount of years, their actions are judged by Citizens through new elections.

us with the pliability necessary to undertake an analysis that aims at investigating how ‘empowerment’ proceeds from non-human actors.

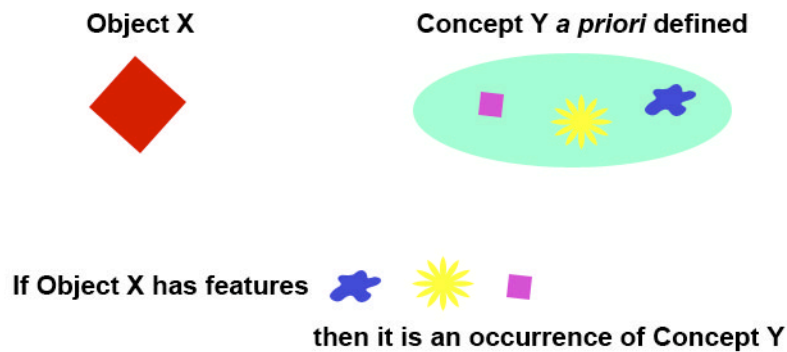
Once these epistemological assumptions are established, it is hard work when it comes to their application on the concrete ground of on field research. The following sub-paragraphs explain how we proceeded from these epistemological choices to the selection of the sample of analysis. In particular, they concentrate on the kind of material which we have been using as data set and on the specific moment in a process of innovation which we have been tracking to gather the data needed.

2.2.1 ‘Platonic’ VS ‘Wittgensteinian’ methods of classification

Coming back to early studies on digital communities, from a social sciences perspective efforts often concentrated on the extent to which online collaboration could be seen as a community-making activity, rather than as a simple transaction. Durability over time, regularity of the rhythm of interaction, presence of one or few shared interests were usually used as indicators to distinguish ‘successful’ communities from other types of looser social aggregations (Jones 1998; Kim 2000; Smith 1992; Smith and Kollock 1999; Taylor 1987). In similar approaches, commitment, emotional investment, sense of belonging, active engagement were located on one end of a continuum whose other end was occupied by low-involvement-requiring transactions.

From a theoretical viewpoint, these approaches focused on the recognition of consistent communities shared an epistemological view according to which the definition – and thus the existence – of online communities was given a priori, it was set before the beginning of the on field research. According to a similar epistemology, all the concrete cases showing the features which are numbered in the prior concept definition are seen as occurrences of that concept. As in Plato’s cave, once a ‘Form’ (*Idea*) of online community is established, every form of online collaboration matching those requirements is a reflection of that invisible Form. Social research methodologists label this way of proceeding ‘intensive classification’. According to Gasperoni and Marradi (1996), intensive classification proceeds by articulating the features an object needs to comply with in order to be classified as token of a concept.

Figure 1 – Intensive classification



Early research projects, for instance, took durability as an indicator in order to distinguish ‘successful’ communities from simple transactions: online social assemblages had to comply with this requirement, among others, in order to be numbered among online communities. However, the same authors used to agree on the fact that online assemblages are constitutively transient aggregations where durability is an exception (Smith 1992). Even when – like in early experiments – the social assemblage reached a sort of self-consciousness as a group, it was somewhat impossible to trace clear delimitations between the inner and the outer social space. In the Well, for example, more than 80 per cent of the subscribers were lurkers: ephemeral participants rarely intervening into discussions (Rheingold 1993). Thus, paradoxically it could be said that the WELL in 1990 was not the same WELL of mid 1980s in terms of participants.⁹⁷

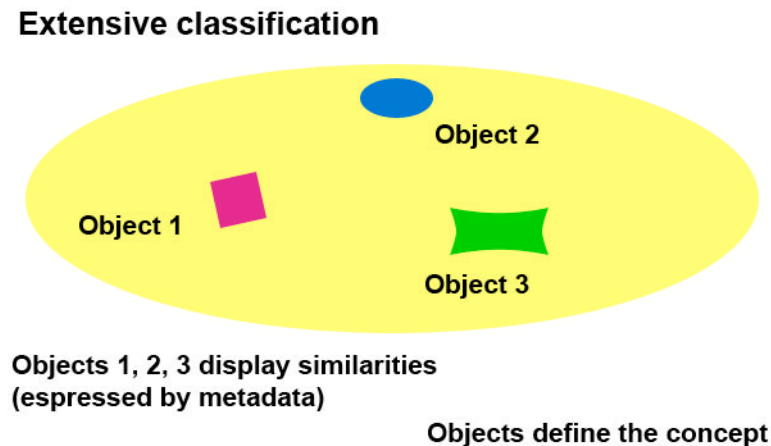
From a wider perspective, what is difficult – if not impossible – when researching about online forms of aggregation is exactly individuating a closed list of features that be specific to fluctuating digital assemblages. Furthermore, early researches explained the existence of peculiar communal ties by introducing additional social forces like ‘commitment’, ‘sense of belonging’, ‘sense of efficacy’, etc. That is, to overcome the paradox of a research project that postulated a priori the definition of unstable groups, these researches needed to introduce other extra variables.

In order to circumvent these constraints, this research proceeds the other way round: it does not aim at distinguishing ‘consistent communities’ from ‘simple transactions’ precisely because it does not postulate a substance that correspond to the substantive ‘online community’. This

⁹⁷ Not to mention the ownership, whose change in 1994 contributed to the flaking off of the core group of Wellites.

research does prefer to adopt an epistemological approach – that could be called ‘Wittgensteinian’⁹⁸ – according to which a concept is not defined as a starting point, but rather a posteriori, as the result of clustering together occurrences seen as similar. With respect to the previous way of classification, Gasperoni and Marradi (1996) call this method ‘extensive classification’.

Figure 2 – Extensive classification



Actually, one can find an echo of this way of proceeding in Wittgenstein’s language games. In 1933 the philosopher introduced language games to his students as a technique oriented to address one of the major philosophical puzzles, namely the tendency to make questions about general substantives – ‘what is knowledge, space, numbers, etc.?’ – and to answer them by naming a substance (Wittgenstein 1975). It is evident that this tendency is closely related to the Platonic method that postulates an ‘essence’ common to all the occurrences subsumed under a general substantive. On the contrary, to the Platonic Form Wittgenstein substituted ‘family resemblance’:

We tend to think that there must be something shared by, for instance, all games, and that this common property justifies the application of the general substantive ‘game’ to all the games, while, on the contrary, games constitute a *family* whose members display family resemblances. Inside a family, some members share the same nose, some others the same eyebrow, some others the same gait. These resemblances combine and intertwine. (Wittgenstein 1975: 26-7, *Italian edition. Author’s translation from Italian. Italic in the text*)

⁹⁸ We wish to thank Prof. Dieter Daniels for the suggestion of this label after our intervention at the ‘Community Vs Institution’ panel organized by the Boltzmann Institute Media.Art.Research during the *re:place conference* in Berlin, 14-18 November 2007.

Latour introduces a similar distinction between what he calls 'ostensive' and 'performative' definition. According to the French scholar, since they need to be constantly kept up by group-making efforts, social aggregates cannot be the object of an ostensive definition, but only of a performative one. 'The object of an ostensive definition remains there, whatever happens to the index of the onlooker. But the object of a performative definition vanishes when it is no longer performed' (Latour 2005a, 37).

In all these dichotomies, to the adoption of general definitions a priori, another, dynamic method of defining concepts is opposed. According to extensive classification, family resemblance and performative definition, concepts are defined on field through the recognition of objects as members of a cluster, of a family: 'they are made by the various ways and manners in which they are said to exist' (Latour 2005a, 34). It might thus be said that recognition⁹⁹ is a distributed situated action, 'social' in STS's terms: it is the result of the cognitive performances operated by multiple actors.

Given the constraints we numbered at the beginning of this paragraph, we had to follow a similar method when it came to choose the sample of analysis for this research. Instead of arbitrarily postulating a substance for 'digital communities', we selected as objects of this analysis those cases that had been recognized as occurrences of the concept 'digital community' by multiple social actors. We followed the traces left behind by group-makers: the entry forms submitted for the purpose of an award to the world's leading competition on digital culture, the *Prix Ars Electronica* in Linz. As a matter of fact, the projects participating in the competition had been recognized as occurrences of digital communities by the project leaders who submitted them to evaluation, by the competition's International Advisory Board who proposed additional entries and by the independent jury who excluded those projects that did not fulfil the requirements.¹⁰⁰

⁹⁹ More exactly, Greimas would consider this recognition an 'Enunciation', a mediation that assures the *mise en discours* of the natural language (Greimas and Courtés 1979). It should be noticed that, according to Greimas, Enunciation covers a broader field than and cannot be reduced to Austin and Searle's 'Speech Act'.

¹⁰⁰ More precisely, we shall take into account the projects participating in the competition from the second phase onwards. The reason for this selection is the fact that, as we shall see in paragraph 2.3, not all the projects submitted are recognized as instances of online communities by the International Advisory Board and the jury and some of them are thus excluded at the preliminary stage.

2.2.2 Selection of the sample. *Ars Electronica's Digital Communities competition as space of controversy*

From the impossibility to postulate the conditions of existence of online communities another consideration follows. If digital communities are difficult to be 'grasped', still researchers need a grip to handle such fuzzy objects. Here again, ANT comes to help us.

Even though Latour explicitly addressed the method of the social sciences only in 1999, he introduced controversies as a crucial field of inquiry in the science and technology domain in late 1980s. Latour (1987) conceives of controversies as a conduit whereby to penetrate from the outside the inner workings of science and technology *before* they get crystallized into an artefact, a 'black box'. Bringing together Latour and Greimas, one could argue that the situations where the social is made visible and graspable are those where meaning emerges from comparison and 'polemic structures':¹⁰¹ meetings, trials and plans in science labs, distance in time or space, breakdowns and fractures, but also archives and museum collections, fiction.¹⁰²

In this research, the *Prix Ars Electronica's Digital Communities competition* is seen as a peculiar form of controversy dealing with the acknowledgement of the most innovative practices of online collaboration. It is true that online communities as such are not the objects of open struggles starring explicit contenders as in the case of GMOs, XML standards or ICANN domains. With the exception of social-sciences-restricted diatribes arguing in favour of networks Vs communities,¹⁰³ it would be hard to find newspapers titling about activists' claims towards a return to the origins of virtual communities, or about controversies over efforts to extend patent rights to the definition of online communities.¹⁰⁴ Indeed, there seems to be a tacit acknowledgement among much diverse fields of activity over the notion of virtual community: far from been reclaimed by a single domain, it implicitly

¹⁰¹ Greimas and Courtés (1979) – see 'Polemic' – define polemic structure as the dualistic principle (subject/anti-subject) on which any human activity is based. Since they can be also contractual (agreement, cooperation, etc.) and not only hostile (blackmail, provocation, open struggle, etc), polemic structures lie at the core of any form of narration.

¹⁰² These situations are numbered in Latour (2005a, 79-82).

¹⁰³ See paragraph 1.3.1.

¹⁰⁴ However, it must be recalled that the situation is very different when it comes to specific Internet-based communities and social networking sites where users are requested to release their rights as content producers to the corporation running the service. Again, it could be said that while the basic dictionary of the Internet was released as a commons, its derivations are becoming increasingly proprietary.

adapts to the most diverse contexts. Nonetheless, as we have seen, it is by no means certain that what is meant by the term 'online community' in all these domains relates to the same thing. Prix Ars Electronica's Digital Communities competition thus constitutes an arena wherein the black box is re-opened, contrasting meanings are made explicit and the most innovative ones are selected by an internationally renowned board of experts.

Notably, three are the aspects whereby the Prix Ars Electronica's Digital Communities competition can be compared to a form of controversy. First, even if Latour does not overtly number them among controversies, competitions constitute a primeval form of polemic structure, an arena where meaning emerges from comparison between different projects. In our case, projects struggle in order to be recognized as successful digital communities.

Second, like controversies,¹⁰⁵ competitions present some recurring elements like a spokesperson, anti-groups, limes and accounts. In our case, competition is the place where online networks hit representation: it constitutes the moment in an unstable process of social innovation when a spokesperson must emerge and – together with her – self-representations, identity and opponents. Online assemblages are caught in the moment in which they struggle to crystallize into the form of 'digital community' in order to compete in a networked organization.¹⁰⁶

Third, to grasp controversies one needs accounts: agencies and actors are made visible into accounts. In this analysis we have been using as accounts the traces left behind by group-makers: the entry forms submitted from 2004 to 2007 by participants for the purpose of an award. Since the entry forms are produced in the moment when online assemblages fix the instant and take a picture of themselves, they represent accounts about what participants conceive of as digital communities. As in ANT accounts about controversies are analysed in order to trace back how the social is reassembled, similarly the entry forms submitted to the competition are analysed in order to trace back how the communitarian is reassembled. Furthermore, the submission forms have been archived by Ars Electronica over the years: this allows to perform also a temporal comparison by year and with respect to the early experiences we discussed in chapter 1. The minute shifts in the accounts produced for competition purposes will 'reveal to the observer which new combinations are explored and which paths will be taken' (Latour 2005a, 65).

¹⁰⁵ See Latour (2005a: 52-8).

¹⁰⁶ For the features that make Ars Electronica a networked organization, see chapter 3.

As a consequence, since accounts were mainly submitted as textual data, this research's methodological approach is textual analysis. We have been using quali-quantitative tools when dealing with the whole corpus of 920 entry forms. In the last part of the research, then, we concentrated on a restricted number of winning case studies by using purely qualitative tools.

Table 1 – Resume: from epistemological assumptions to techniques of data collection and analysis

Epistemological assumptions	Choice of the sample	Method	
		Technique of data collection	Technique of data analysis
Wittgensteinian classification of DC: DC definition is the result of clustering together objects seen as occurrences of the concept. Recognition as cognitive distributed action	Objects of study are the projects participating in Ars Electronica's competition. They have been seen as occurrences of the concept DC by different social actors: the projects authors + Prix Ars Electronica's International Advisory Board + independent jury	Process-produced entries exported from online archive as txt file with ASCII codification	Textual analysis, both quali-quantitative (for N cases) and qualitative (for n cases)
Study of controversies 1) Situations where the social is made visible are those where meaning emerges from comparison and/or polemic structures: meetings, trials and plans in science labs, distance in time/space, breakdowns, archives and museum collections, fiction 2) A features always present in controversies are accounts: agencies are made visible into accounts	1) Prix Ars Electronica competition as a form of controversy dealing exactly with the definition of DC, a situation where meaning emerges from comparison between different projects struggling in order to be defined as successful DC. 2) Use of archived submission forms as accounts: meaning emerges also from a distance in time		

In this extensive paragraph we have tried to number the constraints a researcher has to comply with in order to undertake a work on fuzzy digital assemblages today. We have then discussed an epistemological approach that over the last twenty years has been elaborating theoretical tools to deal with objects of study that display similar constraints. We have focused on how some of these tools can be adapted to this research and on how they can help us in overcoming those constraints. Finally, we have discussed the choices we made in order to coherently proceed from the epistemological positions to the choices of the sample and of the techniques of data collection and analysis.

In the next paragraphs of this chapter we shall discuss the latter techniques more in detail, while chapter 3 will present *Ars Electronica* and the Digital Communities competition in more depth.

2.3 Techniques of Data Collection

When it comes to the techniques of data collection for social sciences, Gasperoni and Marradi (1996) distinguish four methods on the basis of the degree of formalization followed in the process of data retrieval. Even if in the previous paragraphs we already discussed in depth the reasons for our epistemological approach, this brief list of techniques of data collection might help in contextualising the choices operated in this research.

1. Experimentation and simulation locate on one extreme as the methods that mostly require the intervention of the researcher in order to *generate* the data needed. Without human intervention, data would not otherwise exist. As it is widely known, this method is usually adopted by hard sciences, since it relies on presuppositions like the capability to control and manipulate variables, a pre-existent excellent knowledge of the object of study and the interchangeability of single items.
2. Structured data collection: information is collected, sorted and recorded into classes that are predefined by the researcher. This method presupposes a knowledge of the object of study sufficient to identify relevant properties and states.
3. Process-produced data collection: the researcher collects information produced during ordinary social processes (media coverage, court disputes, medical interviews, etc). Since data were produced for different purposes, they usually need to undergo a process of adaptation to fit the research's objectives.
4. Unstructured data collection methods are located on the less-formalized end and are often used in anthropological and ethnographic research. The researcher can rely on a limited set of tools and the data that she will be able to collect are strongly influenced by the actors observed. These methods include participant observation, story telling, techniques based on the use of photo and video, unstructured interviews.

At this point of the exposition, it should be clear why we chose the process-produced method of data collection. To the epistemological considerations we discussed in the previous paragraphs, one other

motivation can be added. As Beer and Burrows (2007) point out, when social sciences meet Internet studies there is a need to review extant analytical methods and collecting tools in order to face 'Internet time' related matters (Wellman and Haythornthwaite 2002). While many researches still rely on *ad hoc* produced data, a vast array of accountable information is left behind by Internet activities. In a world where academic research finds it hard to keep the pace with Internet developments, process-produced data can display major scientific weight, as Web crawling methods have shown,¹⁰⁷ while new ways of collecting data have to be devised.¹⁰⁸

Nonetheless, when data are retrieved from ordinary social processes, a major problem emerges, dealing with the need to adapt data to the new research objectives. In this research, entry forms were originally submitted for competition purposes and archived as html pages in four online databases (one database per year from 2004 to 2007). Two are the reasons why data in their original format were unsuitable for this research's purposes. First, the amount of data suggested the need to use a textual analysis software; however, most textual analysis applications require files in textual format. We had thus to export the entry forms as single files and to recode them into a format suitable for most software applications. Second, the entry forms were semi-structured open questionnaires. Apart from the questions about the project itself, the questionnaire also required personal information about the submitter(s). That is, further data that were not only superfluous, but could also interfere with the analysis.¹⁰⁹

As a consequence, the process of adapting the rough data to the research's needs was extremely time-expensive. We had to ask the help of four trained assistants in order to recode the data according to the following three steps.

1. To access the page in the database dedicated to one single entry form corresponding to each one of the 1411 participating projects. To exclude the empty forms and those disqualified by the International Advisory Board and the jury as not full-blown

¹⁰⁷ An excellent example is provided by the *Issue Crawler* project: <http://www.issuecrawler.net/>

¹⁰⁸ As documented by numerous discussions at the internationally renowned Association of Internet Researchers mailing list, an increasing number of researchers is turning to popular social networking sites in order to collect data to which they would not otherwise have access. See <http://www.aoir.org/>

¹⁰⁹ See Appendix, Document 1 for a model of the entry form.

digital communities. 920 projects and corresponding entry forms resulted from this first step.

2. To export each html page as a simple text file in .txt format and ASCII ISO 8859 – 1 (Latin 1) codification. This ASCII codification is the most widely readable one: while very few textual analysis applications can read PDF and html documents, Unicode and Utf-8 codifications are not supported by some textual analysis software like, for instance, *AntConc* and *InfoRapid Search and Replace*. As a matter of fact, our intention was not only to recode the data in the specific format suitable for the software we had already identified, but also to make them widely accessible for possible further analyses using different software. We thus chose to recode the data in a format and codification that are readable by the largest number of textual analysis applications.
3. To clean up each file from redundant information that could distort the analysis based on co-occurrence. Strings related to the submitter's biography or even to the pre-defined questions about the project could negatively affect the word-frequency calculus when using software that conducts quantitative analysis. We thus gave the assistants instructions to delete the textual strings corresponding to questions, personal details and section headings from each entry form.

2.4 Techniques of Data Analysis

As anticipated in paragraph 2.2, to analyse the data set we have been using textual analysis methods. Actually, under the label 'textual analysis' several techniques are subsumed and this research has made an extensive use of some of them, as we shall see in this as well as in the following paragraphs.

In order to discuss in detail the techniques of data analysis used, however, we first need to focus on the main constraints we have encountered in dealing with the *corpus* of analysis.

The first constraint deals with the high number of entry forms that constitute the Ars Electronica archive of digital communities. As we saw in the previous paragraph, the submissions were 1411 from 2004 to 2007. Of these, some submitted blank entry forms, while some others were excluded from the competition by the International Advisory Board and by the jury as non-communities. 920 participating projects and related entry forms resulted after this preliminary selection.

The main difficulty lies in the fact that all these texts are constituted by purely qualitative data: the questionnaire is structured in a way that lets participants free to include or omit quantitative data. We faced this problem by planning two distinct moments of the analysis. The first moment took into account the whole data set (N cases) and used mixed quali-quantitative techniques provided by textual analysis software applications,¹¹⁰ while the second moment concentrated on a selected number of case studies (n cases), using purely qualitative content analysis techniques.¹¹¹

The second constraint is related to the fact that the entries have been submitted by participants in four different languages: English, German, Spanish and French. In the wider analysis for N cases we addressed this problem by choosing a software like *Leximancer Version 3*, one of the few content analysis applications allowing the handling of N documents in different languages at once. As to the second qualitative moment of analysis for n cases, we relied on the researcher's knowledge of the languages.

Third, according to the epistemological approach we delineated in paragraph 2.2, we need to avoid postulating a priori categories as well as using 'digital community' as a key concept. As a matter of fact, according to the bottom-up approach borrowed from ANT, no hidden forces explaining the social to the sociologist can be assumed in advance.

As a consequence, when analysing the whole data set (N cases) we chose to use Relational Analysis, a method based on measuring how often concepts occur close together within the text. The co-occurrence between concepts is an important measure of the degree of association between them and Relational Analysis can be very helpful in addressing our main epistemological concern: the fact that a priori categories impose the reality of the investigator on the text rather than measuring the categories used by the authors of the text themselves. It is often argued, in fact, that the categories that are relevant for a document can be inferred from the co-variation amongst the high-frequency words in the text (see Weber 1990).

2.4.1 From the main objective to analytical tasks

If – as we stated in paragraph 2.1 – this research's main question concerns how social actors involved in online assemblages themselves account for the empowering potential of technological artefacts, the considerations made in

¹¹⁰ See paragraphs 2.5 and 2.6.

¹¹¹ See paragraph 2.7.

paragraph 2.2 have led us to further specify this goal. We have thus identified three tasks that translate the main question for analytical purposes.

Task 1.¹¹² To conduct a semantic analysis on prior concept 'online community' through concept profiling tools. This first task aims at exploring the elements associated with 'online community' in the entry forms submitted to Prix Ars Electronica's Digital Communities competition. If at this stage we have not yet got rid of the concept 'online community' as announced in paragraph 2.1, it is exactly because we want to ask social actors themselves what they mean by this expression when they participate in a competition for 'digital communities'. Our aim is also about comparing the emerging elements to those aggregated by the early subcultures described in chapter 1 and tracing possible shifts.

Furthermore, at this stage we also want to test Wellman's distinction between communities as bounded groups Vs loose networks by translating his argument into logical strings.

Task 2.¹¹³ To identify relevant themes emerging from the data set through the automatic extraction of concepts and the qualitative analysis of co-occurrence patterns. At this stage, no prior concepts are profiled as key terms – not even 'online community'. Our aim here is about identifying the matters of concern emerging from the whole corpus and some contrasting narratives related to them .

During the fulfilment of this task, we also want to conduct a comparison of the projects' content by year of submission. A sub-goal during this task is, in fact, to compare the entry forms by tracing the possible variations in the projects' conceptual maps by year of participation.

Task 3.¹¹⁴ To map the different theories of action underpinning the digital communities participating in the competition and to suggest a system of classification. If the first two tasks concentrate on how heterogeneous elements move from one older association into a different one by tracing variations over time (with respect to early online communities in Task 1, by year of submission in Task 2), Task 3 focuses on the comparison of the projects participating in the competition as far as the role of technological artefacts is concerned. In order to do so, we have to carry on a content analysis on a small number of case studies. By focusing on the means

¹¹² See paragraph 2.5 for a detailed discussion of the techniques used.

¹¹³ See paragraph 2.6 for a detailed discussion of the techniques used.

¹¹⁴ See paragraph 2.7 for a detailed discussion of the techniques used.

whereby groups are kept assembled, we want to describe the theory of action underpinning the rationale of the winning projects.

2.4.2 Choice of the software

As already anticipated, in order to handle the high number of entry forms, we have relied on some textual analysis applications (*Leximancer* and *InfoRapid Search and Replace*) and one statistical package (*SPSS 13* for Macintosh). While *InfoRapid Search and Replace* and *SPSS* have been used only occasionally, we have been extensively using *Leximancer* in order to fulfil the first two tasks. As a consequence, an explanation of the reasons why we chose this software is much needed.

Leximancer is a data-mining tool that can be used to analyse the content of collections of textual documents and to visually display the information extracted. It was originally developed at the University of Queensland in Brisbane, Australia and gained subsequent seed capital investment from *Imprimatur Capital* in London. The information is displayed by means of a conceptual map that provides a bird's eye view of the material, and represents the main concepts contained within the text and how they are related. Apart from viewing the conceptual structure of the data, the map allows users to perform a focused search of the documents, in order to explore instances of the concepts or of their co-occurrence patterns. That is, *Leximancer* provides a means of both quantifying and displaying the conceptual structure of a document set, as well as a means of using this information to qualitatively explore interesting conceptual features.

Notably, the following *Leximancer* features have turned out to be valuable in this research and constitute the reasons why we chose this software.

- It allows both quantitative and context-related analysis. This feature is very important in order to address the first constraint we mentioned at the beginning of this paragraph. *Leximancer*, in fact, enables the researcher to simultaneously conduct qualitative and quantitative analysis: while the conceptual map and the ranked list summarize the main extracted concepts and give access to their patterns of co-occurrence, the browsing function allows the researcher to navigate through the instances of a concept or of a co-occurrence between two concepts. These facilities have turned out to be very helpful when dealing with *N* cases made of qualitative data, as in this research's data set.

- It allows the simultaneous handling of vast data collections of texts in different languages. As already mentioned, this feature has been crucial in addressing the second constraint mentioned above.
- It allows the visual display of the main concepts and their relations. The star-like graphical representation of the semantic associations has the advantage of defining a concept not by any substance, but by a list of associations. As the reader can remember from paragraph 2.2.1, this is the exact way we chose to define concepts in this research. However, the major limitation of Leximancer is given by the fact that it does not allow to follow mutations and movements through the visual map. We nonetheless obviated this constraint by introducing comparisons in time as well as among projects.
- As to the third constraint mentioned above, Leximancer has turned out to be extremely appropriate in order to address it. The software performs concept extraction without forcing the researcher to define key concepts in advance nor it assumes them from a predefined generic dictionary. Leximancer can automatically extract its own dictionary of terms for each document set: it infers categories from the co-variation among the high-frequency words in the text collection. That is, it is capable of inferring the concept classes that are contained within the text, explicitly extracting a thesaurus of terms for each concept.

Box 2 – Detailed explanation of Leximancer's rationale

When talking about 'automatic extraction', in order not to be accused of the same technological determinism from which this research has up to now kept the distance, an accurate explanation of how Leximancer works is needed.

Concepts in Leximancer are collections of words that generally travel together throughout the text. For example, a concept 'cat' may contain the keywords 'cat', 'vibrissae', 'kitten', 'claw', 'meowing', etc. These terms are not included in a pre-existing dictionary, but are weighted according to how frequently they occur in sentences containing the concept compared to how frequently they occur elsewhere. Therefore a *relevancy standard deviation value* that determines how central each term is to the concept is calculated. A sentence (or group of sentences) is only tagged as containing a concept if the accumulated evidence (the sum of the weight of the keywords found) is above a set threshold.

The definition of each concept (i.e. the set of weighted terms) is learnt from the text itself. Leximancer identifies concept seeds (the starting point of concept definitions) by looking for candidates through the most frequently appearing words in the text or by taking into consideration the prior terms set by the user. The potential seeds are evaluated by calculating the number of strongly relevant terms for each

seed candidate: a word may be considered a seed when it has many strongly related items that often co-occur with it and occur not so often alone.

More terms can be added to the definition through learning. During learning, in fact, Leximancer generates a thesaurus of terms for each concept. This learning is an iterative process in which the thesaurus defining a concept is updated: occasionally, more appropriate central terms may be discovered, pushing the seeds away from the centre of the concept definition. The aim of concept learning is to discover clusters of words which, when taken together as a concept, maximise the relevancy values of all the other words in the document set.

The learning phase occurs as follow. Given the seed words, the relevancies of all other words in the document are calculated (i.e. how often they co-occur with the seed item as opposed to how often they appear without it). Words are added to the concept definition if their relevancies fall above a certain threshold, thus leading to a new concept definition. The process then continues, calculating the relevancy of other words in the document compared to the new concept definition (i.e., how often does a word co-occur with any element in the concept definition as opposed to without any of them). These relevancy values are normalised, with the words above a set threshold being added to the definition. As the relevancies of the words contained within the concept are normalised and there is an inclusion threshold, over time certain of the initial keywords may be lost. The process of learning is iterative, but will converge to a stable state: the learning halts when the number of sentence blocks classified by each concept remains stable.

Apart from detecting the overall presence of a concept in the text (which is indicated by the brightness of the concept in the conceptual map), the concept definitions are also used to determine the frequency of co-occurrence between concepts. This co-occurrence measure is what is used to generate the concept map.

- The data generated by Leximancer can be imported into a statistical analysis package. This feature is crucial when comparing the semantics of the entry forms by year as for Task 2.
- Coming to mundane technical motivations, Leximancer is a multi-platform application (it runs on Macintosh, Linux and Windows operating systems), its interface is pretty intuitive and, above all, it is stable and relatively fast. Furthermore, although it is proprietary software and a copy for research purposes costs 850 dollars, some fully-working evaluation copies are available for researchers upon request. Far from being secondary aspects,

these latter technical and organizational features are quite decisive when working on a large data set with limited resources.¹¹⁵

2.5 Task 1: Profiling Community

At this first stage our aim was to explore the elements associated with online community as they emerge from Ars Electronica's Digital Communities data set. We thus semantically analysed the concept 'online community' and compared this semantic configuration to those of the early subcultures described in chapter 1. Furthermore, in this task we also tested Wellman's distinction between communities as bounded groups Vs networks by translating his argument into logical strings.

This first stage of analysis thus aimed at profiling an issue ('online community') which is present within a given text collection which, in turn, includes other concepts that are not relevant at this stage. To pursue this task we needed to use Leximancer's Manual Concept Seeding and Concept Profiling tools. To perform the last part of the analysis – the test of Wellman's argument – we first translated the argument into a set of hypotheses and logical strings and then tested the hypothesis by searching for co-occurrences with *InfoRapid Search & Replace*.

Table 2 – Analytical techniques used for Task 1

Techniques used	
Manual Concept Seeding (Leximancer)	The researcher can seed her own concepts prior to running the learning phase. By so doing, thesaurus definitions of these concepts will be extracted from the text. In our case, the manually defined concept is only one: 'online community'
Concept Profiling (Leximancer)	This function allows to discover new concepts during learning which are relevant to the concept defined in advance through the Manual Concept Seeding technique
Search with Boolean operators (manual + InfoRapid Search & Replace)	We use this technique to test Wellman's argument. After translating his argument into hypotheses and logical strings, we perform a Boolean search in the data set using a textual search application

We adopted the first two techniques by setting Leximancer's options as reported in Table 3. The key settings related to the techniques used are highlighted and an explanation is provided in the last column on the right.

¹¹⁵ After all, one of the crucial insights of ANT is exactly its focus on the material, organizational and bureaucratic conditions that get crystallized into the final product. See Latour (2005b), especially when he talks about the Space Shuttle Columbia, exploded in 2003, that 'embedded' the NASA bureaucracy.

Table 3 – Leximancer settings for Task 1

Leximancer settings			
Setting	Description	Value	Explanation
Pre-processing Phase			
Stop-word removal (yes/no)	Remove words in the predefined Stop List from the data	yes	
Edit stop-word list	It allows to check the words that were counted as stop-words and remove them from the Stop List	no stop-words removed from Stop List	
Make folder tags (do nothing/make folder tags/make folder and filename tags)	This parameter is very important when comparing different documents based on their conceptual content. It causes each part of the folder path to a file, and optionally the filename itself, to be inserted as a tag on each sentence in the file. These tags will be included as concepts in the map. Thus, inspecting the links formed with the other concepts can allow the comparison of the content of the various folders	do nothing	
Automatic Concept Identification			
Automatically Identify Concepts (yes/no)	Enable/disable the automatic generation of concepts. By disabling this option, only concepts defined by the researcher will be shown on the map	no (disabled)	Since I am interested in profiling only the concept 'online community', I disabled the Automatic Concept Identification node. I don't want any automatic or manual concepts present other than that one
Total concept number (automatic/1-1000)	The number of automatically selected concepts to be included in the map	/	
Number of names (automatic/1-1000)	Of the number of concepts chosen, what is the minimum number of concepts that should be forced to be names	/	
Concept Editing			
TAB Auto Concepts	It allows to delete, merge and edit automatically extracted concepts	none	
TAB Auto Tags	It allows to delete, merge and edit folder tags	none	
TAB User Defined Concepts	It allows to create, delete, merge and edit manually defined concepts	Add New Concept 'community' whose Initial Thesaurus	I first created the compound concept "online AND community", but it turned out that only

Tracing back Communities

		Definition is: 'community', 'communities', 'online', 'virtual'	a few entry forms use this exact compound expression. Therefore I defined it this second, more general way. This option activates the Manual Concept Seeding technique
TAB User defined tags	It allows to delete, merge and edit user defined tags	none	
Thesaurus Learning			
Learn Concept Thesaurus (yes/no)	Turning off the Thesaurus Learning will prevent Leximancer from adding additional items to the concept definitions	yes	Vast data set: need not only for simple keyword search, but also for weighted accumulation of evidence
Learning Threshold (1-21)	This setting allows to control the generality of each learned concept. Increasing the level will increase the fuzziness of each concept definition by increasing the number of words that will be included in each concept	14 (default)	
Sentences per Context Block (1-5)	This option allows to specify the sentences that appear in each learning block	3 (value for most circumstances)	
Break at paragraph (ignore/break at paragraph)	This setting is to prevent context blocks from crossing paragraph boundaries	Ignore	Need to overcome the fix structure of the application form by allowing the context blocks to cross paragraphs
Learn Tag Classes (yes/no)	Turning it on will treat Tag classes (folder tags if included at the pre-processing stage) as normal concepts, learning a thesaurus definition for each	No	
Concept Profiling			
Number to discover (0 - 1000)	It indicates how many extra concepts should be discovered	60	This function allows to discover 60 new concepts during learning which are relevant to the concept defined in advance through the Manual Concept Seeding technique. This option activates the Concept Profiling technique
Themed discovery (Concepts in ALL/ ANY/	It selects how the discovered concepts should be related to the pre-defined concept set	Concepts in ANY	

EACH)			
Classification and Indexing			
Entities	Entities are the concepts that are actually shown on the conceptual map, and represent the top-level of classification of the text. Generally all concepts can be used as entities, but it is advisable that only a subset of the concepts is used	Concepts Discovered conc. User concepts	I included all the concepts found by the Concept Profiling function into the conceptual map
Properties	Properties, in contrast to entities, are concepts that are checked for co-occurrence with the entities, but are not displayed on the cluster map		
Kill classes	Kill classes are concepts that if found in a classified block of text, cause all other classifications of that block to be suppressed		
Required classes	Required classes are classifications that must be found in blocks of text, or else the blocks are ignored. At least one of the required classifications must be found in any context block for it to be indexed into the map		
Classification settings			
Sentences per context block (1 – 100)	Specify how many sentences per tagged text block	3 (default)	
Break at paragraph (yes/no)	Prevent tagged context blocks from crossing paragraph boundaries	yes	
Word Classification Threshold (0.1-4.9)	This threshold specifies how much cumulative evidence <i>per sentence</i> is needed for a classification to be assigned to a context block	2.4 (default)	
Name Classification Threshold (2.6-5)	This threshold specifies the minimum strength of the <i>maximally weighted</i> piece of evidence to trigger classification	4.5 (default)	
Blocks per Bucket (1-100)	A bucket contains one or more consecutive context blocks. If the sum of the evidence of a particular concept within the bucket is below a threshold, the	1	

	specific concept tag is removed from all the sentences in the bucket		
Mapping and Statistic			
Conceptual Map			
Map Type (Linear/Gaussian)	The Gaussian map has a more circular symmetry and emphasises the similarity between the conceptual context in which the words appear. The linear map is more spread out, emphasising the co-occurrence between items	Linear	Linear mapping is more stable than Gaussian mapping. I am also interested in focusing the co-occurrence of 'community' with both 'networks' and 'groups'
Concept Statistics			
Attribute Variables	It allows to set attribute variables from the Concept List	/	
Category Variables	It allows to set category variables from the Concept List	/	

We tested this configuration on $\frac{1}{4}$ of the data set by running content analysis with Leximancer on a sample of 230 entry forms. Since the resulting map was quite unstable (every time we re-set and re-ran the map, the distribution of the concepts on the map used to change significantly), we adjusted some settings. To stabilize the map we first chose to break at paragraph in the Thesaurus Learning settings, so that context blocks were prevented to cross paragraph boundaries. Then, since the number of iterations¹¹⁶ using the standard Learning Threshold (14) was 5 – while the software designers advise to keep it between 6 and 11 – we increased the Learning Threshold value to 17, thus obtaining results in 7 iterations. Additionally, we raised the Blocks per Bucket value in the Classification setting to 3 so that the threshold necessary to tag a block of sentences with a concept turned higher.

We went on testing the new settings on the restricted sample five times. At this stage we realized the need to add stop words like 'project', 'statement', 'based' to the stop-word list, and to merge derivative forms like, for instance, 'collaborate', 'collaborative', 'collaboration' into one single term. We thus loaded the concept list previously obtained on the Concept Seed Editor and deleted/merged the stop words/derivative forms. Before re-running

¹¹⁶ See Box 2 in paragraph 2.4 for an explanation of the iterative learning process underpinning Leximancer's rationale.

the whole analysis, we disabled the Concept Profiling function, since the concepts previously discovered through this facility had already been uploaded in the Concept Seed Editor. When we got assured about the map stability, we went on analysing the entire data set.

Once we obtained the resulting map for the entire data set, we stabilized it by re-setting and re-running it several times. While so doing, we took note of the clusters that remained stable and focused our attention on them. This last stability check was particularly important because in Leximancer the map generation process is stochastic and thus needs to be repeated several times to stabilize the results.

The results of Task 1 are discussed in detail in paragraph 4.1. Furthermore, there is another methodological technique that we used to get to the last part of those results, namely the part related to Wellman's argument. After processing the data set with a focus on the definitions given to online communities in the entry forms, in fact, the results showed a co-occurrence pattern that seemed to contrast Wellman's argument about online communities to be found in loose networks rather than in bounded groups.¹¹⁷ In particular, in the results obtained with Leximancer, 'community' occurred more frequently with the concept 'group' rather than with 'network'.

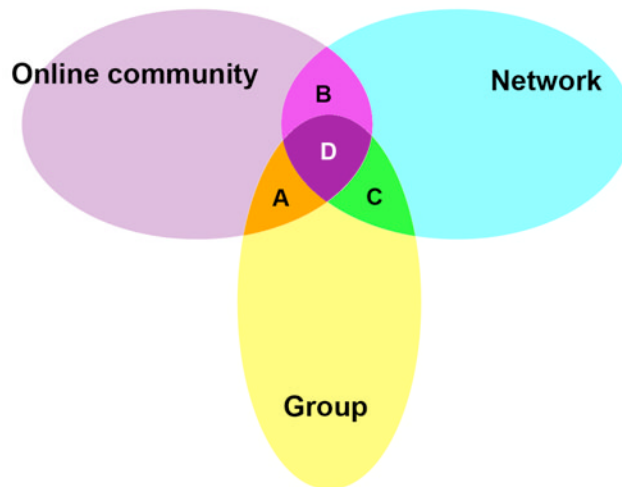
We thus decided to investigate this unexpected result in depth by further searching the co-occurrence of the exact terms 'online community', 'group', 'network' by means of a text search free software which allows the use of Boolean operators, *InfoRapid Search and Replace*. To do this, we first needed to translate Wellman's argument into a set of hypotheses and then into logical strings.

If Wellman's argument is true, when one carries on a search into a data set made of accounts provided by informants, the number of cases wherein the term 'online community' co-occurs with the term 'network' should be higher than the number of cases where the term 'online community' co-occurs with the term 'group'. Moreover, Wellman's sharp distinction between groups and networks would lead to expect that 'network' and 'group' be mutually exclusive and very rarely occur together. Even more rarely they both should co-occur together with 'online community'.

A visualization can help us to translate these hypotheses into equations.

¹¹⁷ See paragraph 4.1 for the results cited, paragraph 1.3.1 for Wellman's argument.

Figure 3 – Logical intersections between ‘online community’, ‘network’, ‘group’



In the scheme, A represents the intersection of ‘online community’ with ‘group’, that is, the cases where both terms ‘online community’ and ‘group’ are present in the same entry form. B represents the intersection of ‘online community’ with ‘network’, C the intersection of ‘group’ with ‘network’ and D the intersection of ‘online community’, ‘group’ and ‘network’. Using this scheme, one can extract three hypothetical equations from Wellman’s argument:

- 1 - $A < B$ (intersection of ‘OC’ and ‘group’ is minor than the intersection of ‘OC’ and ‘network’)
- 2 - $C = 0$ (intersection of ‘network’ and ‘group’ equals 0)
- 3 - $D = 0$ (intersection of ‘OC’, ‘network’ and ‘group’ equals 0)

To verify these equations, we used a text search application allowing the search with Boolean operators throughout vast document sets. The software, *InfoRapid Search & Replace*, is a freeware produced by Ingo Straub Softwareentwicklung. As the name suggests, it also allows the replacement of words and expressions, a very important feature when dealing with plurals and compound expressions as in this case.¹¹⁸

We thus started by replacing plurals and compound expressions. First of all, we searched for all the occurrences of both ‘community’ and ‘communities’ using the any-character operator ‘.’ and obtained 6462 occurrences. Second, we searched the compound expression ‘online

¹¹⁸ It must be mentioned that – differently from Leximancer – InfoRapid Search & Replace does not perform multilingual searches at once. For this subtask we thus had to select only the entry forms submitted in English, which are 742 out of 920.

communit.’ and replaced the 206 occurrences found with the code ‘DIGCOM’. In order to homogenise the multiple expressions whereby online communities are indicated in the entry forms, we coded also ‘virtual communit.’ (89 occurrences), ‘digital communit.’ (343 occurrences) and ‘Internet communit.’ (8 occurrences) into ‘DIGCOM’. By so doing, we obtained 646 occurrences for ‘DIGCOM’. Third, we coded the plurals ‘groups’ and ‘networks’ respectively into ‘group’ and ‘network’. At this point, we had three expressions – ‘DIGCOM’, ‘network’, ‘group’ – suitable to run the Boolean search.

Turning back to the equations, we coded them into logical strings:

1 – As to the first equation ($A < B$), we coded A as DIGCOM&group&!network (intersection of ‘DIGCOM’ and ‘group’ and not ‘network’) and B as DIGCOM&NETWORK&!group (intersection of ‘DIGCOM’ and ‘network’ and not ‘group’). The resulting equation to be tested was DIGCOM&group&!network < DIGCOM&NETWORK&!group

2 – To test the second equation ($C = 0$), we coded C as group&network. The resulting equation was group&network = 0

3 – To test the third equation ($D = 0$), we coded D as group&network&DIGCOM. The resulting equation to be tested was group&network&DIGCOM = 0

The complete results of all the searches are reported in the Appendix, while a discussion of the results is available at paragraph 4.1.3.

2.6 Task 2: Extracting Themes

Task 2 aimed at identifying relevant themes emerging from the data set through the automatic extraction of concepts and the qualitative analysis of co-occurrence patterns. At this stage, no prior concepts were profiled as key terms – not even ‘online community’. Our aim here was about identifying the themes emerging from the whole data collection and some contrasting narratives related to them. To perform this task, we used the Automatic Concept Selection technique described in Table 4 and compared the frequencies of co-occurrence for relevant concepts.

During the fulfilment of this task, we also conducted a comparison of the projects’ content by year of submission. We compared the entry forms, that were submitted from 2004 to 2007, by tracing the possible variations in the

whole conceptual map by year of participation. We thus applied the Folder Tag Generation technique described in Table 4 and used SPSS 13 as bar chart generation software.

Table 4 – Techniques used for Task 2

Techniques used	
Automatic Concept Selection (Leximancer)	This function automatically extracts seeds for concepts spanning the entire document collection. These seeds – based on high frequency words – represent the starting point of concepts, with the full definition being extracted during the learning phase
Comparison of the co-occurrence frequency list for each one of the major concepts	By comparing the relative strength of concepts co-occurring with the most relevant ones, I aim at identifying some contrasting narratives related to the main topics extracted
Folder Tag Generation (Leximancer)	This technique allows to easily convert categories of text (variables) into explicit tags in the text, and hence into concepts on the map. This step causes the names of all parent folders of a file to be embedded as separate tags on each sentence within a file. This is a powerful feature for freeing up the exploration of category co-variances
Bar chart generation (SPSS 13)	Given the poorness of Leximancer's statistical visualization tools, I imported the data matrix into SPSS 13 in order to generate meaningful bar charts showing the temporal trend of single concepts

Stating that Leximancer's Automatic Concept Selection facility automatically extracts the concepts which are important to the authors of the texts of course needs a deeper explanation that absolve us from the blame of a naïve *credo* in software's automatisms. As we saw in paragraph 2.4.2, Leximancer identifies concepts on the basis of a relevancy metric. That is to say that Leximancer simply conducts co-occurrences calculi: a terms is said to be part of a concept if it often co-occurs with it and occurs not so often with other concepts (i.e. the *relevancy standard deviation value* is above a set threshold). During learning, in fact, Leximancer generates a thesaurus of terms for each concept. This learning is an iterative process in which the collection of terms defining a concept is updated, so that initially central terms

can reach a peripheral position or even be lost when the relevancies are normalised after a certain number of iterations. The aim of concept learning is to discover clusters of words which, when taken together as a concept, maximise the relevancy values of all the other words in the document.

It is because of this way of working that we chose Leximancer as a tool which could assist the first steps of this research on a vast data set. Given our epistemological approach requiring not to set in advance the relevant categories for the analysis, in fact, we needed not only a tool that could automatize the search for co-occurrences, but also a software that do not force us to formulate our own coding scheme a priori. By inferring the categories which are present in the texts from the co-variation amongst the high-frequency words, Leximancer's rationale allows us to avoid the a priori formulation of categories, while providing us with stability and reliability. Of course, then, the concepts extracted by means of the software constituted only the starting point of our analysis that continued by qualitatively investigating the contrasting narratives associated to the topics extracted.

Furthermore, stability and reliability can only be assured by a careful selection of the software's techniques and by an attentive setting of its numerous options. Very different (and inconsistent!) results can be obtained by only changing minor settings before running the analysis. In order to pursue Task 2, we thus set Leximancer's options very differently from how we had set them for Task 1.¹¹⁹

First of all, since one of our goals is about comparing the textual documents' semantics by year of submission, we set 'make folder tags' in the Pre-Processing node. This selection allows the generation of folder-related tags which will appear in the map. Since we previously put the files in folders named by the year of submission, the 'folder tags' setting causes each file to generate a year-related tag class, allowing us to look at trends over time.

Second, we enabled the Automatic Concept Identification function in the homonymous node. This function was disabled in Task 1, since it was focused on the profiling of a single issue. This technique allows the automatic identification of words seeds that are the starting points for concepts that will then be extracted during the learning phase. We set to 'automatic' the total number of concepts to be generated from the top of a ranked list, since we did not want to set an established number of concepts in advance. We set

¹¹⁹ See Table 5 in Appendix. The following explanations are highlighted in azure in that Table.

the number of names option as 'automatic', too, because this setting allows a natural mixture by not forcing names into the list.

In the Concept editing node we edited the automatically generated concepts prior to learning. Actually, we limited our intervention to merge all plurals and derived morphological forms (e.g. -ing forms, adjectives derived from similarly extracted substantives). It should be noticed that in the Auto Tags tab the year-related tags (Tag classes) appeared.

We then ran this configuration, paying attention that the Tag classes were included as Entities in the Classification and Indexing node. As for Task 1, we tested this configuration on 1/4 of the data set. The resulting raw map showed a critical problem: the connectedness of the conceptual graph was too high and each concept was connected to too many other concepts, thus making hard to discriminate significant, strong patterns. In order to address this problem, we thus decided to change some important settings.

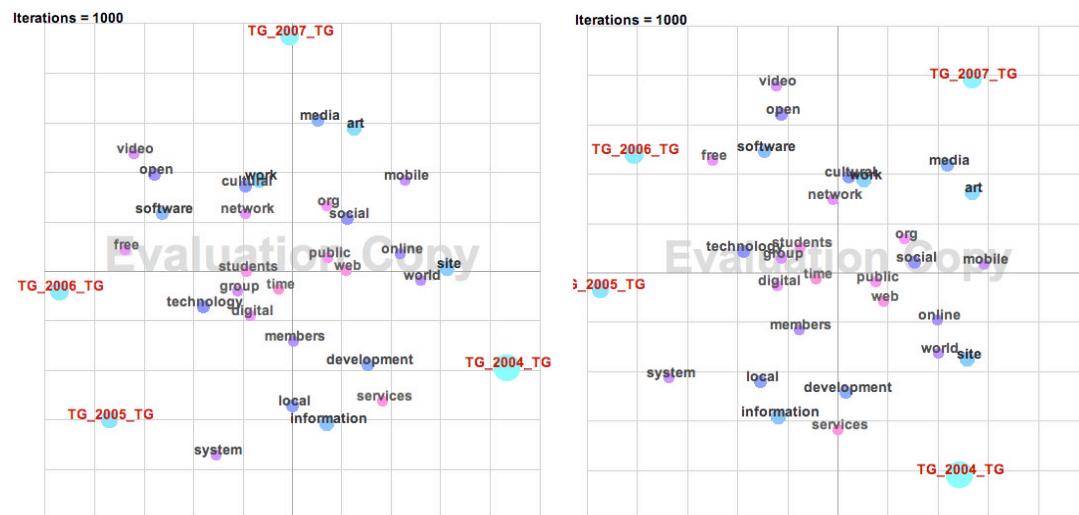
- in the Concept Editing node, some stop-word-like terms like 'project', 'data', 'context', 'years', 'area', 'events', 'language', 'process', 'making', 'began' were deleted;
- in the Thesaurus Learning node, the Learning Threshold was decreased to 12 in order to decrease the fuzziness of each concept definition by reducing the number of words that are included in each concept. The number of iterations with this new value was 8: perfectly comprised in the required range (6-11);
- in the Classification and Indexing node, the Word Classification Threshold was raised to 4 in order to increase the amount of cumulative evidence required for a classification to be assigned to a context block;
- again in the Classification and Indexing node, the Block per Bucket value was raised to 6. This peculiar setting is in fact the best way to decrease the matching sensitivity and increase precision.

We tested these changes by running eight times all the nodes on the whole data set. Every time, we checked the map stability by resetting and re-clustering the map. In the end, the trial-and-test adjustments resulted in a highly stabilized map.

Apart from the concepts extracted, the resulting map also showed the categories related to the year of submission (Tag classes) distributed around the concepts. In order to test whether the Tag classes were difficult to differentiate on the basis of the global semantics of the data set or whether,

on the contrary, a good semantic differentiation by year of submission was possible, we placed two map applet windows side by side, reset and re-clustered one of them, and then compared it with the other. As a result, the locations of the conceptual categories showed high repeatability, meaning that the Tag classes were relatively easy to differentiate on the basis of the global concept selection (Figure 4). Essentially, the categories related to the year of submission addressed the shared concepts to different degrees.

Figure 4 – Comparison of concept distribution by year. The second window is considerably similar to the first, even if the resetting-and-re-clustering command was repeated 4 times. In particular, the Tag classes representing the categories related to the year of submission are located near the same clusters of concepts in the two windows. This means that each Tag class is strictly related to a semantic context, thus allowing a semantic differentiation by year of submission.





















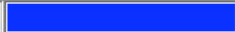



This is an important result in itself. The period we took into consideration, in fact, is quite short – if not for technological development, at least for cultural and social change. One would not thus expect appreciable differentiation in projects submitted from 2004 to 2007. On the contrary, this result demonstrates an extreme speed of adaptation of the digital culture.

Once it was ascertained that a semantic differentiation by year is possible, we tried to obtain some statistics that could allow us to visualize the temporal trends for single concepts in a meaningful way; that is, not only *if*, but also *how* the entry forms' semantics changed yearly. We thus closed the map and in its place we visualized the co-occurrence between concepts by means of the Concept Statistics function. In Leximancer's last node we thus set the Tag classes as Attribute Variables and the main themes reported in the map – like 'art', 'information', 'site', 'social', 'art', 'work', 'software', 'radio', 'research', 'technology', 'system', 'rural' – as Category Variables. By so

doing, we obtained a bar chart showing the co-occurrence between each category variable and each attribute variable.

Figure 5 – Leximancer's Concept Statistics window

Category Variable	Attribute Variable [P(attr cat)]	Attribute Variable	P(attr cat)
art		TG_2004_TG	0.4194078947368421
art		TG_2005_TG	0.10032894736842105
art		TG_2006_TG	0.0805921052631579
art		TG_2007_TG	0.3996710526315789
information		TG_2004_TG	0.4814004376376155
information		TG_2005_TG	0.20350109409190373
information		TG_2006_TG	0.18380743982494532
information		TG_2007_TG	0.13129102844638948
radio		TG_2004_TG	0.039473684210526314
radio		TG_2005_TG	0.13157894736842105
radio		TG_2006_TG	0.2894736842105263
radio		TG_2007_TG	0.5394736842105263
research		TG_2004_TG	0.21875
research		TG_2005_TG	0.09375
research		TG_2006_TG	0.6041666666666666
research		TG_2007_TG	0.08333333333333333
rural		TG_2004_TG	0.5684210526315789
rural		TG_2005_TG	0.21052631578947364
rural		TG_2006_TG	0.1894736842105263
rural		TG_2007_TG	0.031578947368421054
site		TG_2004_TG	0.4194444444444444
site		TG_2005_TG	0.12222222222222222

Copy to Clipboard

Looking at Figure 5, the poorness of Leximancer's statistical visualization tools is self-evident. Not only it is impossible to separate each concept's chart from the others, but also the 'Copy to Clipboard' function allows to paste only the mere numeric data, thus losing the graphical representation.¹²⁰

Because of this poorness, we thus imported the co-occurrence matrix obtained through Leximancer into SPSS 13 statistical package in order to produce more flexible graphs. Since we were interested in finding the temporal trend for single concepts, we selected the simple bar chart in SPSS

¹²⁰ As a matter of fact, Figure 5 was obtained by grabbing the screen shot.

graph window and set the co-occurrence value (standard deviation) as Y-axis and the year of submission as X-axis. The results of this part of Task 2 are discussed in paragraph 4.2.1.

Once we obtained a list of relevant themes and compared their evolution in time, we were nonetheless still at a starting point. If, in fact, we want to learn from social actors the roles attributed to technological objects in their theory of action, a longer and more exacting way must be undertaken. In the last part of Task 2 we therefore carried out a qualitative analysis based on the co-occurrence patterns found by Leximancer. By comparing the relative strengths of concepts co-occurring with the most relevant ones, we came to identify some contrasting narratives related to the topics extracted. The results of this last part of Task 2 are discussed in paragraph 4.2.2.

2.7 Task 3: Mapping Theories of Action

While Tasks 1 and 2 concentrated on how elements move from one association into a different one by tracing overall variations over time, Task 3 focused on the comparison of the projects participating in the Digital Communities competition as far as the role attributed to technological artefacts was concerned. Namely, Task 3 aimed at mapping the different theories of action associated with digital communities and at suggesting a system of classification for the projects participating in the *Prix*.

The methods we have used up to now aim at reducing the complexity of the social when dealing with vast data sets. Conversely, Task 3 pursued the opposite movement of addition, proliferation, observation. It privileged an articulated observation of a small number of entry forms so that more associations might emerge and contrasting definitions might be deployed in much more depth than we could do when addressing the whole data set.

Since they were acknowledged as initiatives fostering innovation in the digital domain by an international jury of worldwide experts, we took into consideration the rationale of the projects that from 2004 to 2007 deserved a *Golden Nica* (first prize) or *Award of Distinction* (second prize).¹²¹

To fulfil this task, we carried on a textual analysis. As Gasperoni and Marradi recall, textual analysis is ‘a set of approaches aiming at studying acts of communication. They use analytical partition and text classification procedures.’ (Gasperoni and Marradi 1996, *Author’s translation from Italian*).

¹²¹ It should be mentioned that not for all the winning projects an entry form is stored in the database. This happens, for instance, with *Wikipedia*, whose entry form is not present in the database.

Similarly to what happens with structured data collection methods, in fact, in textual analysis texts are analytically split up into units and subjected to a set of questions gathered in an analysis sheet that resembles structured questionnaires.

To elaborate the analysis sheet, we adapted a four-steps method suggested by Pozzato (2001) (Table 6).

Table 6 – Method for analysis sheet elaboration (Pozzato 2001)

1) Preliminary identification of the question	
2) Question enrichment	Development of a theoretical background suggesting broad interpretative categories
3) Methodology test	Elaboration of descriptive and operative categories; sample selection; test of the analysis sheet on 1/3 of the sample
4) Operative phase	Coding of the text according to the analysis sheet

First, in paragraph 2.1 we set as objective of the research the investigation of the assorted patterns of self-empowerment that have underpinned the development of techno-social assemblages in the last years. Given the need for a bottom-up approach, in that paragraph we translated that objective into a question: how do social actors involved in online aggregation themselves account for the empowering potential of information technologies? In Task 3, when the first part of the question had already been solved thanks to the choice of the sample, the questions to submit the texts to became as the following: ‘what are the different theories of action, the rationales that underpin the entry forms we are going to analyse? Which is the role attributed to technological objects in the course of action?’.

Second, as to the question enrichment, given this research’s ANT perspective and the refusal to a priori adopt any theoretical framework, we evaded this stage and passed to the identification of descriptive and operative categories.

Third, we elaborated descriptive categories and operative questions that borrow some insights from Greimas’ semiotics and Latour’s Actor-Network theory. Notably, from Latour the analysis sheet borrowed the list of traces left behind by activities of group formation and the distinction between mediator and intermediary. According to the French scholar, since the list of groupings composed of social aggregates is potentially infinite, it is easier for social enquirers to substitute it with the more abstract list of the elements

which are always present in controversies about groups. These elements are: 1) a spokesperson who speaks for the group existence, defines it and argues for its uniqueness; 2) some anti-groups that can be compared with the group of interest, so that its consistency may be emphasized; 3) an element that originates the group boundaries, so that they are rendered durable and taken for granted. Usually *limes* are provided by appeals to tradition, law, nature, history, freedom, etc.; 4) professionals (social scientists, journalists, statisticians) who speak for the group existence. Any account by these professionals is part of what makes a group exist or disappear (see Latour 2005, 30-4).¹²²

The second element that the analysis sheet borrowed from ANT was the fundamental distinction between mediator and intermediary. We have already addressed this distinction in paragraph 2.2. Summing up, a mediator is an actant that translates, transforms, modifies the elements it is supposed to carry; a mediator is never a cause: it does not determine, but makes someone do something, it triggers further actions and activates new participants; every time a mediator appears, it introduces a bifurcation in the course of action and the output is never predictable starting from the input. On the contrary, an intermediary only transports agency from an input to an output without transforming it; the output can therefore be easily predicted. With intermediaries, elements are usually linked through relationships of cause-and-effect and the chain transporting action is thus short, often made of only a couple of elements (exactly the cause and the effect).

From Greimas and semiotics the analysis sheet borrowed the notion of 'competence', the distinction between actants and actors and the notions of 'Addresser' and 'Addressee'. We have already introduced the notions of 'competence', 'actants' and 'actors' in paragraph 2.2. As to the Addresser and the Addressee, they designate the two subjects of a process of communication. They correspond to the 'sender' and the 'receiver' of Information Theory, although this latter approach does not take into consideration the dynamic constitution of the subjects of communication. This is indeed the main difference between Information Theory, on one side, and STS and semiotics, on the other side: while for the first tradition the subjects of communication pre-exist to the interactive process, according to the

¹²² On the generative role of journalists and pollsters in making social actors (for instance the 'public-opinion') exist, see also Landowski (1989).

second school subjectivity gets installed *through* the process of communication.¹²³

Fourth, we defined the sample for analysis. As already recalled, we chose to analyse the projects submitted to Ars Electronica that were awarded a first or second prize during the period under investigation. Fifth, we tested the analysis sheet on 1/3 of the sample before passing to the proper analysis. The final analysis sheet is reported as Document 2 in Appendix.

Once we obtained the analysis sheet, we passed to the proper operative phase. We thus coded textual extracts as if they were answers to the operative questions. At the end of each session, we used to index all extracts according to the last column on the right in the analysis sheet. Results for Task 3 are reported in paragraph 4.3.

¹²³ Of course we cannot account here for the immense literature dealing with subjectivity and communication from 1950s onwards. As Mattelart (2001) has pointed out, this literature traces indeed the history (and controversies) of what is meant by 'Information Society'. We thus only signal the origin of Informational Theory introducing the concepts of 'sender' and 'receiver' from a mechanical perspective in Shannon and Weaver (1949). Jacobson (1962) adapts a similar approach to structuralist linguistics. On the opposite side, Coquet (1997) sees language as an action that transforms subjectivity *inside* the discourse.

Chapter 3

Ars Electronica between the 'Industrial Age' and the 'Information Society'

3.1 Ars Electronica as a Leading Networked Organization in Media Art and Digital Culture

If net culture proliferated in the 1990s, as we have seen in paragraph 1.1.3, the 1980s had witnessed the birth on an international scale of the first festivals dealing with art and 'new technologies'. Among the most important international festival there were (and in many cases still are) *VIPER International Festival for Film Video and New Media* in Basel, Switzerland (since 1981, www.viper.ch), *Imagina* in Montecarlo, Principality of Monaco (since 1982, www.imagina.mc), *ISEA International Symposium on Electronic Art* worldwide (since 1988, www.isea-web.org), *Multimediale* in Karlsruhe, Germany (since 1989, www.zkm.de), *Next Five Minutes* in Amsterdam, Holland (since 1993, www.next5minutes.org), *DEAF Dutch Electronic Art Festival* in Rotterdam, Holland (since 1994, <http://deaf.v2.nl/>), *Transmediale Festival* in Berlin, Germany (since 1997, www.transmediale.de).

As Bazzichelli (2006a) has more recently recalled, these events characterized the emergent phase of that 'electronic culture' that was meant to fulfil the gap between the humanistic and the techno-scientific scholarships. In mid 1980s engineers and computer scientists started to collaborate with architects, musicians and visual artists on 'electronic art' projects that required multi-faceted skills and know-how from both the technological and the humanities domains.

The forerunner of 1980s' festivals was the *Ars Electronica Festival for Art, Technology and Society* (www.aec.at), started in Linz, Austria in 1979. Today, together with the *Siggraph Art Show* in Chicago, USA (www.siggraph.org), Ars Electronica is the sole media art festival that is active since the 1970s. Yet, the fact of being a pioneer, alone, would not explain why Ars Electronica has become one of the most influential

networked institutions in the field of digital art and media culture worldwide. There exist in particular two aspects that are peculiar to Ars Electronica and that might contribute to explain its success.

3.1.1 Linz's identity from steel capital to digital culture district

First, Ars Electronica is the fruit of an extensive public endeavour and of a long-term commitment to fostering economic development through public cultural policies. Well before current debates on 'creative cities', in early-1970s Linz, culture used to exert a socio-economical propulsive role. Initiatives like *Forum Upper Austria*, *Forum Metall* and *Forum Design* were launched with the goal of starting mass cultural events that would have an echo also outside the region, while few years later the University of Art and Industrial Design was founded. Furthermore, in 1974 the construction of the *Brucknerhaus* – a concert and congress hall dedicated to Linz's composer Anton Bruckner – laid the cornerstone for Linz's cultural mile on the banks of the Danube.

On its part, the first edition of the Ars Electronica Festival was born on an initiative by some local and regional public institutions as the core element of an endeavour of radical urban renewal. The roots of this need for urban regeneration are to be found in Linz's industrial history. More than any other Austrian city, in fact, in the 20th century Linz has undergone major economic, social and demographic changes. Early 20th-century Linz combined its tradition as one of Austrian centres for advancement in technical knowledge on modern communications with a vocation for popular open-air cultural events. As Siegbert Janko, one of the figures that led the realization of the Ars Electronica Center – Museum of the Future, has recalled, 'the big cultural events that were held in Linz in the late 1920s and early 1930s can be regarded as the precursors of the principles of "culture in public places" and "interdisciplinarity" [...] and stand for the democratization of the cultural enterprise' (Janko 2004).

Then, during World War II the National Socialists transformed this small city on the banks of the Danube into the centre of heavy industry and of weapon industry, in particular. For years the city's image remained almost exclusively anchored to heavy industry, and Linz has been the heart of the Austrian steel industry for 40 years. The post-war period thus marked the beginning of a search for a new identity that, on one side, would reject the economic and cultural mission assigned by National Socialism, but, on the other side, could at the same time assure an international role for the city.

Therefore, local policymakers started to look at culture as the driving force in devising a brand new identity.

However, this plan found many stronger competitors on its path. First, Austrian culture- and tourism-oriented sector was monopolized by Mozart's heritage whose capitals were (and still are) Salzburg and Vienna. As Wolfgang Winkler, artistic director of LIVA, and Wolfgang Lehner put it, 'the Bruckner Festival [was] a first step in the city's process of self-definition in matters of culture between Vienna and Salzburg. Indeed, the "exploitability" of Bruckner's oeuvre does not even come close to that of Mozart's' (Winkler and Lehner 2004). Second, thanks to the *steirischer Herbst* festival, in early 1970s Graz was positioning itself as the city of reference for avant-garde art. As a consequence, Linz had to turn its eyes to its steel past and devise alternative strategies to position itself into such a competitive scenario.

The alternative was found at the intersection of art and science. As Ars Electronica's initiator and ORF Upper Austria Regional Studio's managing director Hannes Leopoldseder has recalled,

the concept for the Ars Electronica took up these ideas [of popular large cultural events], while also developing the identity of the steel town further. It did not focus on the raw materials of the 20th century (iron and steel), but on a material of the future: electronics – and its implications for art and society. It was from such thoughts that the final concept for the first Ars Electronica emerged. (Leopoldseder 2004)

That is, since late 1970s the city has been positioning itself as a 'laboratory of the future' with an emphasis on information technologies, media art and art in public spaces. And the Ars Electronica has been an essential part of this positioning since the beginnings.

The first edition of the Ars Electronica Festival in 1979 was meant to mark the transition from the 'Industrial Age' to the 'Information Society'. It merged the interest on electronics and art – expressed through a program that featured exhibitions, interactive installations, symposia on computer art and graphics, video art, electronic music – with the search for popular acceptance by means of a public open-air event – the *Linzer Klangwolke* ('Linz's Cloud of Sound') – during which a Bruckner's symphony was accompanied by a laser and light show on the banks of the Danube.

Figure 6 – Ars Electronica 1979. Festival opening with Robot SPA 12. Courtesy: Ars Electronica



The first edition was a huge success, with 100,000 people attending the Klangwolke in a city of 200,000 inhabitants. As a matter of fact, over the years the Ars Electronica Festival has shown the capability to make media art accessible to a mass audience, as well as to insiders from all over the world. The 2008 edition has attracted 35,900 visitors, 484 artists and speakers from 25 countries and 516 accredited journalists from 35 countries. In addition, the audience for the annual Linzer Klangwolke once again – as in the previous years – amounted to almost 100,000 visitors.¹²⁴

The first Ars Electronica was organized in conjunction with the International Bruckner Festival by LIVA, a municipal cultural agency, and ORF's (Austrian public broadcasting company) Upper Austria Regional Studio. The character of hazardous investment on something as impalpable as 'the Future' and the mission to develop innovative cultural concepts were explicitly pursued since the design phase. As the 1979's concept manifesto explains,

this electronic arts event signals a further, logical expansion of the Bruckner Festival, addressing in this case a specific subject matter. In this way, the LIVA and the ORF Upper Austrian Regional Studio intend not only to contribute to the further development of the International Bruckner Festival, but also *to provide a decisive impulse for the future direction of the development*: to initiate in Linz a center for electronic arts, a specific but crucial field of the avant-garde. The present fundamental concept for the

¹²⁴ Source: Ars Electronica press office.

3 *Ars Electronica between the 'Industrial Age' and the 'Information Society'*

contents of Ars Electronica originated with the cyberneticist and physician Dr. Herbert W. Franke from Munich, the electronic musician and composer Hubert Bognermayr, Ulli A. Rützel and the head of the ORF Upper Austrian Regional Studio, Dr. Hannes Leopoldseder. The purpose of Ars Electronica is not to take stock of the past; *it is oriented instead to the developments of tomorrow. Thus this event for electronic arts and new experience assumes a character of incalculability, of risk, and of daring to try something new.* At the same time, however, *Ars Electronica poses a challenge to artists, technicians, cultural critics, and ultimately to the public* encountering new forms of expression in art. (Linzer Veranstaltungsgesellschaft 1979. *Author's emphasis*)

Yet, the objective was worthy of the risk: if Ars Electronica's efforts turned out to be successful, then it meant to create a climate of innovation for business and industry, as well. As Leopoldseder himself recalled, 'ORF consciously did not see its public cultural mission only in information and education, but also in its role as impetus for the region' (Leopoldseder 2004).

As a matter of fact, over the years Ars Electronica has succeeded in attracting and disseminating expertise and resources in technological, scientific and commercial sectors throughout the region. Today, Linz is Austrian third cultural centre after Salzburg and Vienna and the most important hub for ICT applied to culture (see Sacco 2003). The Linz's region has been transformed from the capital of steel and environmental problems into a renowned district for high-tech industry. Global companies that are active in sectors such as industrial and banking automation, semiconductors and computer components like *voestalpine AG*, *Gericom AG*, *SAP AG*, *Infineon* (through its research branch DICE), *KEBA AG*, *Fabasoft AG* were born or have established their national subsidiaries in this area. Together

with Vienna and Graz, today the 200,000-inhabitants Linz represents one of Austria's major centres around which ICT enterprises cluster.¹²⁵

Many commentators agree in highlighting a role for public cultural policies in this transformation. The fact that some of the companies above mentioned are the main Ars Electronica's sponsors testifies the existence of strong ties between the ICT industry and the digital culture scene fostered by the Festival. As Siegbert Janko has recalled,

today, Linz sets great store in tightly interweaving modern technology and open culture. The city holds a leading position in both fields. Culture and industry stand side by side as definite equals. There exist tightly woven networks and a functional symbiosis linking industry and culture, and it is precisely this symbiosis that characterizes the image of the city and, with the Ars Electronica Center, has placed it in an internationally recognized pole position in matters of new technology. (Janko 2004)

According to Sacco (2003), Ars Electronica has acted as a catalyser in the process of redefinition of the productive specialization of the region. Ars Electronica is a top-level experience 'that has been able to build a global high-quality network and to periodically attract the most influential and innovative researchers in the field of multimedia technologies in the city. The skill transfer from cultural production to the overall cultural productive system has happened gradually and seamlessly' (Sacco 2003. *Author's translation from Italian*).

Linz's orientation to the future and its symbiosis between culture and industry have been acknowledged also by the European Union and in 2009

¹²⁵ In Austria, about 21,000 licences have been issued for ICT related enterprises. With roughly 2,500 new companies in 2005, the digital industry ranks 2nd in Austria's entrepreneurial rankings. Medium sized enterprises showed the strongest performance and Austria ranks 8 in 2007 European Union's Innovation Scoreboard (see http://www.proinno-europe.eu/admin/uploaded_documents/European_Innovation_Scoreboard_2007.pdf). Austria's digital economy has grown to an overall volume of € 32 bn in 2005, which is a plus of about 9% compared to 2004. The domestic market has grown by 3.2% to € 21.8 bn, exports and foreign activities have risen by 10% to € 10.1 bn. Austria's digital industry shows a considerable multinational presence – partly because Austria is a main hub for the ICT business in Central and Eastern Europe. This explains the high share in exports and foreign activities: 60% of all ICT exports and foreign revenues come from Central and Eastern Europe, 25% from the EU-15 countries. Austria's largest ICT segment has been and still is telecommunications. This is partly due to increased activities by Telekom Austria which took over several mobile providers in South Eastern Europe during recent years. Furthermore, Austria is highly productive and expansive in derivative fields, such as industrial automation, automotive IT, embedded systems, facility automation, supply chain management, logistics, simulation, robotics, RFID, optimisation, analysis and forecasting. Source: Krumpak (2007).

the City of Linz is going to be the European Capital of Culture. One of the crucial instruments whereby this acknowledgement was reached is the city's Cultural Development Plan (KEP), approved by the City Council in 2000 with the title 'From a Steel City to a Culture City'.¹²⁶

The KEP has provided the guidelines for a systematic cultural repositioning, and thus for a long-term transformation of Linz. As to the local development policy, the KEP assigns a strategic role to culture and art as elements that can foster creativity, mobility, imagination and intuition. Art and culture are thus conceived of not only as factors enhancing the quality of life, but also as a crucial asset for economic development. According to the KEP, the goal of a far-sighted public cultural policy is to set the best pre-conditions for fostering synergies among knowledge-based productive sectors.

Making artistic research free of economical constraints and cultural trends is a major objective in this regard and administrative and financial tools are being developed in order to assure this freedom. First, much attention is put on freedom of expression and transparency as warranties of the freedom of research and artistic creativity. Second, new cultural infrastructures – a gallery, a theatre and a learning centre – to be embedded into the Central Station area have been planned. Third, public financing evaluates exclusively criteria such as innovation, originality, focus of interest, even gender opportunities, cultural diversity protection. Fourth, the restructuring of former industrial complexes is aimed at creating new spaces for culture. Fifth, an organizational and planning coordination among all the main cultural institutions of the city is systematically pursued. Sixth, special long-term financing instruments oriented to art institutions are under active consideration. Seventh, a massive simplification of the administrative procedures and an alleviation of the tax burden for cultural organizations are taking place. In addition, the KEP is the result of an intensive process of public debates with politicians, citizens actively involved in cultural affairs, alternative independent artists and cultural producers.

It is undeniable that the central role in this developmental process has been played by Ars Electronica. By realizing that the domains of economy, science, commerce and technology need a guide in the form of an open and long-term cultural policy, Ars Electronica and the City of Linz through the KEP have contributed to the international recognition of Linz as a city of culture.

¹²⁶ The KEP is downloadable at <http://www.linz.at/english/culture/3895.asp>, accessed 31 October 2008.

3.1.2 Ars Electronica's four pillars

The second reason for Ars Electronica's leading role in media art and digital culture is to be found in the multiple domains of activity covered by the four pillars that constitute it:

- Ars Electronica Festival – Festival for Art, Technology and Society
- Prix Ars Electronica – International Competition for CyberArts
- Ars Electronica Center – Museum of the Future
- Ars Electronica Futurelab – Laboratory for Future Innovations

The spirit of the Ars Electronica Festival lies in its active involvement of international experts from diverse disciplines from the macro-areas of both arts and sciences and in their encounter with an audience of highly diverse backgrounds. Annually since 1986, the Festival has featured symposia, exhibitions, performances and events designed to foster artistic and scientific confrontation with socio-cultural phenomena induced by technological change. Since 1987, the Festival has assigned a main topic to each yearly edition. From 1987 to 2008 the themes have been:

- 1987: 'Free Sound' in its many aspects: from sound-scenes, sound-bodies and sound-images to a sound-park with sound-sculptures around the Brucknerhaus;
- 1988: 'The Art of the Scene', about the fusion of various disciplines of art: from music to theatre, dance, video and cinema;
- 1989: 'In the network of Systems', about telecommunication, interaction and computer culture;
- 1990: 'Digital dreams - Virtual Worlds', about cyberspace and virtual reality;
- 1991: 'Out of Control', about the dangers proper to the increasing mechanization of life and the getting-out-of-control of technological systems;
- 1992: 'Endo Nano. The World from Within', about endophysics and nanotechnology as radical changes in the point of view towards the world;
- 1993: 'Artificial Life - Genetic Art', about biotechnology and genetic art;

- 1994: 'Intelligent Environment', about how computer-assisted artificial intelligence and advanced sensor-technology have changed people's concept of the environment;
- 1995: 'Welcome To The Wired World. Mythos Information', about the new forms of interaction and communication via networks and cables;
- 1996: 'Memesis. The Future of Evolution', about the normalization of new technologies from cultural techniques to new 'nature';
- 1997: 'Fleshfactor. Human Beings as Information Machines', about the reformulation of dichotomies such as Nature/Technology and Mind/Machine by disciplines like neuroscience, biology and experimental psychology;
- 1998: 'Infowar – information.macht.krieg', about the strategies of computer-supported conflict ranging from the Gulf War to the activities of cyberguerillas;
- 1999: 'Life Science', about the possibility of forming human life beyond the morphological level of the body enabled by genetic engineering and biotechnology;
- 2000: 'Next Sex. Sex in the Age of its Procreative Superfluosity', about how the possibilities of the life sciences are provoking major modifications in the way mankind regards ethical-moral conventions about sex;
- 2001: 'Takeover. Who's Doing the Art of Tomorrow', about the new forms of art enabled by the altered socio-economic conditions that affect professional and amateur artistic work;
- 2002: 'Unplugged. Art as the Scene of Global Conflicts', about the contradictions of the networked globalization;
- 2003: 'Code - The Language of our Time', about the influence of digital code within and upon art, law and life;
- 2004: 'Timeshift. The World in Twenty-Five Years', about the developments in art, technology and society over the last 25 years of Ars Electronica's existence;
- 2005: 'Hybrid. Living in paradox', about the blurring of national, material, technological and psychological boundaries allowed by the recombination of three basic codes: numeric, genetic and atomic;

- 2006: 'Simplicity. The art of complexity', about the ideologies associated with the concept of simplicity in the age of networked complexity;
- 2007: 'Goodbye Privacy', about the interrelationships between public and private spheres;
- 2008: 'A New Cultural Economy', about the limits of intellectual property.

From this list it may be inferred that yearly themes were usually so broadly deployed that they did not only resound with hot topics, but they also allowed Ars Electronica's symposia and exhibitions to elaborate their own original – and contentious – contribution to the shaping of the international discourse on digital culture. As Leopoldseder has highlighted, 'over the 25 years of the festival, the themes and titles have at all times been controversial, especially due to their heterogeneity [...]. It is precisely the variety of its topics that has guaranteed Ars Electronica its forward-looking approach, while also positioning it in a controversial debate in the media' (Leopoldseder 2004).

Figure 7 – Festival Ars Electronica 2000, *Klones* exhibition by Dieter Huber (A). As the exhibition's caption explains, this work is meant to provoke irritation in the audience, thus making it reflect on the boundaries between naturalness and artificiality in human reproduction. 'Dieter Huber's computer-manipulated photos treat the cloning and creation of a human being in a way that is both subtle and radical. Taking the tension between naturalness and artificiality as far as it will go, the images of intimate and tabooed body parts enhanced to achieve the utopian state of a medical vision function as an irritant. The cycle *Klones* is among the earliest artistic treatments of the potential of genetic engineering, and is also among the few whose results not only comment on this subject but also reflect it by means of a technological process'. Author: Sabine Starmayr. Courtesy: Ars Electronica



The Prix Ars Electronica, 'competition for CyberArts', was established in 1987 by Christine Schöpf from ORF as an international forum for artistic creativity and innovation in the digital realm. The vision underpinning the Prix was about establishing an international competition for digital media which over time would cover all areas of creative design. As a matter of fact, while the first Prix edition included three categories ('Computer Graphics', 'Computer Animation', 'Computer Music'), over the years the categories have expanded and since 2007 there are eight categories: 'Computer Animation/Film/VFX', 'Digital Musics', 'Hybrid Art', 'Interactive Art', 'Digital Communities', 'u19 – freestyle computing', the Ludwig Boltzmann Institute's 'Media.Art.Research Award', '[the next idea] Art and Technology Grant'.¹²⁷

Since the beginning, an accurate selection of the jury members among the top experts in each category, the largest prize pursue worldwide in this domain¹²⁸ and a wide-scale media coverage characterized the Prix Ars Electronica as a leading international competition in the field of digital media art. With over 40.617 entries since 1987, thanks to its yearly pace, its

¹²⁷ For more details on the Prix Ars Electronica and an extensive description of its categories see paragraph 3.2.

¹²⁸ In 1987 the prize pursue amounted to one million Austrian schillings – 73,000 current euros. The first sponsor that made the competition possible was Siemens Ag, which invested 350,000 dollars. Today Prix Ars Electronica is supported by City of Linz, Province of Upper Austria, Liwest Kabelmedien GmbH and voestalpine. The prize pursue amounted to 122,500 euros both in 2007 and 2008.

international scope and the variety of the works submitted for prize consideration, the Prix Ars Electronica Archive has reached considerable dimensions and provides a detailed look at the developments in media art over the last 21 years.

Today, the Prix Ars Electronica is organized by Ars Electronica Center Linz GmbH¹²⁹ and ORF Upper Austria in collaboration with Brucknerhaus Linz and OK Center for Contemporary Art.

In 1996 a third pillar was added to the Festival and the Prix on an initiative of Linz's Mayor Franz Dobusch. The Ars Electronica Center – Museum of the Future was planned and jointly realized by the City of Linz, *ad personam* cultural director Siegbert Janko and ORF. Its mission is to implement interactive forms of mediation to facilitate the general public's encounter with virtual reality, digital networks and modern media. As Leopoldseder has recalled, 'the Ars Electronica Center is an educational facility that strives to be an emissary for the digitalization of many areas of life and work, while also examining these developments critically' (Leopoldseder 2004).

Furthermore, the Ars Electronica Center is the permanent organizational basis of Ars Electronica's regional and international activities. It is a meeting place for artists, scientists and media experts and assures their encounters even beyond the festival week in September. This vocation has recently been further enhanced thanks to the new Ars Electronica Center building whose construction is going to be finished by the end of 2008. With the new expansion, the Ars Electronica Center will become an all-in-one facility with 3,000 m² of space for exhibitions, 1,000 m² dedicated to research and development, 400 m² for seminars and conferences, 650 m² for food service and catering and a 1,000-m² plaza to host open-air events.

¹²⁹ The city-owned Ars Electronica Center Linz GmbH was founded in 1995 as a substitute of the Brucknerhaus in the organization on behalf of the City of Linz.

Figure 8 – Front of the new Ars Electronica Center. Author: rubra. Courtesy: Ars Electronica



The fourth pillar was added in 1996, as well. Originally, the Ars Electronica Futurelab was meant to be a facility providing technical support and a laboratory dedicated to producing multimedia contents for the Festival and the Center. Yet, over the years it has evolved into a R&D hub for local and international assignments. Today, the Futurelab's activities range from designing and engineering exhibitions and artistic installations to pursuing collaborative research with local universities and joint ventures with private sector associates.

As a media art laboratory, the Futurelab represents a peculiar type of think-tank where artistic and technological skills blend: it combines the analytical and experimental approach of a scientific laboratory with the creativity of an atelier. As the Futurelab's website puts it, 'the methodology of Shared Creativity that characterizes the entire working process gives rise to the emergence that is typical of the atelier-lab's creations. In phases of intensive, multidirectional processes of exchange, various inspirations, perspectives and approaches crystallize into a concept for the project's content and design' (source: http://www.aec.at/futurelab_about_en.php).

The Futurelab is currently constituted of three departments: Interactive Space, dealing with human-machine interaction in real space, Digital Surfaces, dealing with interaction in screen-based media, and Virtual Environments, dealing with 3-D space. The areas of application range from

culture and education to industry and commerce: since its inception, the Futurelab has experienced an opening of the market for this kind of know-how. Notably, the Lab develops innovative working methods and projects in the domain of media performances, media art and architecture, information design, exhibits. Actually, these domains are the recent specialties that have evolved from the Futurelab's original focus on Interaction Design.

The Futurelab's core competence on Interaction Design has also contributed to develop a peculiar 'poetics'. It entails an approach to man-machine interaction focused on the process of mediation itself, rather than on the two subjects of the interaction. 'The idea behind a human-computer interface is not conceived of by taking its endpoints (device–user) as the starting point, but rather on the basis of the aesthetic, content-driven and functional dramaturgies that develop within the interaction' (source: http://www.aec.at/futurelab_about_en.php).¹³⁰

At present, in the context of the whole Ars Electronica, the Futurelab acts as a 'mediator' that translates artistic insights into more feasible applications. According to Ars Electronica's artistic director Gerfried Stocker, 'the Futurelab is the transmission vehicle that makes Ars Electronica's artistic competence available in scholarly and commercial fields too' (Stocker 2004). Notably, the Futurelab has assumed a strategic role since when its projects have led Ars Electronica's transformation from a geographic point of attraction for the international digital media elites to an exporter of creativity and innovation. As a matter of fact, the Futurelab is active in projects worldwide – from other European countries to US, continental Asia and Japan, and provides an important source of income to the overall Ars Electronica statement.

All these aspects make Ars Electronica a networked organization with both local and international ties. As a matter of fact, recently to the four pillars above mentioned a further division has been added. The international branch of Ars Electronica is a platform that promotes Ars Electronica's media art productions outside European boundaries and foster transnational cooperation, as the International section of Ars Electronica's website explains:

¹³⁰ As far as the notion of mediation is concerned, the Futurelab's approach comes nearer to the understanding of mediation theorized by Science and Technology Studies rather than to that of Human Computer Interaction. As the reader probably remembers from paragraph 2.2, for STS actors emerge *during* action, while for HCI they pre-exist to interaction. See pages 90-92.

Ars Electronica is an established trademark name beyond Austria - it stands for innovation and creativity. Its success story is based on a strong network of artists, research institutes and universities in Europe, America and Asia that has constantly grown over the last three decades. This network enables the Ars Electronica to detect future trends and to present them worldwide. Ars Electronica has developed itself as an international platform in demand and has emerged into bustling international exhibition activities. That way, up-to-date trends in contemporary media art can be made open to the international public - something which could never be achieved by the Ars Electronica Festival alone. (http://www.aec.at/international_about_en.php)

As a consequence of its pioneer character, of its international prominence, of its networked nature and of its leading position in the digital media art domain, Ars Electronica retains one of the world's largest archives of media art from throughout the last 30 years. It consists of the catalogues, programs and other material documenting the Ars Electronica Festival since 1979 and video and audio recordings of the conferences in more recent years; text and visual documentation on the works that have won the Prix Ars Electronica since 1987; material on Ars Electronica's and Futurelab's own projects; biographies of the artists and theorists who took part in the various editions.

In the following paragraph we are going to deal with the Archive of the Prix Ars Electronica in more details.

3.2 The Prix Ars Electronica: from early Computer Animation to the 'Digital Communities' Category

As above mentioned, the Prix Ars Electronica is one of the most important international awards in the field of media art and digital culture. As a matter of fact, in 2007 3,374 entries from 63 countries were submitted in the eight categories of the competition.¹³¹ Since 2007, six Golden Nicas, 14 Awards of Distinction, approximately 70 Honorary Mentions as well as the 'Media.Art.Research Award' and the '[the next idea] Art & Technology Grant' are awarded each year to the most innovative projects.¹³² With a total prize purse amounting to 122,500 euros and juries made of worldwide renowned experts, the Prix Ars Electronica is a landmark in the digital media art realm.

While in 1987 there existed three categories, since 2007 the competition includes six categories, plus a youth competition and a prize for theoretical works on media art. The 'Computer Animation / Film / VFX' category is the heir of the former Computer Animation category. It is open to

¹³¹ Source: Ars Electronica press office. See Table 7 in Appendix.

¹³² See Table 8 in Appendix.

2D or 3D works of computer animation, digital short films, character animation, abstract CG animation, scientific visualizations, commercials, music videos, visual effects. Both independent works in the arts and sciences and commercial productions in the film, advertising and entertainment industries may be submitted in this section.

The jury of experts gathers in April and evaluates the entries according to a set of criteria like the works' aesthetics, their originality, the excellence of execution, the compelling conception and innovation in the technique of presentation. Among the winners in this category there are internationally renowned artists and studios like John Lasseter and Pixar, Mario Sasso and Nicola Sani, Karl Sims, Blue Sky Studios, Digital Domain. The award-winning works from this category are usually screened at the Ars Electronica Animation Festival during the Festival week in September.

The 'Digital Musics' category exists since the first edition of the Prix, as well. It is open to audiovisual performances, sonic sculptures, soundtracks, installations, soundspace projects, radio works, net-music, generative musics, digital DJ-culture, mash-ups, music videos, computer compositions (algorithmic, acousmatic and experimental), analogue and electro-acoustic methodologies. Participants may be individuals, groups, institutions or companies, but exclusively commercial works like product advertisement are excluded.

The crucial criterion for evaluation in this category is the artistic and innovative use of digital tools to manifest a convincing realization. Other criteria are based on the works' aesthetics and originality, their compelling conception, the degree of innovation in the special expression of sonic imagination, the technique and quality of the presentation. The award-winning works are usually performed during the Ars Electronica Festival as part of the concert programme. Among the winners in this category there are Peter Gabriel and Jean Claude Risset, Aphex Twin and Chris Cunningham, Bernard Parmegiani, Ryoji Ikeda.

The 'Interactive Art' category was established in 1990 as a category open to interactive works in all forms and formats, from installations to performances, from network projects to telepresence and virtual/augmented reality. It is a prerequisite that the projects have already been realized, so that they may be judged on the basis of a documentation. Exclusively commercially oriented projects cannot be submitted.

The criteria for evaluation are the artistic quality in the development and design of the interaction, the harmonious dialog between the content level and the interaction level, the socio-political relevance of the interaction. The

winning works are usually showcased at the CyberArts Exhibition at the OK Center for Contemporary Art in Linz. Some of the winners in this category are Lynn Hershman Leeson, Knowbotic Research, Tim Berners-Lee, Toshio Iwai and Ryuichi Sakamoto, Maurice Benayoun and Jean-Baptiste Barrière, Rafael Lozano-Hemmer and Will Bauer, Blast Theory and the Mixed Reality Lab of the University of Nottingham.

The 'Hybrid Art' category was established in 2007 as a competition open to hybrid and transdisciplinary approaches to media art: from software and generative art to artificial life, from location-based and geospatial storytelling to multi-user environments, from media architectures to transgenic art, from automation and robotics to media-based interventions in public spaces. Even in this case, exclusively commercial activities are excluded.

As to the criteria for judgement, emphasis is put on the process of blending different media and genres into new forms of artistic expression and on the act of transcending the boundaries between art and research, art and social/political activism, art and pop culture. Particular attention is paid on how the entries defy classification in a single one of the other Prix categories. The winning works are presented at the CyberArts Exhibition at the OK Center for Contemporary Art in Linz.

The winners in this category so far have been the Art and Science Collaborative Research Laboratory of the University of Western Australia (*SymbioticA*) and Helen Evans and Heiko Hansen.

The 'u19 – freestyle computing' is Austria's largest computer competition for young people. It has been held annually since 1998. It is dedicated to Austrian residents aged 19 and under. It is basically a freestyle computing competition: entries can be any sort of work that was produced, created or designed with a computer, from animated films to graphics and drawings, from sounds to games, from software and hardware applications to websites. There are no restrictions based on the tools used.

Once the entry has been submitted, all young participants receive feedback from the jury of experts about their work. Winners are invited to the awards ceremony that is held during the Ars Electronica Festival. In addition, the Ars Electronica Center – Museum of the Future dedicates a special one-year-long exhibition to the projects from this youth competition.

For each one of the five categories so far mentioned – as well as for the 'Digital Community' category that will be discussed later on – a Golden Nica amounting to 10,000 euros (5,000 for u19), two Awards of Distinction

amounting to 5,000 euros each (2,000 for u19¹³³) and several Honorary Mentions are granted each year.

Moreover, there are also two special grants. On one hand, the '[the next idea] Art and Technology Grant' is open to all kinds of innovative concepts and ideas in the fields of art, design and technology. Creatives from all over the world, older than 19, who have developed yet-unproduced concepts in these fields may submit an entry. Again, exclusively commercial projects are excluded.

The winner receives a prize amounting to 7,500 euros and is invited to spend three months as Researcher/Artist-in-Residence at the Ars Electronica Futurelab. In addition, the Ars Electronica Futurelab makes its resources and its staff's expertise available to support the realization of the project during the term of the residency.

As to the criteria for evaluation, of course it is a prerequisite that the concept has not been realized yet. Furthermore, the relevance of the concept to the creative community, the technical and/or artistic innovativeness, the originality and significance of the design and the feasibility of the concept are the relevant criteria in judging the entries.

On the other hand, the Prix Ars Electronica 'Media.Art.Research Award' was established in 2007 by Ars Electronica and the Ludwig Boltzmann Institute as a prize for scholarly works in art history and media studies.

The Ludwig Boltzmann Institute Media.Art.Research (<http://media.lbg.ac.at>) was established by private research institution Ludwig Boltzmann Gesellschaft in 2005 in collaboration with Ars Electronica Center Linz, Lentos Museum of Art and Linz's University of Art and Industrial Design. Its mission is the scholarly analysis, mediation, archiving and publication of works of media art and media theory, in part by making use of the extensive holdings of the Ars Electronica archive. Currently, five closely related main topics of research are being developed: archiving, indexing, analysis and contextualization, visualization, mediation. The research projects included in these strands aim at developing innovative strategies to document, describe and conserve digital artworks and works of media art. As a consequence, each research project combines competences in the fields of art history, cultural studies, media theory and computer science.

¹³³ The 'u19' category awards also two other Merchandise Prizes amounting to 500 euros each.

As far as the Media.Art.Research Award is concerned, it is meant to acknowledge excellent theoretical research carried on by art historians and media scholars in the field of media art. As the call for proposals puts it,

the great diversity and tremendous current relevance of this branch of artistic production call for theoretical and scholarly reflection on the historical significance of such artworks, on how to mediate audiences' encounters with them today, and on their future conservation. The Ludwig Boltzmann Institute Media.Art.Research has been pursuing precisely these tasks since it was founded in Linz in 2005. The theory prize competition is meant to promote an international discourse centering on the theories, methodologies and standards of media art. This includes addressing the necessity of defining terms and developing a theoretical framework as well as the pluralism of these art forms that resists any sort of final categorization. (Source: <http://media.lbg.ac.at/en/content.php?iMenuID=50>)

Theoretical works dealing with a specific topic that is selected yearly by the LBI can be submitted. In particular, university dissertations, scholarly articles, essays, books, online publications and anthologies are welcome.

The criteria for judgement focus on the contribution to current research – which also meets the Ludwig Boltzmann Institute's goal of furthering academic careers, on the quality of the content, on the scholarly relevance of the contributions and on the innovativeness of the methodological approach and of the publication format.

The Media.Art.Research Award consists of a prize money amounting to 5,000 euros; two prize-free Honorary Mentions are also acknowledged each year. An abstract from the winning work is published in the annual catalogue 'CyberArts – International Compendium Prix Ars Electronica'. The winner is also requested to publicly present his/her theoretical work during the Festival week. The winners of the Award in 2007 and 2008 have been respectively Florian Cramer and Arjen Mulder, while Geert Lovink was granted an Honorary Mention in 2007.

An extensive short-term media coverage and a long-term archiving characterize Ars Electronica's treatment of participant projects, as well. Prizes in all categories are awarded each year during the Ars Electronica Festival in September at the Ars Electronica Gala which is broadcast worldwide through ORF. Winners are also invited to present their projects at the Prix Ars Forums, a series of category-focused meetings being held during the Festival.

In addition, textual and visual materials related to all works that have won a Golden Nica, an Award of Distinction or an Honorary Mention since

the competition's inception in 1987, as well as information on the winning artists and the jury members, are collected in the Prix Ars Electronica archive. Given Ars Electronica's international scope and leading role, the Prix archive – which is publicly accessible from Ars Electronica's website – is widely recognized as one of the world's most extensive collections in the field of media art.

Furthermore, while the publicly accessible part of the archive includes material about the winning projects, another, non-public (set of) database(s) gathers the entries submitted by all participants in all categories and supports the activities of the juries of experts. Therefore, if the Prix Ars Electronica archive offers a detailed look at the most innovative works of media art over the last 30 years, the back-end databases including also non-winning entries represent an extremely rich resource in order to map the evolution of digital culture at large.

As already explained in chapter 2, this research has undertaken this latter path by investigating the whole data set including all the entry forms submitted to the 'Digital Communities' category since its launch in 2004. We are thus going to explore this category in more details.

3.2.1 The 'Digital Communities' category as a forum for socio-political emergence

The 'Digital Communities' (DC) category was established in 2004 to address the socio-political potential of digital networked systems and to acknowledge important achievements by online communities, especially in the fields of social software, ubiquitous computing, mobile communications, peer-to-peer production and net.art. It is meant to recognize innovations impacting human coexistence, bridging the geographical, economic, political or gender-based digital divide, sustaining cultural diversity and the freedom of artistic expression, enhancing accessibility of technological infrastructures.

As the call for entries asserts, 'the "Digital Communities" category is open to political, social, cultural and artistic projects, initiatives, groups, and scenes from all over the world utilizing digital technology to better society and assume social responsibility' (source: http://www.aec.at/prix_categories_en.php?cat=Digital%20Communities). It is thus a very broad category including a wide range of projects and fields of activity. Notably, some examples given by Prix Ars Electronica itself are: social software, web 2.0 applications, social networking systems, artistic collaborative projects, mobile media and ubiquitous computing, digital storytelling, gaming communities, digital neighbourhoods and digital cities, citizen journalism, eDemocracy and

eGovernance initiatives as well as emergent democracy projects, collective weblogs, filtering and reputation systems, social self-support groups, free net initiatives, wireless LAN projects, learning and knowledge communities, computer-supported collaborative processes, urban development projects, telecentres.

As a consequence of its pliability, this category is open to a vast array of projects from grassroots operations to professional solutions, from private enterprises to public institutions and 'Third Sector' initiatives. While purely commercial projects are excluded from participation, 'social' initiatives run by commercial players are conversely admitted. Therefore, not only non-profit projects have been submitted over the years, but also corporate services like, for instance, *Flickr*, *Four Docs* by Channel 4, *MySpace*, etc.

Actually, this openness is coherent with what we have already noted in the previous chapter, that is, the 'fuzziness' of the concept of online community. As a matter of fact, this competition was designed as a forum for the consideration of a broad spectrum of projects, programs, artworks, as it is shown by the definition of digital communities given by the Prix Ars Electronica itself:

Digital Communities, whether with social or artistic background, give rise to group action and interaction, engender constructive contexts and social capital, and promote social innovation as well as cultural and environmental sustainability. An essential precondition for this is making the respective relevant technologies and infrastructure more widely accessible or perhaps even developing them in the first place. But access to content and information is also a crucial topic. Digital Communities take part in efforts to achieve comprehensive human development, a key aspect of which is reconfiguring the relationship of power between citizens and political leaders, the state and its administrative bureaucracy as well as financial and commercial interests in the sense of increasing participation, strengthening the role of the civil sector, and establishing a framework for democracy and artistic work to flourish. (source: http://www.aec.at/prix_categories_en.php?cat=Digital%20Communities)

As a consequence, the Prix Ars Electronica's DC entries archive should not be seen as much as a 'statistically representative sample' of a supposedly fixed entity 'digital community', but rather as the transitory result of a set of actions aiming at negotiating the meaning of the fuzzy concept 'digital community'.

These actions are of different types and they are carried out by different actors. In particular, eight types of action can be devised:

- initial category design by Prix Ars Electronica and, in particular, by consultant Andreas Hirsch

- yearly adjustment of the call for entries according to latest developments
- yearly entry submission by project representatives
- yearly nominations by jurors and advisors
- preliminary evaluation of entries by advisors
- pre-jury selection of all entries and nominations by Andreas Hirsch and category manager Ingrid Fischer-Schreiber
- jury meetings and deliberations
- DC Forum, a debate involving the winners of the Golden Nica and of the Awards of Distinction during the Festival week.

Each one of these steps usually adds (or subtracts) some elements to the ever-changing understanding of online communities and we are thus going to describe them in more details.

3.2.1.1 The origins of the 'Digital Community' category

Looking at the birth of the 'Digital Community' category, the experiences that were considered in the initial design of the category correspond to some extent to the variegated cultures that we mentioned in chapter 1. First, the original idea of the competition initiators included clear references to the US counterculture movement and its representatives. In the 2004 presentation of the newly-born DC competition, category's designer Andreas Hirsch and Festival's artistic director Gerfried Stocker mentioned as a major change a 'grassroots optimism' that marked the 'shift in the history of the internet towards recapturing its social functions' (Hirsch and Stocker 2004). In a conversation with the author of this research, Hirsch himself identified Howard Rheingold as the person who best embodies this type of optimism: 'the fact of his longstanding work in the alternative movement (Whole Earth Review) and then with online communities (the WELL) from their very start also sheds some light on the developments and the transformations this "optimism" underwent' (Hirsch, private e-mail conversation with the Author, 21/10/2007). As a matter of fact, not only Howard Rheingold was a member of the first jury in 2004, but he also edited that year's jury statement (Rheingold 2004).

Apart from the counterculture legacy, there are other three factors that the initial designers saw as elements contributing to the creation of a new Prix category dedicated to online communities. They are late 1990s' renaissance of political activism under the label 'Global Movement for Social

Justice',¹³⁴ the popularization of the Web – especially among the youth – in those same years and the wide diffusion of collaborative patterns of organization:

among those "other" factors I see the drastic increase in usership of the Net between the 1990ies and today, a backswing away from the neoliberal ideology together with a certain renaissance of leftist positions, the anti-globalization movement, an entirely new generation of users, who grew up with computers [...] and a "culture of sharing" which reflects certain mindsets of collaboration and collective action that can be found across the world'. (Hirsch, private e-mail conversation with the Author, 21/10/2007).

As to the last point, particular emphasis was put on the notion of commons as 'shared goods that all members of a community contribute to and can make use of' (Rheingold 2004). Digital commons were conceived of as collective resources assuring the freedom to invent, share creativity, organize collective action.

Another element that was seen as relevant to the creation of the DC category is social software with its capability to overcome the traditional mass-media roles of sender and receiver.¹³⁵ According to the DC competition's initiators, thanks to the principles of peer collaboration embedded into the same software architecture, social software makes the roles of creators and users blur.

The conviction that it is from this indistinctness of roles that the transformative potential of online communities arise was already present in Prix Ars Electronica in 2003, when the Net Vision jury statement specified that 'true social software allows the creators to enter a peer relationship with their contributors so that the boundaries between them fade. This gives communities both vibrancy and longevity; it also allows these communities to have relevance in the physical world'. (Rogers 2003). According to Hirsch, 'recognizing these aspects, that Steve [Rogers] describes, was also part of the creation phase of the "Digital Communities" category and among the motives of Ars Electronica to go for it' (Hirsch, private e-mail conversation with the Author, 21/10/2007).

A further element contributing to the Prix's original idea of digital community was mobile connectivity. Quoting Rheingold (2002) and Wellman (2001), Hirsch and Stocker (2004) coined the motto 'the Internet is going

¹³⁴ See paragraph 1.1.4.

¹³⁵ Readers probably remember that this overcoming was a crucial aspect in the work of early media artists. See paragraph 1.1.3.

mobile'. With this expression, they acknowledged that new social phenomena were emerging thanks to the potentialities introduced by mobile communication devices: individuals were seen as autonomous communication nodes that could aggregate in new extemporaneous ways.

However, three years later this emphasis on mobile connectivity seemed to have been overestimated. Hirsch admitted in 2007 that 'we have been expecting the effects of ubiquitous computing, mobile communities to take off much quicker, but I would still expect them to be an important aspect of future development' (Hirsch, private e-mail conversation with the Author, 21/10/2007). As a consequence, mobile connectivity turned out to be a less central element in the following editions of the Prix.

Figure 9 – Ars Electronica artistic director Gerfried Stocker presenting the second edition of the Digital Communities competition. Author: rubra. Courtesy: Ars Electronica



3.2.1.2 From the submission process to the preliminary evaluation

After the initial category design, since 2004 each year some elements are added/subtracted to the unstable definition of online communities resulting from the Prix Ars Electronica competition. Every year, in fact, the call for submissions – by setting the criteria for evaluation – brings adjustments to the ideal profile of digital community according to latest developments. For instance, in 2007 the call put a stronger attention on art projects. DC manager Ingrid Fischer-Schreiber describes this addition as follow: 'the main

reason was that last year [2006] a lot of entries in the Net Vision category were actually DC projects. So Ars Electronica decided to give up Net Vision, include artistic projects in DC and establish a new category: Hybrid Art' (Fischer-Schreiber, private e-mail conversation with the Author, 10/07/2007).

After the call is launched, the submissions by project representatives responding to the call take place each year in winter until the beginning of March. Contemporarily, the members of the International Advisory Board (IAB) can make their own nominations for DC projects that they think should deserve to win.

Subsequently, advisors from IAB are asked to evaluate for the first time a bunch of submissions each one. At this stage, advisors write their review in the same online database that will support the jury works later on. Advisors rate the entries according to a set of given evaluation criteria and they can also suggest the request of further documentation or they can exclude some entries that they find are not actual digital communities.

The International Advisory Board is a loose¹³⁶ board nominated by the DC category management among former winners, participants and experts involved in online communities worldwide. The IAB is meant to address three main problems affecting the jury process: the need to evenly deal with linguistic differences, the process-oriented nature of online communities that makes them difficult to grasp from a snapshot, the evaluation of many culturally diverse projects that requires a certain degree of cultural proximity. In 2007 the IAB was constituted by 52 members from 19 countries. According to Hirsch, their role is crucial:

advisors add cultural knowledge to the expertise of the jury (which simply cannot cover all world cultures), putting in proper perspective also the importance and relevance of certain projects, especially from countries of the Global South which should not be judged merely by 'western' standards. For me this has also to do with the aspect of 'appropriateness in the use of technology', which means that in certain contexts a technology that might not be considered state-of-the-art in the US or Europe is quite appropriate for a given situation and allows for community and innovation to take place (Hirsch, private e-mail conversation with the Author, 21/10/2007).

¹³⁶ 'The advisors do not act as a collective ("board") in the formal sense but form a pool of experts around the world, who are asked by the category management to review certain projects especially falling into their cultural-language or other expertise. They form a collective inasmuch as they all have access to the online database of entries and nominations and can - besides the reviews they are asked for - write comments to other reviews or entries' (Hirsch, private e-mail conversation with the Author, 21/10/2007).

After the first evaluation by advisors, the pre-jury stage further excludes projects that do not match the category or a minimum standard of quality and ranks all the others by applying the criteria mentioned in the call for submission. This step has been carried on by Andreas Hirsch and Ingrid Fischer-Schreiber until 2007; it is completely transparent, since jury members can subsequently retrieve already excluded projects or re-rank them.

3.2.1.3 The jury process

The last, decisive moment that strongly contributes elements to the fluid definition of 'Digital Communities' as shaped by Prix Ars Electronica is of course the jury process, of which the final deliberation is only the 'crystallized' output. While the IAB contributes as many variegated cultural elements as possible, the jury works are requested to neatly balance multiple different criteria, from those introduced with the call for entries to those pertaining to the jurors' background, to those introduced by the landscape of actual submissions. The negotiation of different criteria taking place during the jury process is clearly described by Hirsch:

I see the balance of the different criteria shifting from year to year as the effect of developments in the world of digital communities, which are then reflected in the setup of the jury, the experiences the individual jurors bring to the deliberations and the dynamics in the group during the deliberations. All this has then to be seen against the backdrop of the projects submitted or nominated in a given year. Those four factors together [...] form a matrix in which the criteria (as defined in the call) are freshly re-arranged, modified and expanded every year. (Hirsch, private e-mail conversation with the Author, 21/10/2007)

According to Hirsch, the matrix of criteria elaborated during the jury works becomes visible in the annual jury statement that explains the reasons for the Golden Nica, the Awards of Distinctions and the Honorary Mentions. Without the pretension to be exhaustive, we are thus going to briefly compare the annual jury statements of the DC category from its first year of existence to 2007.

In 2004 the jury was composed by Howard Rheingold (US), Oliviero Toscani (IT), Joichi Ito (US/JP), Shanthi Kalathil (US), Andreas Hirsch (AT), Michael Jensen (ZA), Dorothy Okello (UG), Denise Carter (UK), Ama Dadson (GH), Cory Doctorow (CA/UK), Jane Metcalfe (US). The final jury statement was edited by Howard Rheingold, as already mentioned. *Wikipedia* and *The World Starts With Me* won the Golden Nicas, while *smart X tension/Tonga.Online*, *dol2day – democracy online today*, *Krebs-Kompass*

(*The Cancer Compass*) and *Open-Clothes* received an Award of Distinction each.¹³⁷

Since '2004 was somehow the reality-check of what we had conceptualized' (Hirsch, private e-mail conversation with the Author, 21/10/2007), that first year's statement declared a very broad goal: 'to represent the breadth and depth of today's online communities' (Rheingold 2004). As a consequence, great attention was put on devising a definition for online communities. The statement first mentions Wellman (2001)'s definition of online communities as 'networks of interpersonal ties that provide sociability, support, information, a sense of belonging and social identity'. However, the jury elaborated its own definition of digital community as 'a web of relationships, sustained over time, among people who care about each other [...] enabled, enhanced or extended by digital tools' (Rheingold 2004). Furthermore, the definition stressed cooperation as a central element: 'Digital Communities are simply the latest example of the human capacity to invent new technologies of cooperation' (Rheingold 2004).

Notably, the 2004 jury considered the following criteria in its evaluation: creation of public goods, technical and social innovation, civic value, humanitarian benefit, economic opportunity, grassroots power, enabling technology, bridges across Digital Divide, ability to act as best practices, power of simplicity over flashy displays.

Conversely, in 2005 the criteria were more restrictive. That year's jury was constituted by Joichi Ito (US/JP), Andreas Hirsch (AT), Jane Metcalfe (US), Danah Boyd (US), Hong Feng (CA), Anita Gurumurthy (IN). The Golden Nica went to *Akshaya*, while the *Free Software Foundation* and *Teletstreet/NewGlobalVision* received an Award of Distinction.

The jury statement – that was edited by Ito – argued that the fact of being a vibrant community, for instance a popular weblog, was not sufficient to deserve a prize. 'Overriding social or political objectives' were a necessary pre-condition (Ito 2005). Accordingly, the other two criteria for evaluation looked at whether the submitted projects represented a technological leap forward for digital communities and at whether they represented a model for the future development of digital communities.

As a matter of fact, the 2005 statement showed a strong commitment of the jury to reward projects whose core mission was about maintaining the

¹³⁷ It should be noticed that only in 2004 the prizes were doubled: two Golden Nicas and four Awards of Distinctions were awarded. A detailed description of the winning projects is provided in paragraph 4.3.

Internet open. Openness and free software were the most important principles of that year: 'what everyone on the jury understood to be the most significant principle for the future growth of digital communities was openness, and as a subset of that, free software. Thus, there are many projects represented among our honorees because of their commitment to openness' (Ito 2005).

This turn was underpinned by that year's motto: 'rough consensus and running code'. According to this hackerish dictum, if a person or group can demonstrate that the code they developed works and they gain rough consensus by the community, that protocol becomes widely adopted.¹³⁸ According to the jury statement, this practical attitude towards innovation lies at the very core of the Internet and characterizes it as a bottom-up communication artefacts that fosters democracy:

this ability for anyone to innovate without permission, without a license and without a significant capital investment is what makes the Internet a bottom-up communication network, built by the people for the people. The basic nature of an open society and democracy are built into the basic nature of the Internet. The idea of rough consensus and running code translates into the good civic principles of inclusion and bottom-up consensus. (Ito 2005)

According to this understanding of the Internet as the cornerstone of democracy and open society, digital communities were seen as the key actors of 21st century open Internet: 'digital communities, with their bottom-up process of innovation, deliberation and sharing will be the developers and users of this new open network' (Ito 2005).

In 2006 jury members were Andreas Hirsch (AT), Peter Kuthan (AT), Steven Clift (US), Lara Srivastava (CA). Hirsch himself was in charge of editing the jury statement. *canal*ACCESSIBLE* was awarded the Golden Nica and *Codecheck* and *Proyecto Cyberela – Radio Telecentros* won the Awards of Distinction.

That year's jury statement basically confirmed all the elements that were relevant to the previous deliberations and stressed in particular three aspects of what constituted in the jury's perspective a 'digital community': originality and innovation, sustainability, ownership of the project. The jury works looked for both product-oriented and process-oriented innovation:

¹³⁸ The expression 'rough consensus' was first used by the Internet Engineering Task Force (IETF) to describe its procedures for working groups [WG]. See <http://tools.ietf.org/html/rfc2418>, accessed 31 October 2008.

innovation was meant 'in terms of new emerging tools or smart (re)combinations of existing ones as well as in terms of social innovation' (Hirsch 2006). As to the sustainability of the communities on a medium/long-term period, the sharing of knowledge, the collective creation of commons and open source software were conceived of as key resources helping the realistic sustainability of projects.

As to the third criterion, according to the jury statement 'the ownership of the project, its organisational structure and the values adhered to (or created) should be based in the community itself and not be an object of easy corporate buyout' (Hirsch 2006). This was a requirement that had not overtly appeared before. According to Hirsch, this condition was present since the beginning in 2004, but grew in importance with the buyout of several independent projects by venture capitalists:

it was definitely the returning and rising economic pressure on many projects that, in the course of the recovering of the markets after the burst of the bubble, made jurors - as well as the public to a certain degree - more sensitive towards questions of ownership. It made us look more closely into the background of projects and also try to judge their tendency and willingness to stay autonomous or to converge with market interests and become the object of a buyout. We did not demonize business models including revenue models of projects per se, but became I think more and more wary towards those who look for quick economic success instead of sustainable models for their communities to exist in a world strongly defined by markets. (Hirsch, private e-mail conversation with the Author, 21/10/2007)

In 2007 the jury was composed by Andreas Hirsch (AT), André Lemos (BR), Gunalan Nadarajan (SG), Kathy Rae-Huffman (UK), Steve Rogers (UK). Rogers was also in charge of editing the jury statement. While the Golden Nica went to *Overmundo*, the *Electronic Frontier Foundation* and *dotSUB* won the two Awards of Distinctions.

That edition of the Prix Ars Electronica marked the inclusion of the 'Net Vision' category – devoted to net and software art – into the 'Digital Communities' category. As a consequence, the call for entries brought in a redefinition of the DC category with the art projects included in the scope. Of course, the jury works changed consequently.

According to the jury statement, that year's basic criteria for evaluation were vibrancy and vitality, originality and Net specificity. With 'vibrancy and vitality' the jury essentially addressed the question of scale and engagement. Scale was given a relativist definition as 'the number of people engaged compared with the potential and aim' (Rogers 2007), while engagement referred to means of self-governing. Projects open to organizational

contributions were preferred: 'we were more inclined to favour projects that clearly enabled the contributors to give direction to the work as a whole than those that were guided by a central core' (Rogers 2007).

Second, 2006's focus on the independence of online communities from market logics was re-enacted in 2007 as an attention to the originality of the projects:

in a field that is becoming ever larger and in a world where there are very many commercial digital networks and communities, we were looking for those that were truly original. We were looking for those that existed due to the passion and energy of their contributors rather than those with a clear commercial potential. (Rogers 2007)

The third criterion – network specificity – was more strictly related to the heritage of the 'Net Vision' category. According to the jury statement, while many communities use the Net simply as a communication tool, deserving digital communities are those that 'constitute artistic confrontations with the technical and cultural characteristics of the Internet and go beyond simply using the Web as a platform for the dissemination of content. Thus, the Internet's system-immanent qualities should serve as the basis of the artistic approach taken by a submitted work' (source: http://www.aec.at/prix_categories_en.php?cat=Digital%20Communities).

In the next chapter we are going to see how this distinction between ICT conceived of as mere tools or as an actor in its own right corresponds to ANT's distinction between 'intermediaries' and 'mediators' and can be taken as a major criterion of evaluation not only for artistic projects, but also for techno-social assemblages at large. After the description of how the Prix Ars Electronica's DC category negotiates the meaning of the fuzzy concept 'digital community', it is thus time to look at how social actors themselves put together the elements so far mentioned.

Chapter 4

Results and Discussion

4.1 The Remains of the Community

In this paragraph we are going to discuss the results of Task 1: the analysis on prior concept 'virtual community' conducted through Leximancer's Concept Profiling tools. This first stage of analysis aims at exploring the elements associated with online community in the entry forms submitted to Prix Ars Electronica's Digital Communities competition. If at this stage we have not yet got rid of the concept 'online community' as announced in paragraph 2.1, it is exactly because we want to ask social actors themselves what they mean with this expression when they participate in a competition for 'digital communities'.

As we saw in details in paragraph 2.5, since at this stage we are interested in discovering the network of associated concepts around 'online communities', we used the profiling function to extract concepts that are specific to this issue, rather than all those occurring in the entire data set. Concept Profiling aims, in fact, at discovering during learning new concepts which are relevant to the concept defined in advance. More technically, these new concepts are seeded from words that are relevant to the prior concept. These words make up a thesaurus.

4.1.1 An early definition for online community

Before learning extra concepts to be included in the map through the Concept Profiling technique, Leximancer has extracted a definition for 'online community'.¹³⁹ Since in Leximancer a concept is defined as a cluster of terms co-occurring together in the data set,¹⁴⁰ the definition of a concept consists of a thesaurus of terms that display a high *relevancy value*: they tend to appear

¹³⁹ As recalled in Table 3 in paragraph 2.5, to start the search we manually defined online community by merging the terms 'community', 'communities', 'online', 'virtual'.

¹⁴⁰ See Box 2 in paragraph 2.4.2.

frequently in blocks of text where the main concept appear and to be absent elsewhere. The thesaurus for the concept 'online community' includes the following terms (in decreasing order of relevance):¹⁴¹

community, online, virtual, communities, [[takingitglobal]], combines, [[east_kilbride], self-help, supportive, [[ubuntu]], telecentre, [[socrates]], librarians, aphasics, [[seniornet]], nonprofit, [[social_edge]], [[namma_dhwani]], nsw, orientation, communitybuilders, disenfranchised, [[icohere]], [[bawb]], -operation, [[tapped_in]], [[catcomm]], [[i-neighbors]], neighboring, qualitative, [[netco]], [[codetree]], gatherings, [[aboriginal]], aspirations, [[ngv]], place-base, [[war_zone]], [[budikote]], nurturing, customised, [[global_south]], [[modernist]], recognizes, complain, programmatic, delays, publicize, wisdom, astonishing, cares, king, promotions, instructional, [[new_town]], [[canonical]], [[minnesota]], war-affected, [[content_village]], [[fabasoft_egov-forms]], reservation, folksonomies, hometown, marginalised, [[commkit]], grrrl, zine, [[wbt]], first-hand, [[mongrel]], deepen, [[arrente]], netznetz, investments, zines, affords, definitive, argue, descent, signifiers, legacies, courageous, [[nkca]], [[mol]], guesthouse, mediatheque, [[virtual]], [[official_proceedings_online]], [[econtent]], harnessed, impoverished, statewide, [[transmission]]

Apart from the first four items corresponding to the original definition, what strikes the observer at first sight is the high percentage of proper names compared to other words (39,3%). Proper names mainly refer to well-known online assemblages and FLOSS development communities (*Transmission.cc*, *Ubuntu*, *Catcomm*, *Taking it Global*, *NGV*, etc.), while a limited number refers to geographical names (Minnesota, 'Global South').

A deeper observation would also notice some terms related to a potential 'grassroots empowerment' theme: 'self-help', 'supportive', 'disenfranchised', 'nonprofit', 'marginalised', 'telecentre', 'global_south', 'cares', 'communitybuilders', 'impoverished', 'nurturing'. There appear also some Web 2.0-related items ('folksonomies', 'customised', 'investments'), as well as some references to local, territorially bounded communities ('neighboring', 'i-neighbors', 'place-based').

The words appearing in this thesaurus are the seed words from which the new concepts will be learnt. To obtain more significant results and verify these hypotheses we therefore need to take into consideration the additional terms discovered and the concept map.

¹⁴¹ Of course we cannot here recall the whole thesaurus, but only the first, more relevant terms with a relevancy value higher than 5.3. Items enclosed in brackets are identified as proper names due to the amount of instances they are capitalized.

4.1.2 Looking at the map

Leximancer's conceptual map provides four main sources of information about the content of documents:

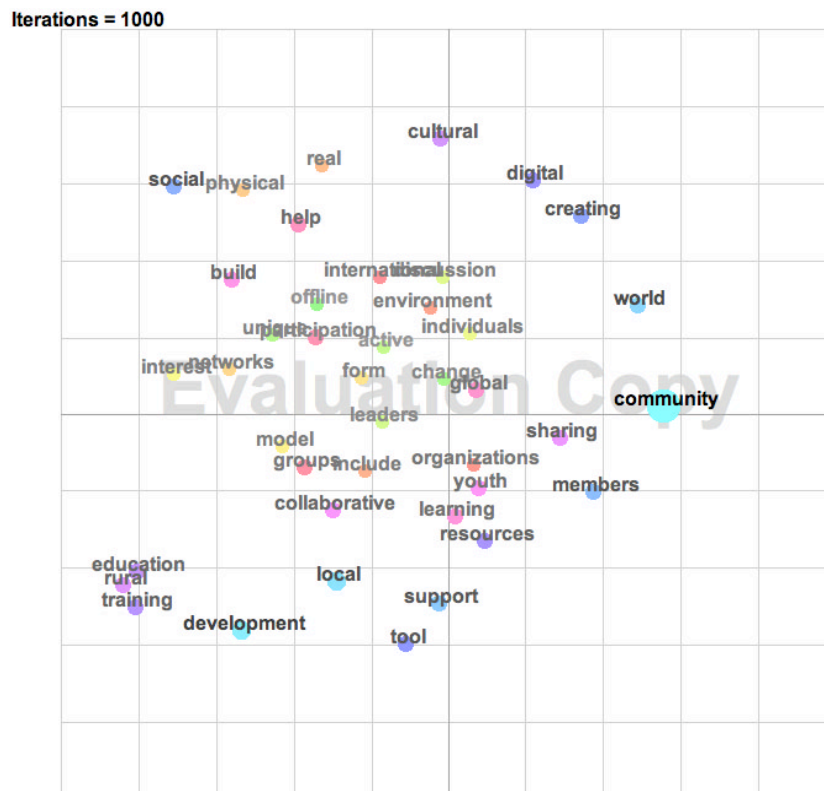
- 1 – The main concepts contained within the text and their relative importance;
- 2 – The strengths of links between concepts (how often they co-occur);
- 3 – The centrality of each concept;
- 4 – The similarities in the context in which they occur.

These sources of information provide a metric for statistically comparing different documents or simply providing a bird's eye view of a large amount of material.

On the map, the strength of a concept's label relates to its relative frequency in the text, varying from black (highly frequent) to light grey (less frequent). The size of the concept point indicates its connectedness. Nearness in the map indicates that two concepts appear in similar conceptual contexts. The colour indicates thematic group.

The concept map below contains the semantic profile for 'online community' as extracted from the Ars Electronica's data set.

Figure 10 – Leximancer's map for Task 1. Bird's eye



Taking a bird's eye view, there are some concepts that tend to remain close to each other at every resetting and re-learning and to form clusters:¹⁴²

- 'education', 'training', 'rural', 'development';
- 'community', 'members';
- 'social', 'physical', 'real', 'build', 'help';
- 'learning', 'resources';
- 'individuals', 'change';
- 'collaborative', 'include', 'model', 'groups';
- 'youth', 'organizations'.

On the contrary, other concepts are unstable: they travel across the map from time to time and do not establish permanent ties with any other concept. 'Tool', 'creating', 'support', 'cultural', 'world', 'network' and 'sharing' are instances of such loose concepts.

To understand the meaning of these contrasting behaviours it is necessary to take into consideration what nearness in the map represents in Leximancer. The map is constructed by initially placing the concepts randomly on the grid. Each concept exerts a pull on each other concept with a strength related to their co-occurrence value: the more frequently two concepts co-occur, the stronger will be the force of attraction (the shorter the spring that connects them), forcing frequently co-occurring concepts to be closer on the final map. However, because there are many forces of attraction acting on each concept, it is impossible to create a map in which every concept is at the expected distance away from every other concept. Rather, concepts with similar attractions to all other concepts become clustered together. That is, concepts like 'education', 'training', 'rural', 'development' that appear in similar regions in the map also appear in similar contexts in the data set, i.e. they co-occur with the other concepts to a similar degree. On the contrary, loose concepts like 'tool', 'network', 'support', 'cultural', 'sharing', although being quite relevant for the main concept profiled (their labels tend to black), exert different degrees of attraction on the other concepts. That is, they frequently co-occur with the prior concept 'online community', but do not so much appear in similar contexts with other concepts.

¹⁴² We have already recall how – being stochastic – the map needs to be reset and re-learned several times before being stabilized. See paragraph 2.5.

As a consequence, since the concepts that constitute them appear in similar contexts in the data set, the clusters above mentioned may be conceived of as recurring themes and might be renamed¹⁴³ as:

- rural/local development through education;
- community's organizational aspects;
- contribute of the digital realm to the physical one;
- knowledge resources;
- individuals as agents of change;
- models of inclusion through collaboration;
- youth organizations.

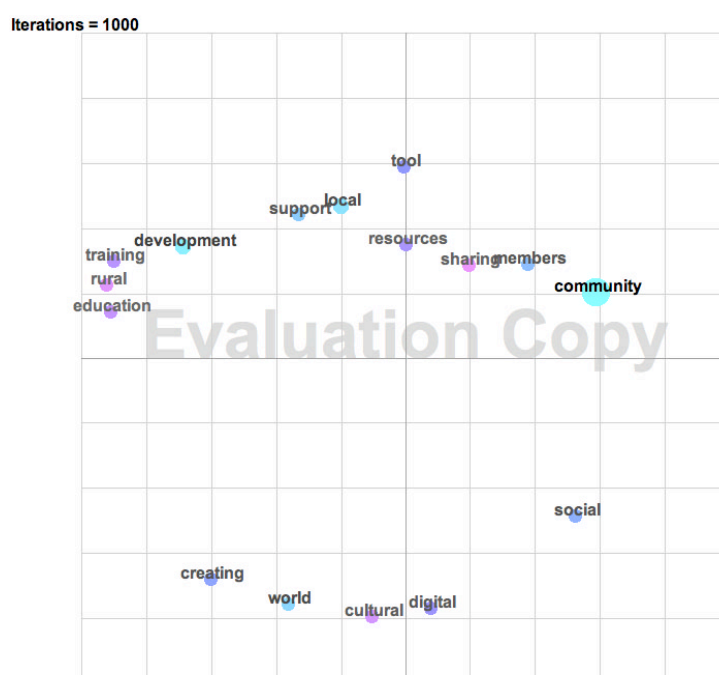
Of course, these themes are not the only ones, but should rather be added to the list of those represented by loose concepts.

Coming to concept frequency, since the prior concept is 'online community', the frequency of the concepts discovered through profiling is relative to this main issue, which of course in the map appears as the brightest and whose point is the biggest. The Top Ten concepts that most frequently occur in the whole data set when 'online community' is the only concept profiled are (in decreasing order) 'community', 'development', 'world', 'local', 'social', 'creating', 'members', 'support', 'digital', 'tool', as can be inferred more clearly by the Ranked Concept List (see Table 9 in Appendix).

With slight differences in the order, these concepts are also the most central ones. The centrality of a concept is defined in terms of the number of times a concept co-occurs with other defined concepts. That is, a concept will be central if it is frequent (as it is thus more likely to co-occur with other concepts) and appears in contexts surrounded by the other concepts that have been extracted. Here, the most central concept is, of course, 'community', followed in decreasing order by 'development', 'local', 'world', 'support', 'members', 'social', 'creating', 'tool', 'digital'.

¹⁴³ Far from being arbitrary, the renaming proceeds from the browsing of some textual extracts in which the concepts clustered together co-occur. This is one of the cases in which Leximancer's browsing function facilitates the joint conduction of qualitative analysis with quantitative analysis.

Figure 11 – Task 1: more central concepts



The fact that all the ten most frequent concepts are also the ten most central ones is not to be taken for granted. It may happen that, albeit being frequent, some concepts appear in relatively marginal semantic contexts. In our case, the fact that frequency and centrality lists corresponds means that the most frequent concepts also appear in similar contexts. It is probable that this relative restriction of the semantic field is due to the centripetal attraction operated by the profiled concept.

Besides the map in Figure 10, the Ranked Concept List reporting all the concepts related to online community is viewable in Appendix (see Table 9). Some remarkable results can be found when taking into account foundational concepts¹⁴⁴ that are conversely absent from the List/map. While in the map there is a clear mention to the local community theme,¹⁴⁵ to the hacker culture of ‘collaboration’ and ‘sharing’, to the focus on ‘individuals’ as agents of ‘change’ and to the distinction between real world and virtual life¹⁴⁶, among the 60 concepts extracted from the data set there is no reference to biological metaphors, nor to other cybernetic themes like, for instance, ‘decentralization’. Another semantic domain that appears as absent is the one related to the Web 2.0: if some references appeared in the initial thesaurus, they have disappeared in the final concept list. Even more

¹⁴⁴ See the elements of cyberculture and its derivatives that were discussed in paragraphs 1.1 and 1.2

¹⁴⁵ What we called the ‘local development through education’ theme.

¹⁴⁶ What we called the ‘contribute of the digital realm to the physical one’ theme.

surprising is the absence of any explicit reference to technology: apart from a generic 'digital', that mostly appears as an adjective of community, the only reference to technological artefacts, the Web or software can be found under the label 'tool'.¹⁴⁷

It should be recalled that an absence at this level of analysis does not mean that these topics are alien to the data set as a whole, but that they are not included among the concepts associated with 'online community'.¹⁴⁸ It is exactly because these results number only the elements associated with 'online community' that we can follow the disappearance of some elements proper to an older association ('online community' in early cyberculture) from a nominally similar one ('online community' in the Ars Electronica data set). These element shifts reveal us which paths have been abandoned in our data set with respect to the cyberculture of the origins. Conversely, if we investigate which new combinations are explored and which new elements have entered the online community, among the recurrent themes above there is only one new element, namely the reference to 'youth organizations'.

4.1.2.1 Relationships between Concepts

Apart from measuring the frequency of occurrence of the main extracted concepts (Thematic Analysis), another important source of information consists in measuring how often concepts occur close together within the text (Relational Analysis). Relation Analysis can also be very helpful in addressing our main epistemological concern,¹⁴⁹ since it is based on the rationale according to which the categories present in a document set can be inferred from the co-variation amongst the high-frequency words in the text.

In our data set, the concept that most frequently co-occurs with 'online community' is 'development', followed by 'local', 'world', 'members', 'digital', 'support', 'social', 'creating', 'tool', 'resources', etc.¹⁵⁰ In the map, the co-occurrence pattern for 'online community' is also revealed by the brightness of the links, that relates to how often the two connected concepts co-occur closely within the text.

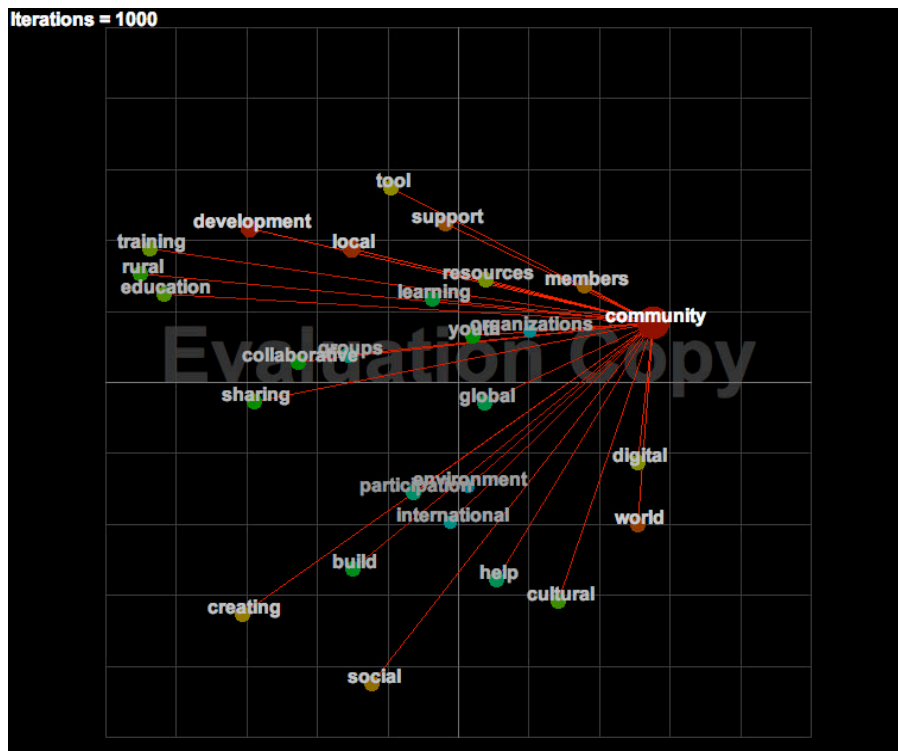
¹⁴⁷ Actually, 'tool' is very relevant and, when browsing the single instances, it might be said that it works as an umbrella term for all kind of technological objects.

¹⁴⁸ As we shall see in the next paragraph, in fact, some of these absences will be filled up when we abandon the focus on online community and analyse all the concepts emerging from the data set.

¹⁴⁹ See paragraph 2.4, third constraint.

¹⁵⁰ See Table 10 in Appendix.

Figure 12 – Co-occurrence pattern for the concept 'online community'



Apart from the co-occurrence pattern as a whole, the most interesting results appear when considering the co-occurrence between 'online community' and couples of related concepts. For instance, as far as Wellman's argument about communities made up of networks rather than groups is concerned,¹⁵¹ we can notice that 'online community' co-occurs more frequently with the term 'groups' (2.4% of instances wherein 'online community' occurs) than with the term 'networks' (1.9%). Furthermore, in the map 'groups' corresponds not only to a single concept, but also to a thematic cluster including other concepts like 'collaborative', 'include', 'model', while 'networks' appears as a loose concept which does not occur in similar contexts with other concepts (see above).

In order to verify a hypothetical counter-argument to Wellman's one, we thus conducted a further co-occurrence analysis using a textual search software which allows the use of Boolean operators, *InfoRapid Search and Replace*.¹⁵² The results are discussed in the following paragraph.

¹⁵¹ See paragraph 1.3.1.

¹⁵² See paragraph 2.5.

4.1.3 Boolean searches. Groups, networks or both?

As explained in paragraph 2.5, the last part of Task 1 aims at testing Wellman's argument. The need for this further test has arisen after analysing the co-occurrence patterns for 'online community', as discussed above. The co-occurrence analysis run by means of Leximancer, in fact, revealed that 'online community' co-occurs more frequently with the term 'groups' than with the term 'networks'. We thus decided to investigate this unexpected result in depth by further searching the co-occurrence of the exact terms 'online community', 'group', 'network' using a text search free software which allows the use of Boolean operators.

As a matter of fact, all the three hypotheses derived from Wellman's argument have been falsified. By running a Boolean search across the digital communities entry forms, we have found not only that 'group' and 'network' are not mutually exclusive, but also that 'digital community' occurs more often with 'group' than with 'network'. Let's see the results for the three hypotheses in detail.¹⁵³

First hypothesis: $A < B$. Actually, it has turned out that $A > B$. As a matter of fact, A (intersection of 'DIGCOM' and 'group' and not 'network') = 401 occurrences, while B (intersection of 'DIGCOM' and 'network' and not 'group') = 208 occurrences. In less formal terms, in the data set there are more cases where 'group' and 'digital community' co-occur without 'network' than cases where 'network' and 'digital community' co-occur without 'group'. Therefore, the first hypothesis has been falsified.

Second hypothesis: $C = 0$. On the contrary, the Boolean search found that C (intersection of 'group' and 'network') = 3117 occurrences. In other words, in 3117 cases 'group' and 'network' co-occur together. Again, the hypothesis derived from Wellman's argument has been falsified.

Third hypothesis: $D = 0$. The result of the second hypothesis has found further confirmation when verifying the third hypothesis. The Boolean search, in fact, found that D (intersection of 'group' and 'network' and 'DIGCOM') = 2144 occurrences. In less formal terms, we found 2144 cases where 'group', 'network' and 'online community' co-occur together.

Summing up, by running a Boolean search across Ars Electronica's archive on digital communities, we found more cases where 'group' and 'online community' co-occur than cases where 'network' and 'online community' do. Furthermore, we found not only that 'group' and 'network' are not mutually

¹⁵³ The complete results of all the searches are reported in Appendix, Tables 11 – 14.

exclusive, but also that they occur very often together in the accounts elaborated by social actors directly involved in online assemblages.

From these results three considerations may be drawn. First, loose networks are not the exclusive form of sociability when it comes to communal ties online. Rather, they co-exist with other models of sociability that social actors label as 'groups'. It is likely that different models of sociability fulfil different functions, even if this consideration remains at the level of hypothesis and does not follow from the results.

Second, not always a linear evolution model is the best tool when trying to explain techno-social change. Rather than a situation where dominant forms of sociability progressively replace older, non-dominant ones, the results draw a scenario where co-existence has the better of exclusive dichotomies. The relationship between information technology and social forms is definitely much more variegated than one could expect and social change cannot be linearly inferred from technological evolution. As Internet and mobile technologies have not killed television yet, similarly there are many probabilities that loose networks won't eradicate bounded groups in the next years. For social scientists, avoiding sharp dichotomies that shrink the abundance of the social into predefined tracks might probably turn out to be more laborious, but it is well-known that approximation has always been enemy to science.

Third, the results corroborate the appropriateness of the ANT's method that refrains from adopting any established type of aggregate as an incontrovertible starting point. Since 'network' and 'group' are not even seen as mutually exclusive by social actors themselves, it is difficult to figure out how one of the two should be a better starting point for inquiry. From the comparison of well acquainted sociological positions with rich and multi-faceted accounts the need to level up social actors' own accounts to academic arguments emerges. The results should thus not be read as a further demonstration of the inability of social actors to understand the macro-structural trends at work in the world they inhabit. Conversely, these results suggest the need to jointly investigate macro-structural trends and perception, *episteme* and *doxa*. As Latour has argued, 'sociologists are on par with those they study, doing exactly the same job and participating in the same tasks of tracing social bonds, albeit with different instruments and for different professional callings' (Latour 2005, 34).

4.2 From Concepts to Narratives

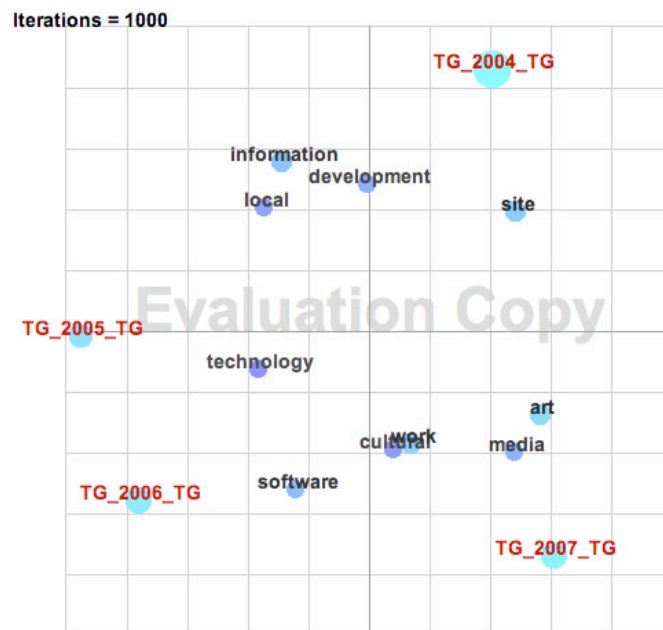
This paragraph discusses the results for Task 2 that we have obtained as described in paragraph 2.6. The goal of Task 2 is to identify the relevant themes emerging from the data set and to trace the possible variations in the conceptual map by year of submission.

From this starting point, in the second part of the paragraph (4.2.2) we have been qualitatively analysing the main themes in more depth. By comparing the relative strengths of concepts co-occurring with the most relevant ones, we came to identify some contrasting narratives related to the themes that had been extracted in paragraph 4.2.1.

4.2.1 Digging deep into clusters

In the whole data collection the ten most frequently occurring concepts are ‘site’, ‘art’, ‘work’, ‘information’, ‘software’, ‘media’, ‘development’, ‘local’, ‘system’, ‘mobile’.¹⁵⁴ Slightly differently, the ten most central concepts are ‘site’, ‘art’, ‘work’, ‘information’, ‘software’, ‘media’, ‘development’, ‘local’, ‘cultural’, ‘technology’.

Figure 13 – Task 2. More central concepts



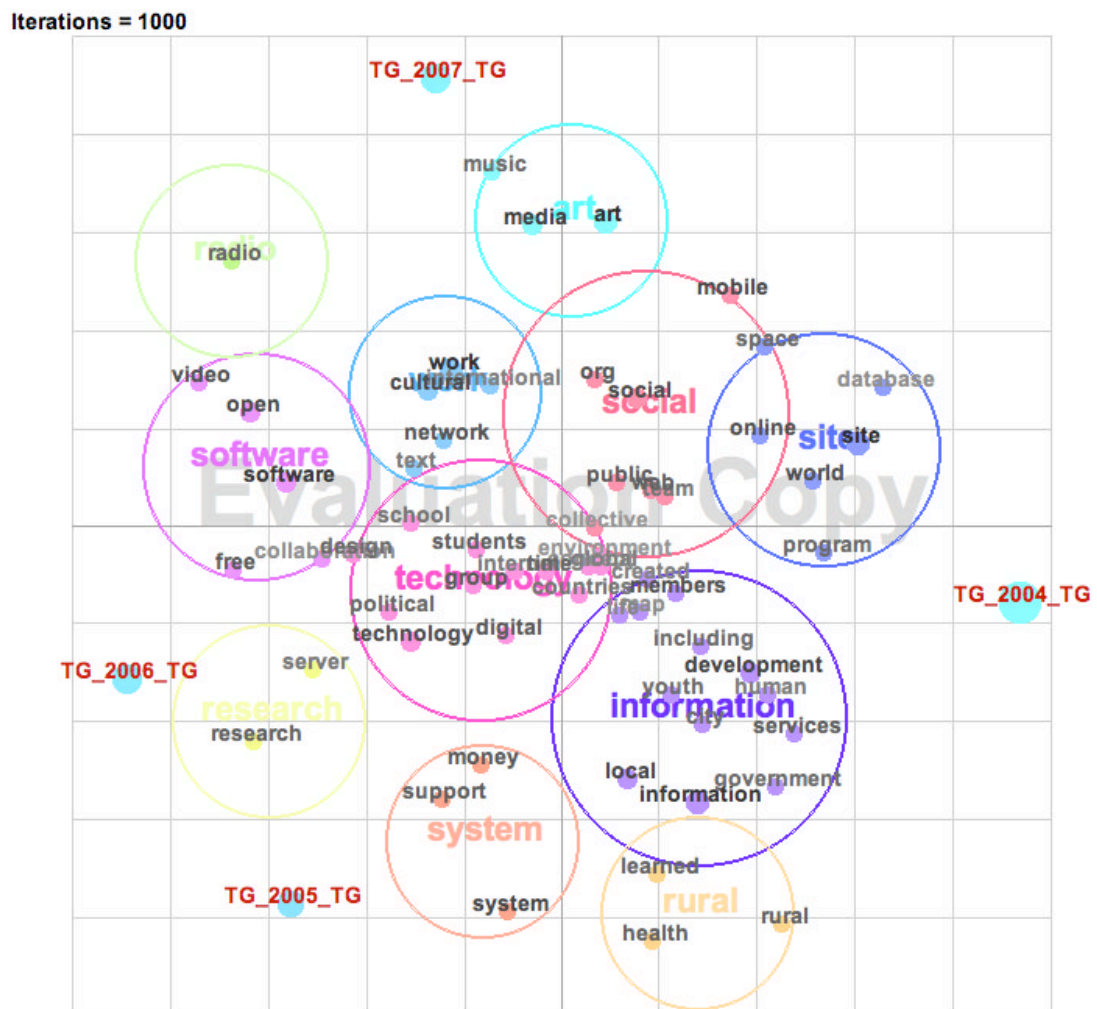
The difference between the frequency and centrality lists means that while ‘system’ and ‘mobile’ are more frequent, ‘cultural’ and ‘technology’ – among the most frequent terms themselves – appear in contexts surrounded

¹⁵⁴ One could recall that ‘local’ and ‘development’ were also in the Top Ten concept list in Task 1. All the concepts extracted from the data set are shown in Figure 14 as well as in Table 15 in Appendix.

by the other concepts that Leximancer has extracted more frequently than 'system' and 'mobile', which are therefore more peripheral.

Apart from the top lists, however, the most remarkable characteristic of the conceptual map extracted is its stability. At every resetting, concepts aggregate in stable clusters and each cluster occupies the same portion of the map. The only variation is a rotation around the centre of the map that does not affect the relative distance between concept (see Figure 4 in paragraph 2.6). For this reason – and differently from Task 1 where loose concepts used to change location at every resetting – it is possible to identify recurrent clusters of concepts (i.e. themes) emerging from the data collection.

Figure 14 – Leximancer’s map for Task 2. Bird’s eye



In the map, concepts are clustered in thematic circles that form around highly connected concepts: *information*, *(web)site*, *social*, *art*, *work*, *software*, *radio*, *research*, *technology*, *system* and *rural* correspond to as many themes.

First of all, one could notice that some of the technology-related concepts that were absent in Task 1 are here crucial. This is a significant result in itself: it tells the observer that – when taking online community as key concept – technological objects are conceived of as ‘tools’¹⁵⁵ to upkeep groups, while they resume their role as ‘technology’, ‘software’, ‘website’ when community is set apart.

Second and strictly related, the topic ‘community’ is unexpectedly absent from the concept list. Probably this is due to the fact that – being the competition category centred on communities – a concept ‘community’ would have been too general and fuzzy to meet the lowered Learning Threshold we set.¹⁵⁶ ‘Community’ thus has probably been divided into more specific concepts.

Third, if we conversely consider the topics obtained in Task 1 and related to ‘online community’, some of them are not present among the concepts extracted in Task 2. Notably, in the current concept list there is no reference to ‘individuals’ as agents of change, nor to the classical dichotomy between ‘physical’ and virtual realms. As we have seen in chapter 1, individualism and a sharp separation between the brick-and-mortar world and cyberspace were among the elements that the digital communitarians inherited from early cyberculture. It is thus very significant¹⁵⁷ that these two *lait motifs* appear in a data set only when online community is taken as a key concept and not in the whole semantic characterization of the data set. It might be said that the focus on the individual and the separation between physical and virtual domains are part of the discourse *on* digital communities, but they are not part of the practices *of* online assemblages.¹⁵⁸

¹⁵⁵ One would remember that in Task 1 ‘tool’ was the only concept referring to technological objects.

¹⁵⁶ See paragraph 2.6.

¹⁵⁷ It should be clear by now that our aim is not to give any *explanation* of this results, but only to *describe* the variations in the elements that constitute one or more aggregates. As we argued in detail in chapter 2, in fact, this research’s approach is not about providing a further theory about why social actors act in a certain way, but about tracing the minute shifts in meaning left behind by activities of group formation (and representation). As a consequence, we shall not further define the term ‘significant’. Rather, its definition as ‘having a particular meaning’ (Oxford Dictionary) is the most precise we could ever ask: the meaning is given exactly by the shifts in the elements that move from one association into another one.

¹⁵⁸ Greimas would simplify this distinction by respectively using the terms ‘Enunciate’ (or Discourse) and ‘Enunciation’. While Enunciation is an act, the Enunciate is the state resulting from that act, the content of an act of speech (Greimas and Courtés 1979, 123-6, *Italian edition*).

Coming to consider the macro-themes extracted, they form around a highly connected concept, from which they borrow the label, and aggregate less connected ones. For instance, the theme *Art* borrows the label from the highly connected concept 'art' and aggregates also the concepts 'media' and 'music'. The relationship between the main concept and the other ones that aggregate around it is not necessarily based on co-occurrence, but rather on contextual similarity: they appear in similar contexts in the data set.

In 4.2.2 we shall analyse the co-occurrence patterns for some highly connected concepts. Here, we want only to list the themes, the relationships (or lack of) among the elements that constitute them and the temporal trend followed by the main concepts giving the name to the aggregation.

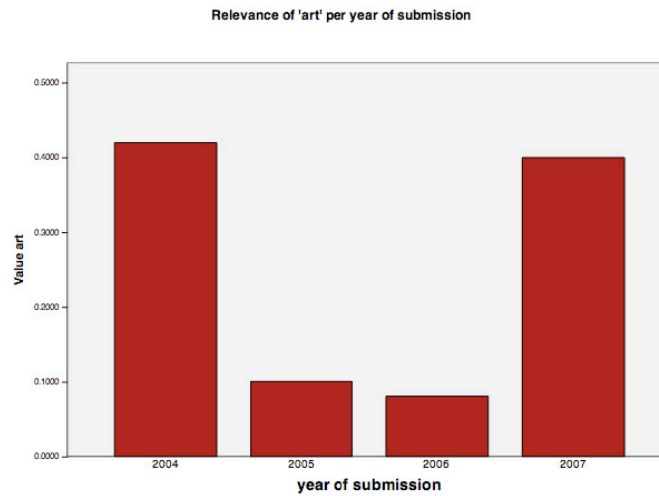
As already seen, the theme *Art* aggregates the concepts 'art', 'media', 'music'. That is, 'art', 'media' and 'music' appear in similar conceptual contexts. 'Media' and 'art' also co-occur often together,¹⁵⁹ while 'art' and 'music' only sometimes. Conversely, 'media' and 'music' never occur together. Looking at the temporal trend for the concept 'art', we can see that in 2005 and 2006 the entry forms dealt less with 'art' than in 2004 and 2007, relatively to the total amount of texts from each year.¹⁶⁰

¹⁵⁹ This information is provided both by the brightness of the link between the two concepts in the map and by the co-occurrence list of related entities for 'art'. As a matter of fact, 'media' and 'art' co-occur together very often in the expression 'media art'.

¹⁶⁰ The result for 2007 might be explained by the new interest the *Prix* put on artistic projects in that year's call for projects. See paragraph 3.2.1. However, there cannot be incontrovertible *objective* evidence for such an explanation: it would not be possible to have the 'scientific proof' of the fact that the focus on art given by the call *caused* the focus on art in the entry forms. All that we have is the recurrence of the same element (art) in two accounts: the call for projects and the entry forms. This is a perfect example of the reason why in this research we are refraining from providing explanations and we are only producing descriptions: while explanations can only remain on a hypothetical level, descriptions are objective insofar they trace the movements of one element from one aggregation into another one.

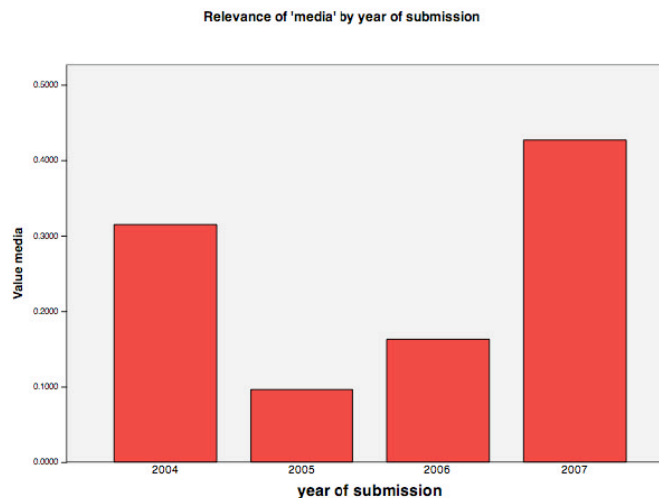
4 Results and Discussion

Figure 15 – Temporal trend for 'art'



A similar trend is shown also by the concept 'media': after a strong relevance in 2004, it decreased in importance until 2007, when it re-gained weight.

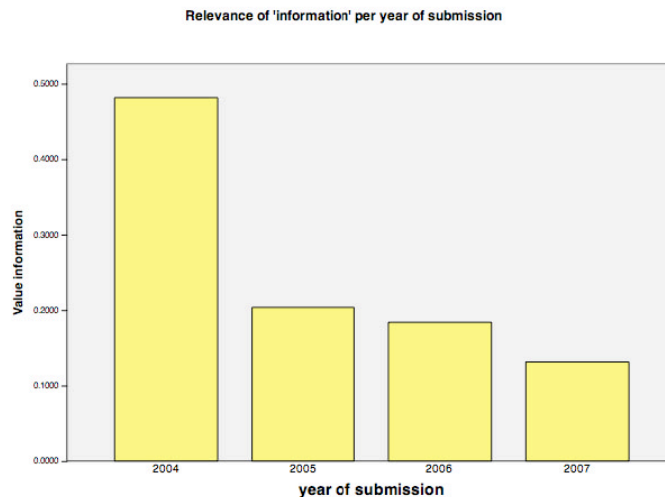
Figure 16– Temporal trend for 'media'



As far as the theme *Information* is concerned, it sees the concepts 'information', 'local', 'government', 'services', 'city', 'human', 'development', 'youth', 'including', 'map', 'life', 'members', 'created' appearing in similar contexts. Among these concepts, 'information' co-occurs frequently with 'local', 'government', 'development'; 'government' co-occurs frequently with 'services' and 'development'; 'local' show a strong co-occurrence with 'information' and 'development'; 'development' and 'members' co-occur frequently with 'local' and 'information'. As Figure 17 shows, the concept 'information' is most relevant in the entry forms submitted in 2004, while it

progressively decreases in importance in the following years (i.e. it co-occurs not so often with Tag classes '2005', '2006', '2007').

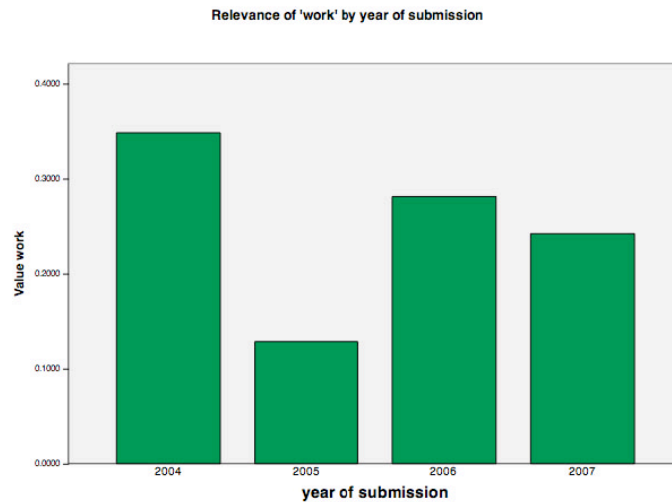
Figure 17 – Temporal trend for 'information'



Another important concept is 'site', which is also the most frequent one. The theme *Site* includes 'site', 'world', 'program', 'database', 'online', 'space'. Despite the relevance of the main concept, however, among the other concepts only 'online', 'site' and 'world' show some co-occurrence, that is, they co-occur with each other.

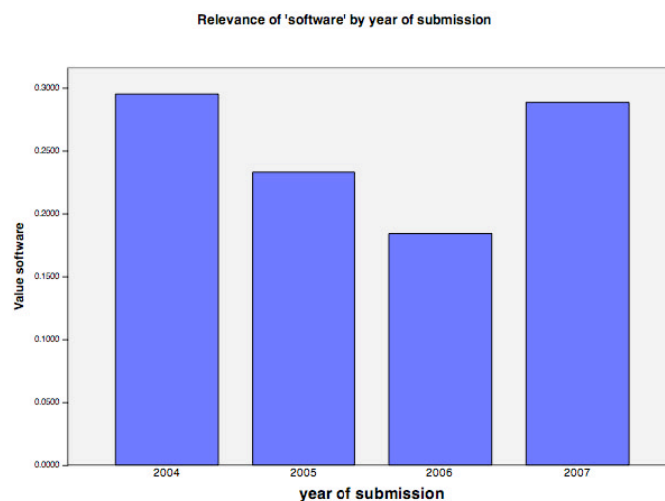
The thematic circle *Work* includes the concepts 'work', 'cultural', 'international', 'network', 'text'. The most remarkable co-occurrence among these concepts is the one between 'work' and 'cultural'. It should also be noticed that, apart a decrease in relevance in 2005, the concept 'work' has been keeping a certain importance over the four years of competition (i.e. the value indicating the co-occurrence between at least three Tag classes and 'work' is relatively high).

Figure 18 – Temporal trend for ‘work’



The theme *Software* includes very homogeneous concepts: ‘software’, ‘video’, ‘open’, ‘free’, ‘collaboration’. Notably, there is a very strong co-occurrence pattern between ‘software’, ‘free’ and ‘open’. Evidently, this theme correspond to the FLOSS discourse: also ‘collaboration’ – which is not a strong concept in itself – is part of this theme. As with ‘work’, ‘software’ has been a key concept over the four years of competition: the value of co-occurrence with the Tag classes tends to be always high.

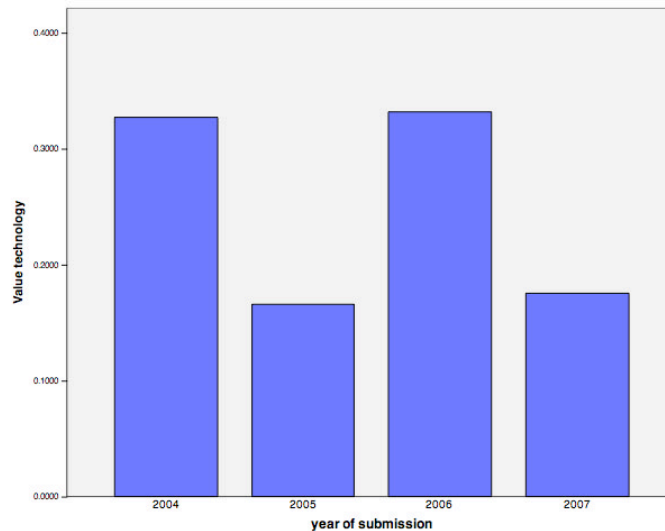
Figure 19 – Temporal trend for ‘software’



The ‘technology’ concept is a crucial one, as well. Although it co-occurs more often with Tag classes ‘2004’ and ‘2006’, it has kept a strong co-occurrence with ‘2005’ and ‘2007’, too. That is, the entry forms submitted in 2004 and 2006 dealt with it more than the entry forms submitted in 2005 and

2007, relatively to the total amount of texts from each year. In absolute terms, however, 'technology' has remained crucial every year.

Figure 20 – Temporal trend for 'technology'



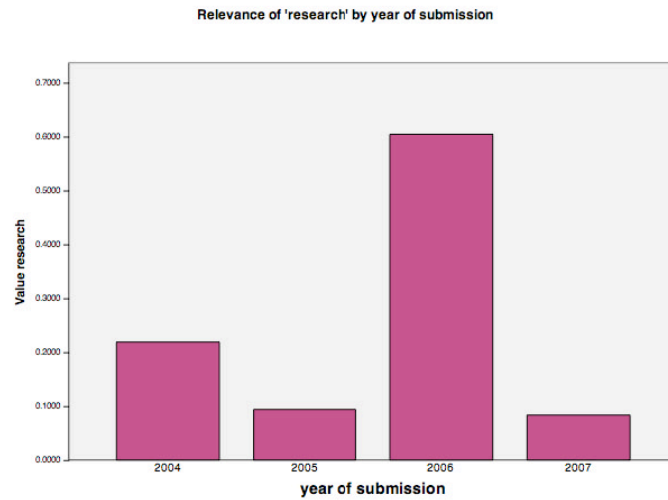
The theme which aggregates around *Technology* is composed by heterogeneous concepts like 'technology', 'design', 'school', 'political', 'digital', 'group', 'students', 'internet', 'time', 'countries', 'environment', 'global', 'concept', 'collective'. In particular, among these, 'technology' co-occurs often with 'design' and quite often with 'students'. Other frequent co-occurrence patterns are 'students' with 'design', 'technology', 'school'; 'school' with 'students', 'design', 'digital', 'technology'; 'countries' with 'global' and 'time'.

The *Social* theme aggregates highly dispersed elements like 'social', 'mobile', 'org', 'public', 'Web', 'team'. Very few, in fact, are the remarkable patterns of co-occurrence among them: 'social' often co-occurs with 'public' and vice versa; 'mobile' often co-occurs with 'social'.

The *Research* theme is similarly fragmented. Here, the only two concepts aggregated – 'research' and 'server' – do not even co-occur. As far as the concept 'research' is concerned, it should nonetheless be noticed the strong attention that it obtained in the entry forms submitted in 2006, as Figure 21 shows.

4 Results and Discussion

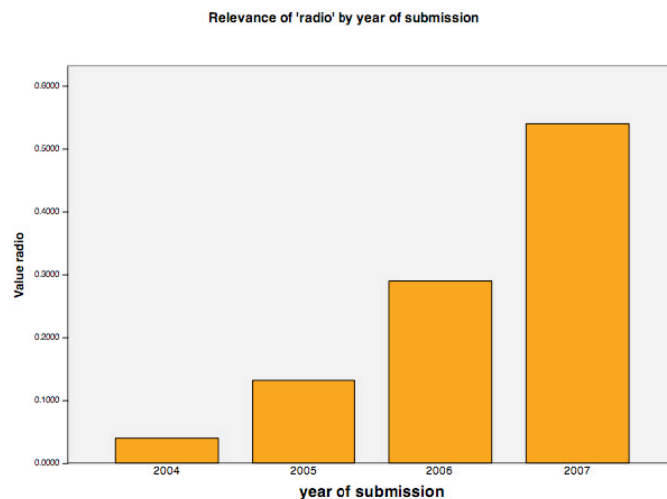
Figure 21 – Temporal trend for 'research'



In the *System* thematic circle – including 'system', 'support' and 'money' – the only notable association is 'money' co-occurring with 'system'.

Most remarkable is the temporal trend for the concept 'radio' – which is also the sole element pertaining to the homonymous theme. Surprisingly, this old medium has gained more and more attention year after year, being vastly mentioned in the entry forms submitted in 2007.

Figure 22 – Temporal trend for 'radio'



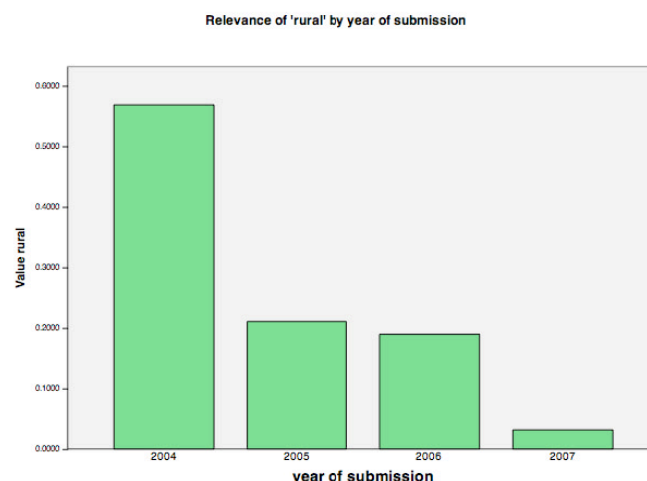
The last theme, *Rural*, includes the concepts 'rural', 'health' and 'learned'. These concepts are strongly related: 'rural' occurs very often with 'learned' and quite often with 'health', while 'health' and 'rural' are the concepts with which 'learned' co-occurs most frequently. This theme corresponds to one of the themes extracted in Task 1, notably the one we

called ‘rural development through education’. In both cases, by browsing textual instances it is possible to catch a glimpse of the narrative underpinning this theme. Information technologies are conceived of as directly benefiting the quality of life of rural populations by allowing access to informal education and information on diverse topics of interest. The rise of networks is the unmediated consequence of the possibility to access ICT. Conversely, lack of knowledge would cause severe impairments:

The farmers of the riverside remotest areas [of Bangladesh] do not have any access to the information society; consequently the conditions of 7,000 rivers and streams of the country are degrading day by day with negative impact on the overall health of the aquatic system, human health, biodiversity, rural economy, rural life etc. [...] Due to the knowledge gap of the farmers on proper use of fertilizer and pesticide the usages went up a hundred times over the last thirty years, but with the education of the Mobile Units, thousands of farmers were trained on proper use of fertilizer and pesticides, agricultural productivity is increased and thousands of landless farmers did not have to leave their villages in search of work. [...] Technology contributes to the democratization of information and offers assistance to the underprivileged people of the remotest areas. This project has helped the people who had no right to be accessed to the information society. The rural people now can discuss their points of views and express their opinions. With the mobile unit activity their voices are disseminated in the distant areas and to other farming groups, and in this way they are able to think and decide the alternative ways for their local problems. Now they can look at the whole world, establish their relationships with it and, in this way they are building up a vision of development. (*Mobile Internet-Educational Unit on Boats* submission, 2004)

Although this kind of narratives is quite recurrent, in our data set it follows a decreasing trend. If several entry forms dealt with it in 2004, from that year onwards it has become less and less popular, as Figure 23 shows.

Figure 23 – Temporal trend for ‘rural’



Summing up, the choice of looking for themes starting from contextual similarity (i.e. closeness in the map) has turned out to be double-faceted. Not all thematic circles, in fact, represent full-blown themes: some of them (*Site*, *Social*, *Research*, *System*) are aggregates of rarely co-occurring concepts whose closeness in the map is hardly significant. Conversely, some others have revealed meaningful associations and deserve further investigation. Notably, *Art*, *Information*, *Work*, *Software* aggregate elements that co-occur with a certain regularity and may be seen as constituting the following themes:

- media art
- local development and information
- cultural work
- free and open software

As we have just made with *Rural*, in the following sub-section of the paragraph we shall try to check these themes and identify some narratives out of them by browsing through the textual instances that correspond to frequent co-occurrence patterns. In so doing, we won't of course only consider the co-occurrences recurring inside thematic clusters anymore, but we shall rather open up our analysis to the whole co-occurrence lists of highly relevant concepts. By so doing, we shall try to give reason also of those concepts – some of which are highly pertinent in the whole semantics – being included in the more fragmented clusters.

Lastly, as to the temporal trends we presented in the last pages, as already argued in notes 157 and 160 above, we have been intentionally avoiding providing explanations that could not be scientifically verified. Instead of producing explanations that would request us to enter into the slippery terrain of hypotheses verifiable only by introducing some external force from the outside of this data collection, we purposely preferred to provide 'mere' descriptions of how elements have entered/left the competition over the four years of activity. We are sure that these temporal descriptions will gain meaning to the eyes of those, *in primis* *Prix Ars Electronica's* Digital Communities concept designers, who have been observing online assemblages over the last years. Yet, we believe similar explanations do not pertain to the domain of a research that has to meet scientific requirements. To use Latour's own words: 'if your description needs an explanation, it's not a good description' (Latour 2004a, 67). Rather, the comparison of the

different explanations that diverse actors could give of those trends would be very intriguing.¹⁶¹

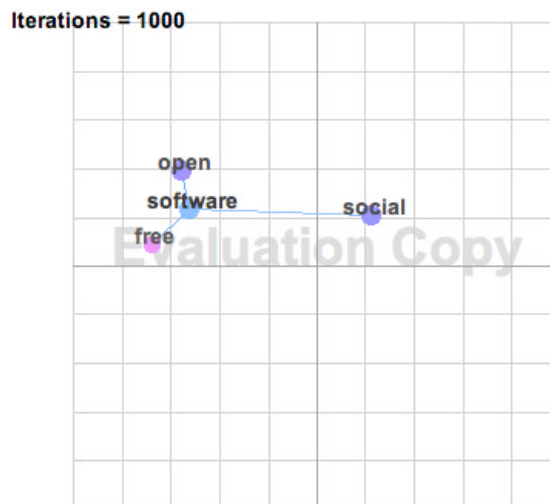
4.2.2 Comparing narratives

Coming to the qualitative analysis based on the co-occurrence patterns found by Leximancer, besides strong but ascertained co-occurrences like 'site' AND 'information', 'site' AND 'development', 'media' AND 'art', 'art' AND 'work', 'software' AND 'development', less immediate but more significant relationships can be noticed if only the relative strengths of the concepts co-occurring with the most popular ones are compared. Let's take into consideration 'software'.

4.2.2.1 Social software as mediator or intermediary

As seen in 4.2.1, the concept 'software' is strongly related with 'free' (they co-occur 11% of times in which 'software' appears) and 'open' (10,8%), while the strength of co-occurrence with 'social' is considerably lower (3,7%). Considering also the nearness in the map, while 'open', 'free' and 'software' appear in similar conceptual contexts, 'social' and 'software' do not.

Figure 24 – Co-occurrence between 'software' and 'free'/'open'/'social'



This evidence leads us to hypothesize a predominance in our data set of the FLOSS and hacker discourse on the Web 2.0 one, one of whose key expressions is precisely 'social software'. Further evidence to this hypothesis

¹⁶¹ To make an example, we believe it should not be the duty of a scientific research to explain the decreasing trend of the concept 'rural' either as the diminishing weight of the 'Global South' in the digital domain or as the eclipse of a 'Web 1.0' attitude towards digital media. Rather, it does pertain to a scientific research to put similar interpretations into comparison.

is provided by the Entity Vocabulary list: among the Top Thirty most frequent words that appear in sentences containing 'software', 'social' appears 222 times, while 'open' 422 times and 'free' 420 times.

The browsing of textual instances confirms this hypothesis and adds further elements. On one hand, in all cases where 'software' occurs with 'free' and/or 'open', these terms are used to describe FLOSS initiatives participating in the competition: from FSF-GNU and Linux to dyne.org and epigones. On the other hand, the narratives that underpin the co-occurrence of 'software' and 'social' are less homogeneous.

First of all, one could wonder what does 'social software' exactly mean. Notably, since software design always rely on the knowledge of prior software – from programming languages to previously developed similar projects, by definition code development is a collaborative process and software the artefact that crystallizes this social process.¹⁶² In our data set, the awareness of how software design constitute a moment for social inquiry lies at the very core of the *Spring-alpha* project:

Thematically, "spring-alpha" is an exploration of the relationship between software and social systems, focusing, in particular, on how issues in their design and implementation mirror one another. This is being realised practically, by taking the development of a game simulation world and exploring how the different issues involved in its design can form a process of social enquiry. [...] [The game] depicts a story in which the occupants of an industrial housing project attempt to establish their own autonomous society. The narrative acts as a kind of parable paralleling the themes and practice of the project. It will serve as a "conceptual kernel" which will be extended through collaborative public workshops. The content of the game is therefore also developed through a form of "Open Source" method. many of the issues involved in designing such a game mirror those involved in constructing real-world social systems. In this way the development process will act as a form of critical social enquiry exposing the relationships of software and social systems. Objectives: To demonstrate the potential of software design as a process of social enquiry. To extend the collaborative, social principles of FOSS beyond programming into broader forms of participation and creative practice. To foreground the development of software as a fundamentally social process. (*Spring-alpha* submission, 2004)

¹⁶² This is the crucial insight of net.art, software art and hacker practices (see paragraph 1.1.3). We wish to thank Tatiana Bazzichelli for the stimulating discussions about this point. ANT provides a further access to this vision by going back to the semantic root of the word 'thing' as 'assembly': 'long before designating an object thrown out of the political sphere and standing there objectively and independently, the *Ding* or Thing has for many centuries meant the issue that brings people together *because* it divides them. [...] The *Ding* designates both those who assemble because they are concerned as well as what causes their concerns and divisions.' (Latour 2005b, 13, *italics in the text*). According to ANT, 'social' means 'collective' and things (also digital artefacts) are 'social' because they are 'assemblies', 'gatherings' (see also Latour 1987, 1999).

Very differently, according to the *[meme.garden]* project's entry form, social software is a peculiar kind of software that emphasizes the human dimension of networking. Here 'social' is synonymous of 'human' and is opposed to 'cold' computer systems:

[meme.garden] functions as social software which explores an individual's interests (whether these interests be news topics, political phenomena, health, hobbies, etc) among a social group. The software emphasizes the human element inherent in networked tools. Artwork created with computerized systems often feels cold and impersonal to audiences. The [meme.garden] software blends social software, search tool, and aesthetic system to visualize participant's interests in prevalent streams of information, encouraging browsing and interaction between users in real time, through time. Our goal is to make a social software search engine tools that embody human themes. (*[meme.garden]* submission, 2007)

A similarly binary narrative is present in the *Barnraiser* submission. According to this project, social software focuses more on the 'social conventions' than on the 'software' aspects. It 'directly' benefits society by allowing people to interact and share knowledge. If providing hardware is not sufficient to assure development, having access to *social* software and knowing how to use it facilitates the development of society:

We are a growing movement of people that want to contribute directly to a better society by pushing forward the boundaries of social software development and education. Social software is developed from social convention rather than software features. Social software facilitates interaction and collaboration and is changing how people communicate. Installing computers and supplying Internet connection is not enough when building capacity within society. We need software, software that allows that society to develop, allows the people within that society to share knowledge and contribute towards their information society. We facilitate this by creating free social software and ensuring that people can have access to it and the knowledge to use it. (*Barnraiser* submission, 2005)

A third narrative associated to social software is provided by the *World-Information.org* project's entry form. Here, like in Web 2.0 rhetoric, social software's peculiarity lies in allowing the convergence between sender and receiver, passive user and content contributor:

the [social software] content management system had to be specifically adaptable to support the different workflow models simultaneously because not only internal editors but also external parties such as institutions or single individuals must be enabled to join the editorial team. Also the very heterogeneous skill levels of the prospect users had to be kept in mind. Editors all over the world had to be given access to the system over the

internet. The user interface had to give support during the research process as well during content entry. (*World-Information.org* submission, 2006)

The differences between these narratives may be cleared up by using the distinction between mediators and intermediaries.¹⁶³ On one hand, in the *[meme.garden]* and *Barnraiser* accounts, computer systems are supposed to be cold digital machines and social software acts as an intermediary that dilutes this coldness into the warmth of human interaction; yet, it does not introduce elements that could interfere with the output, which is simply given by the encounter of the 'digital' with the 'social'. On the other hand, in the *Spring-alpha* project the software and the social system get constituted *through* their interplay. The gaming software is a mediator because it transforms the subjects involved in an ongoing inquiry: the output (the autonomous society) cannot be predicted by the input (the 'conceptual kernel').

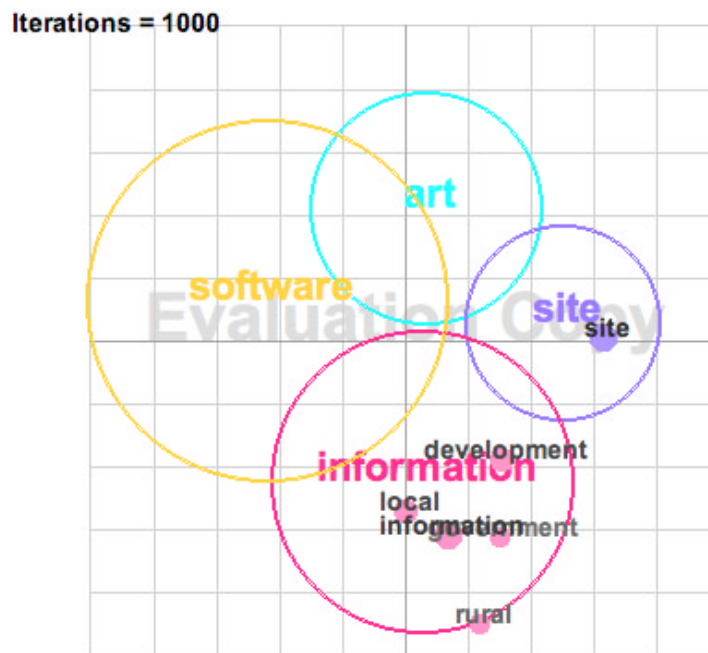
4.2.2.2 Different technologies for different territories

Let's now take into consideration the concept 'information'. In 4.2.1 we have already seen how it often co-occurs with 'local', 'government' and 'development'; here, we want to consider also the concepts that are external to that thematic circle.

In counter-tendency with the dominant Internet discourse on de-territorialization, 'information' registers the emergence of a territorial topic. In the whole co-occurrence list for 'information', among the five concepts most frequently co-occurring, three of them display a semantic reference to a territorial dimension ('local', 'government', 'rural'), while another one ('site') connotes both a physical and a virtual (website) portion of space.

¹⁶³ See paragraph 2.2.

Figure 25 – Co-occurrence map for ‘information’



The territorial topic is present also in the co-occurrence scheme for ‘development’, the fifth item in the list. The strongest item co-occurring with ‘development’, in fact, is ‘local’, followed by ‘information’, ‘site’, ‘software’ and ‘technology’.

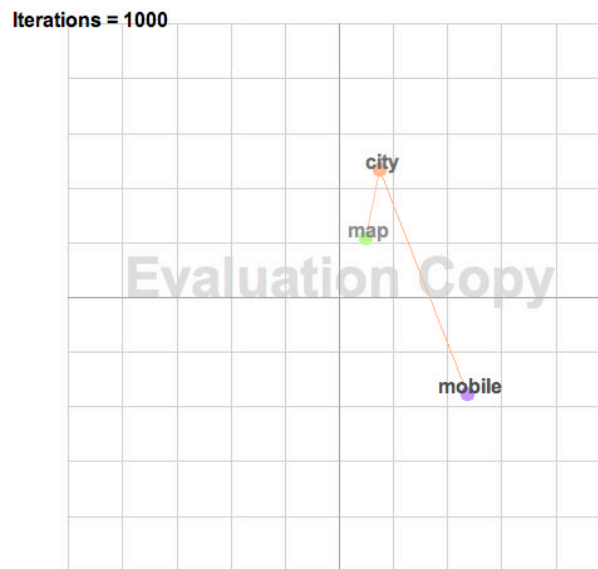
In most of the cases of co-occurrence between ‘information’ and ‘local’, there emerges a recurring narrative according to which information technologies are seen as empowering means for local, disadvantaged communities:

Namma Dhwani (Our VOICES in the Kannada language) is an initiative which has created a space for different rural social groups to utilize a combination of cable audio & digital technologies to put in place a local information and communication network owned and operated by members of the local community. [...] Namma Dhwani uses a unique model developed to suit local needs and circumstances. It not only combines cable audio with new digital media, but also combines these media tools with a network of local community groups, specifically poor women’s self-help groups (SHGs), watershed groups made up of local farmers, and a local development resource centre. Namma Dhwani has enabled poor semi-literate, women, farmers, labourers, school drop-outs and other community members to use information & communication media & technologies to create: 1) Their own channels of information access, storage and dissemination 2) Their own platforms for communication and discussion [...] The network successfully addresses local information needs and has had a visible impact on local development and governance. (*Namma Dhwani* submission, 2004)

However, to a further investigation, another distinct model of relationship between territory and ICT emerges. Besides the one clustering

around 'information', another, urban-centred form of territory is visualized in the map. The concept 'city', in fact, never occurs with 'rural', 'site' or 'government', and only once with 'development' and 'information'. On one hand, this testifies the absence of the traditional opposition /city VS countryside/: since there is no relationship, there cannot be opposition. On the other hand, 'city' shows an absolutely peculiar semantic context aggregating around the urban territory, and a specific 'metropolitan' use of information technologies. While 'city' does not occur with any of the other territorial concepts (except 'local'), conversely it shows a strong co-occurrence with 'mobile' and 'map'.

Figure 26 – Co-occurrence map for 'city'



Looking at the textual instances, they all deal with geo-reference mobile systems allowing the creation of unconventional maps of the urban space and the bottom-up regeneration of a sense of place. Similar projects are usually subsumed under the umbrella term 'locative media'. Here is an example:

Citypoems turns mobile phones in Leeds into widely distributed creative writing and publishing tools (70% of teenagers and adults in the UK own a mobile phone). Everyone in Leeds can read and write a Citypoem, experiencing and contributing to an enriched sense of their own place from wherever, and whenever, they are in the city. The Citypoems biography is made new by every reader, turning the pages in the order of their own daily lives as they move through the city, and transforming mobile phones into books with an infinite number of blank pages waiting to be filled. (*Citypoems* submission, 2004)

Summing up, different roles for information technologies are associated to different types of local territory. Browsing through the textual instances, in the first case we find that ICT are seen as empowering tools fostering the development of disadvantaged areas, mainly rural, in partnership with local governments, by sharing information accessible through websites. In the second case, on the contrary, information technologies become mobile and cross the city. They are conceived of as representational tools that allow the creation of subjective maps of the urban space, of collectively generated psycho-geographies.

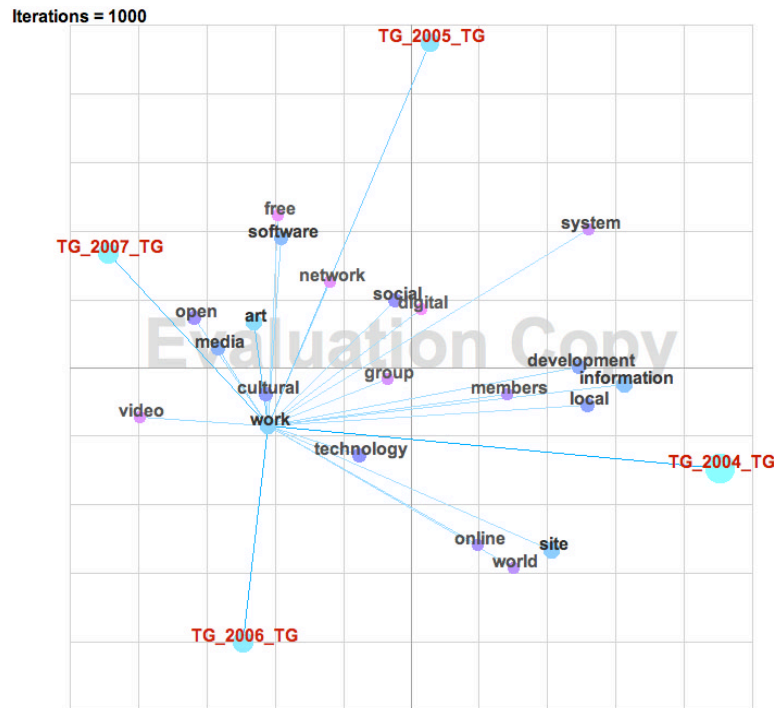
Here, the mythological local community we discussed in chapter 1 hits the ground under two different forms, each of which attributes a different role to digital media.

4.2.2.3 Knowledge labour between sustainability and gift economy

Another central topic that appears in the map is the one related to 'work'. Actually, 'work' is the third most frequent concept emerging from the data set, after 'site' and 'art'. It is also the second most central concept after 'art', meaning that – besides being frequent – it also often appears in contexts surrounded by the other concepts that Leximancer has extracted.

But what kind of work emerges from the document set? First, in 4.2.1 we have seen a remarkable co-occurrence with 'cultural'. In particular, 'cultural' and 'work' are also very close in the map, meaning that they appear in similar conceptual contexts. Furthermore, 'art', 'media', 'software', 'open', 'online', 'video' are the other words with which 'work' more often occurs. It can thus be said that the data set deals primarily with knowledge labour.

Figure 27 – Co-occurrence map for ‘work’



Second, when it comes to the models of remuneration of cognitive labour, two different meanings of ‘work’ emerge. The first one deals with work as an economical activity, while the second one conceives of work as a voluntary act oriented to the production of common goods.

On one hand, ‘work’ appears quite frequently in the section dedicated to the planned use of the possible prize money (indicated by the recurring word ‘money’). This testifies the intention to allocate some resources towards the sustainability of cognitive work and to go beyond the equation ‘immaterial work online’ = ‘amateur, unpaid labour’ fostered by the Web 2.0 hype.¹⁶⁴ An interesting proposal that addresses sustainability without abdicating to free knowledge is advanced by the *SerendiPd* project:

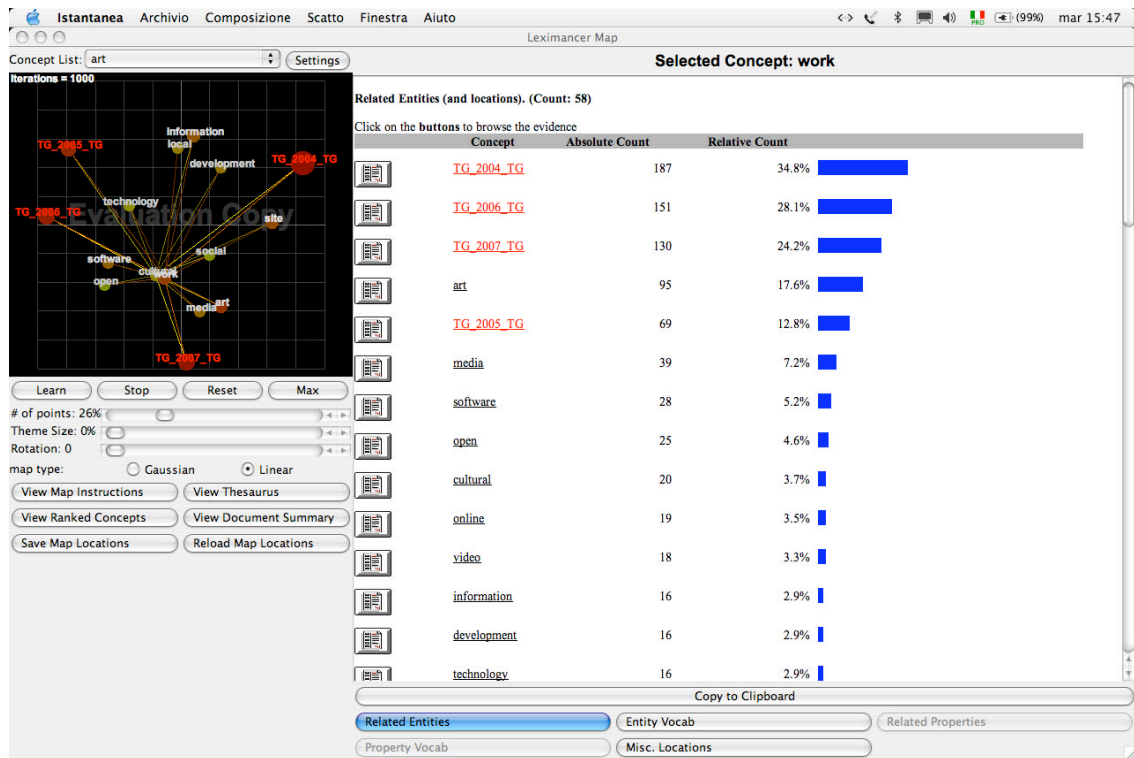
There are many people who dedicate substantial time and resources to making Pd better. We would like to enable such people to earn a living while working on Pd, while keeping it free. There are a number of methods of raising money for free software projects, including: project donations, selling support like RedHat does, and bounty systems like those used by GNOME. [...] the GNOME bounty system (<http://www.gnome.org/bounties/>) makes the most sense for the Pd community. One project that we would like to take on with the prize money would be to build a bounty board for Pd, where both user- and developed-initiated tasks could be posted. For user-initiated tasks, money collection via donations would continue until someone proved that the task had been completed; this individual would then receive the total collected sum

¹⁶⁴ See paragraph 1.2.

for the work completed. For developer-initiated tasks, developers would include their minimum fee for execution. Pd users would give money to whichever tasks they deemed worthy; when a bounty is reached the developer would then work to complete the task, receiving payment upon completion.

On the other hand, ‘work’ co-occurs very frequently with ‘open’: this is the eighth item in the co-occurrence list for ‘work’ (see Figure 28).

Figure 28 – Co-occurrence list for ‘work’



When browsing through the textual instances, it appears clear that ‘open’ is used in all the contexts wherein it co-occurs with ‘work’ as synonymous with ‘free’. All these instances deal with the exaltation of volunteer cognitive work whose efforts allow the creation and distribution of immaterial commons. Volunteer workers are conceived of as community-engaged individuals contributing to the free/open knowledge:

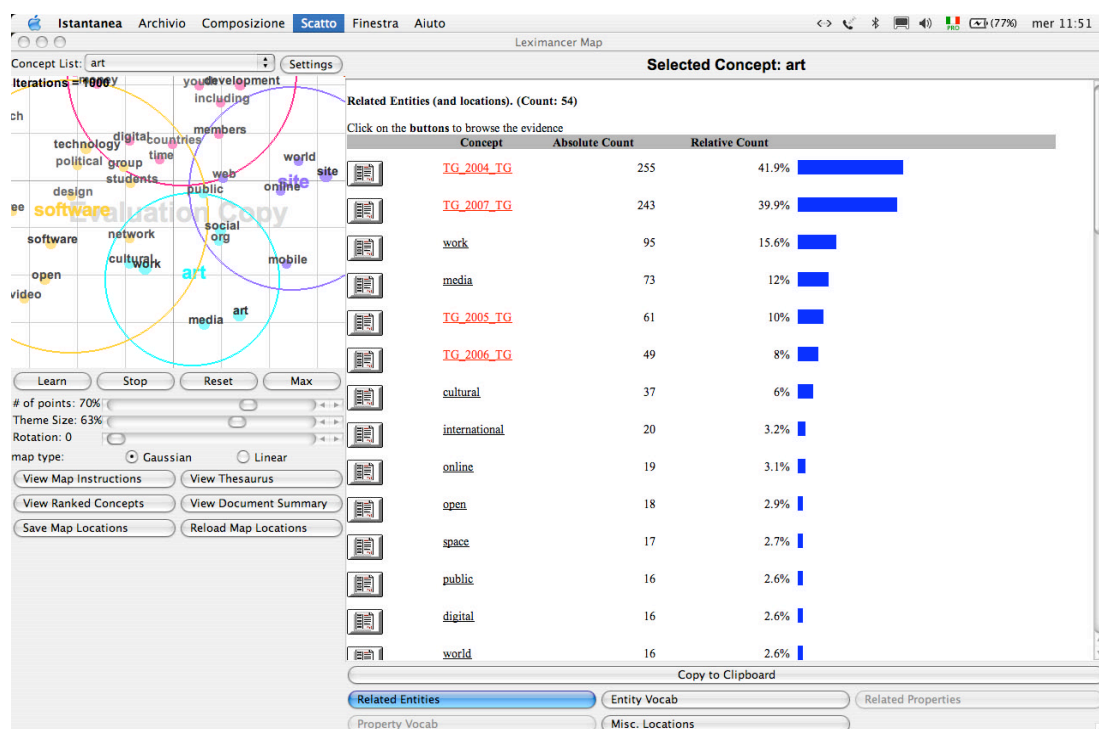
Ubuntu is a community developed, commercially supported Linux distribution with an emphasis on software freedom and making computers as easy and accessible for everyone. [...] Ubuntu has access to thousands of additional tools and applications, and a huge community who provide support and assistance to Ubuntu users. Ubuntu is commercially supported by Canonical Ltd, but a worldwide network of enthusiastic volunteers work together on all aspects of the system, providing a solid community orientated distribution. (*Ubuntu* submission, 2007)

Summing up, in the data set analysed the topic of labour is still wavering between the need for economic models that can assure an adequate remuneration to cognitive work and the push towards the creation and distribution of open and free commons. However, even when acknowledging these contrasting narratives about ‘work’, a significant trend must be noticed. The entries where ‘work’ and ‘open’ co-occur were submitted mainly in 2004 (76% of cases), while the entries where ‘work’ and ‘money’ co-occur were submitted largely between 2006 and 2007 (60% of cases).

4.2.2.4 'Public media art' as politics

The last strong topic emerging from the data set could be defined as ‘public media art’. As we have seen in 4.2.1, ‘art’ – the second most frequent concept in absolute terms - is close in the map to ‘media’ and ‘music’ (they co-occur in similar contexts). Furthermore, among the ten concepts most-frequently co-occurring with ‘art’, three are related to the type of medium (‘media’ in general, ‘online’, ‘digital’), three are attributes of art itself (‘international’, ‘open’, ‘public’), other three are part of frequent expressions (‘cultural’, art-‘work’, art-‘world’). The last one, ‘space’, in the textual instances gets alternatively included into expressions like ‘public space’, ‘open space’ and ‘space of art’.

Figure 29 – Co-occurrence map and concept list for ‘art’



If we concentrate on the attributes of art, apart from the foreseeable adjective 'international',¹⁶⁵ significant results emerge when 'art' co-occurs with 'public' and 'open'. Additionally, it should also be noticed that 'art' is the most frequent concept in the 'public's co-occurrence list. Analysing the single occurrences, there emerge three meanings according to which art may be defined as 'public' or 'open'.

First, art is public because it uses public space as a creative medium or as the space of exhibition. This is respectively the case of projects like *Glowlab* – whose work on psycho-geography deals specifically with urban spaces, or like *52weeks52works* – whose artworks were deployed in public spaces worldwide.

The second narrative sees art dealing with political engagement and direct intervention into social movements. In the *REPUBLICart* project, for instance, 'public art' is seen as retaining an organizational, theoretical and political role:

the art of res publica is about experimental forms of organizing, which develop in precarious micro-situations for a limited period of time, testing new modes of self-organization and interplays with other experiments. The "organizing function" of art (Walter Benjamin) creates new spaces in the overlapping zones of art practices, political activism and theory production. [...] Joining the heterogeneous activities against economic globalization, the old forms of intervention art are being transformed and new ones are emerging. In the context of current political movements, art is becoming public again. (*REPUBLICart* submission, 2004)

The third narrative related to open/public art stresses a process-oriented aesthetic. Here, 'open art' is about collaborative creation eluding copyright regimes:

The whole basis for the experience is 'intellectual generosity', the creation and supporting of an open environment for people to work on a project without being tied to any kind of restrictions of production created by the copyright. [...] Our goal is develop open art, produced in a collaborative way, within workgroups spread all over the world. (*Re:combo* submission, 2007)

More in detail, open art deals with distributed learning and authorship. It is the response to the privatization of the Web and to the closure of the

¹⁶⁵ After all, this research analyses the entry forms submitted to an international festival on digital art.

source code adopted by digital artists which followed the commodification of net-art:

a number of prominent artists have been experimenting with models for selling digital art, and dealers who smell money are scrambling to help artists package work into closed, exclusive forms. While there's nothing wrong in principle with making money off art, in practice this pressure has led some artists to move toward formats where code is hidden from view and where access is controlled by private collectors or gated communities. (*Open Art Network* submission, 2004)

According to this narrative, while the blackboxing of code will lead to the 'elitarization' of digital media and the exclusion of the many from such practices, the establishment of ethical conventions and procedures and the promotion of open standards cultivated from within the community of online artists will empower individual artists:

the opportunity to create open yet enduring standards--and most important, a community ethic--offers creative individuals a chance to take control of their destiny and help shape the culture that nourishes them. The Open Art Network aims to empower artists working in digital formats by devising and promoting standards that encourage an open architecture for the Internet and digital media. (*Open Art Network* submission, 2004)

Notably, empowerment proceeds from the opportunity for single artists not only to consume each other's works, but especially to mutually learn from each other's creative process. The access to mutual learning is assured by open standards and procedures. Therefore, if we take into account Latour's definition of 'the political' as both the procedures that allow the assembly to gather and the matter of concern that has to be discussed into the assembly (Latour 2005b), in this third meaning 'open art' is eminently political, since it aims at setting the standards whereby an assembly may constitute.

At this point of the research, we have succeed in finding some main themes emerging from the data set without postulating prior theories. Furthermore, in the last part of this paragraph we have identified some narratives related to those themes. Actually, these narratives enlighten as many theories of action that account for peculiar roles of technological objects. In the next paragraph we shall focus on some of these theories in more depth.

4.3 Observing Digital Communities: A Proliferation of Mediators

Up to know this research has struggled to extract meaning from a vast and variegated set of qualitative accounts. In order to deal with almost one thousand entry forms, we have been forced to reduce complexity to a manageable level by relying on co-occurrence patterns and Relational Analysis. By so doing, we found a set of elements associated with 'online community' and demonstrated the appropriateness of the choice to not select a type of grouping in advance (Task 1). In Task 2 we then found some relevant themes around which Ars Electronica's Digital Communities competition has been deploying from 2004 to 2007, we compared them to the concepts emerged in Task 1 and we followed their movement over years. Lastly, we identified some contrasting narratives associated with those themes.

During these stages, we have always refrained from the temptation to add some explanation to what we were just describing. Every time this temptation came to our mind,¹⁶⁶ we struck up loudly our *noli me tangere* towards definitions, correlations, conceptual assumptions and methodological protocols. If such a lonely and renouncing Franciscan path was undertaken, it is because at the end of 2000s postulating a definition for a fuzzy object of study called 'online community' would have cast this research miles away from science and objectivity. Nothing would have been easier than starting from presuppositions developed on field. On the contrary, it was the incommensurable distance between much diverse initiatives – all defined as 'online communities' – that suggested the need to make a clean sweep and start on a much longer and laborious journey. Tracing back communities is still the goal of this journey, mapping the cartography of the different theories of action associated with them is its means.

Therefore, the results that have been obtained up to now are only half of the story, the half that has to reduce the complexity of the social when dealing with vast data sets. Conversely, the other half lies in the opposite movement of addition, proliferation, observation. As Venturini points out, observation and description are two opposite but related movements:

¹⁶⁶ And it used to come quite often, since it is frequent that researches that provide well-explained patterns of cause-and-effect gain much attention and high rankings. Not to mention researches whose aim is about providing solutions. Unfortunately, this research is more about tracing minute shifts in meaning.

'social life flows like magma in a double movement of liquefaction and solidification. When we *observe* controversies, we focus on the liquid side, as only in quarrels, disputes and fights, new actors can make their way to the surface of society. When we *describe* controversies, we contribute to the solidification of some portions of social magma reducing its complexity [...] Observing a controversy is like setting up a scientific observatory: the quality of observation depends on the capacity to multiply the number and increase the sensitivity of monitoring devices.' (Venturini 2008, 20-1).

At this point of the research, time has come to 'increase the sensitivity of the monitoring devices' and to privilege an articulated observation of a small number of entry forms so that more associations may emerge and contrasting definitions may be deployed in much more depth than we might do when addressing the whole data set.

Increasing the sensitivity is even more required when considering the implicit character of the controversy about the nature of 'digital communities' that takes place in a competition for similar aggregates.¹⁶⁷ If in paragraph 2.1 we got rid of this expression, it is now time to recover it not as a starting point, but as the result of the observation. In paragraph 4.2.2 we have seen how well-acquainted expressions like 'social software', 'local information', 'knowledge labour' and 'public art' actually do not correspond to unique, shared concepts. When comparing the entry forms among themselves, these expressions reveal all their contrasting meanings, as if implicit controversies came to the surface only when projects are put into comparison. Similarly, what is supposed to be indicated by the expression 'digital community' by the projects that participate in a competition for these entities ought not to be thought as a stabilized substance on whose definition all agree, but rather as different kinds of associations undergoing controversies.¹⁶⁸

This is why, now that time has come to recover 'digital community', we are not going to look for a peculiar substance that might be associated to this label, but rather to trace the mediators¹⁶⁹ that submitters' own theories of action see as participants in the activity of community making. This patient work in search of mediators does not claim to be complete, even if, in opposition to tasks 1 and 2, here reduction is sacrificed to proliferation,

¹⁶⁷ See paragraph 2.2.2.

¹⁶⁸ It should be recalled that for ANT the term 'controversy' refers to any scientific or technological object that has not been stabilized yet. As already noticed, the wide meaning of 'controversy' spans from simple disagreement (or better, mutual agreement on disagreement) to open fights.

¹⁶⁹ For a definition of 'mediator', see paragraphs 2.2 and 2.7.

comprehensiveness to articulation.¹⁷⁰ As a matter of fact, such a proliferation could be as prolonged as the list of spokespersons who have ever talked as representatives of a digital community. ANT itself sets as one of its (few) foundational principles the prescription to observe as many points of view as possible. So, how to set the list of points of view that are legitimized to enter the cartography? How to decide the criteria of pertinence?

To this questions we have partially answered in paragraph 2.2.1. At that time, we chose to take into consideration the projects recognized as occurrences of digital communities by the project leaders who submitted them to evaluation, by the competition's International Advisory Board who proposed additional entries and by the independent jury who excluded those projects that did not fulfil the requirements. Now, we add a further filter to this selection and consider those projects that not only were not excluded, but that were also awarded a first or second prize by Ars Electronica's international jury. For sure, such a criterion of pertinence is not more arbitrary than using a geographical or temporal boundary: at least, it embeds the viewpoint of many more actors than a single researcher.

4.3.1 *Tonga.Online. Or of rivers, dams, antelope horns and digital music*

An amazingly rich case of proliferation of mediations is provided by the *Tonga.Online* entry form. This project won an Award of Distinction in 2004. It is an offspring of a cultural exchange program between Austrian and Zimbabwean artists and NGOs which has been running for more than ten years. But let's the spokesperson talk by herself:

In 2001/02 the *Tonga.Online* project has established the first community-based Internet and Computer Centre in one of the remotest areas of Zimbabwe. Encouraged by the response, the project is now striving to reach out to other villages and across the waters of the Zambezi River into Zambia. The *Tonga* community – only fifty years ago forcibly divided by the advent of modern technology and the building of Kariba dam – has taken up the chance to use the most advanced communication technology for rebuilding and improving links within the community and with the world abroad. A truly local area network of telecentres is in the extension stage. One could perceive the *Tonga* people as a digital community per se because of their music. Despite their harsh living conditions the *Tonga* people have always adhered to their cultural heritage and ways of communicating oral traditions that are generations old. Their unique *Ngoma Buntibe Music* is a kind of binary or digital music in its own sense since one musician is mastering one note only by contributing a short blow on an antelope horn to an incredible

¹⁷⁰ 'Articulation [...] does not expect accounts to converge into one single version that will close the discussion... Articulations, on the other hand, may easily proliferate without ceasing to register differences. On the contrary, the more contrasts you add, the more differences and mediations you become sensible to.' (Latour 2004b, 210-1).

4 Results and Discussion

storm of sound and stamping movements. Robert Bilek (a journalist with ORF / Vienna) after an encounter in 2001: 'The music of the Tonga could be perceived as a system of binary individual decisions, sound or silence, 1 or 0, within the matrix of a creative group performance. Through this sound, through this seemingly wild and chaotic order, the community reassures itself of its coherence... It appears that the Tonga people's understanding of digital technology has its roots in their musical tradition. What could prevent them from covering new grounds using computers?' There is a smart gadget which has proved to be very helpful in expanding the project beyond the centres. It is a mobile device called Alpha Smart, a kind of expanded keyboard run on batteries. Penny Yon and Theophorah Sianyuka are closely monitoring the establishment of two more telecentres in Sianzyundu and Siachilaba villages from May 2004 onwards. They will use the Alpha Smarts (and a digital camera) to provide and collect messages and digital reflections on the effects of the project extension and send them frequently onto the website www.mulonga.net. These contributions will create a kind of social intervention sculpture by addressing stakeholders and the general public – from Siachilaba pupils to the fishermen or smugglers on Lake Kariba, from basket weaving women to the Chief's messenger on his bike or the Cuban doctor at Binga Hospital. This exercise will be concluded with the festive opening of the Centres on 4th/5th September 2004 (concurrent with Ars Electronica Festival) when Ngoma Buntibe musicians from Binga area and their counterparts from Zambia will complement the modern means of communication and celebrate the smart X tension of the Tonga.Online project in their own way. (*smart X tension/Tonga.Online* submission, 2004. *Author's underlining*)

This account wonderfully testifies the flamboyant life of mediators. From Austrian journalists to dams on the Zambezi River, from modern technology to the Ngoma Buntibe Music, from mobile devices to Cuban doctors, all these entities take part in some way to the course of action whose goal is 'rebuilding and improving links within the community and with the world abroad'. Under this perspective, the extension of the project across the waters of the Zambezi River into Zambia provides the figuration into which the goal – the unity of the Tonga people – gets embodied. Fifty years before this unity was dismantled by 'the advent of modern technology and the building of Kariba dam': two anti-actants in their own right which are endowed with figurations borrowed from the ranks of Modernity.

In this account, three of the four kinds of traces left behind by the formation of groups enumerated by Latour are present.¹⁷¹ Apart from the spokesperson – obviously the one that submitted the project for evaluation and wrote the entry form – a professional enters the network in order to make possible the durable definition of the community. Austrian journalist Robert Bilek's account is itself part of what makes the group exist, since it provides the community with a theory of action (see below). As to the third trace left behind, boundaries are created and rendered durable by appealing to

¹⁷¹ See paragraph 2.7. See also Latour (2005a, 30-4).

tradition and cultural heritage: 'despite the harsh living conditions the Tonga people have always adhered to their cultural heritage and ways of communicating oral traditions that are generations old'. It is the cultural heritage and the ways of communication that define the Tonga community as a stable entity, that make it hold against the centrifugal force exerted by the harsh living conditions and that ferry the community directly into the digital age.

Actually, the theory of action underpinning the project's vision of the digital community is overtly expressed through the journalist's voice: 'it appears that the Tonga people's understanding of digital technology has its roots in their musical tradition'. It is the traditional Ngoma Buntibe Music that act as a powerful mediator and translates agency from the 'short blow on an antelope horn' into a binary – and therefore digital – sound. The Ngoma Buntibe Music is not only what keeps the Tonga people united in spite of the diaspora started by modern technologies, but also the actant that carries this assemblage into the computer era.

Once the Tonga assemblage has shored on the quieter coasts of digital post-modernity, other adjutants get to march side by side with the Ngoma Buntibe Music to realize the goal of extending the project over geographical boundaries. Notably, the mobile device Alpha Smart 'proved to be very helpful in expanding the project beyond the centres'. Here, information technology allows the project leaders to activate new mediators: 'messages and digital reflections' that, in turn, create new associations with geographically dispersed actants (stakeholders,¹⁷² Siachilaba pupils, the fishermen or smugglers on Lake Kariba, basket weaving women, the Chief's messenger on his bike, the Cuban doctor).

The *Tonga.Online – smart X tension* project is an exemplary case where mediators proliferate and the chain that translates agency stretches out in many directions. Nonetheless, this is a peculiar case: it may happen

¹⁷² By the way, what a better definition for the term 'stakeholder' than 'someone who participates in a course of action'? From the synonymy of stakeholder and mediator, the anti-democratic character of the (extended) use of this term follows. By using 'stakeholder', in fact, one may refer to an assemblage and still avoid making explicit who/what that assemblage is made of. Since 'politics' refers in half part to the procedures whereby groups are assembled and mediators legitimized to take part in that assembly (Latour 2005b), the use of the term 'stakeholder' relieves the one who uses it from publicly arguing who and what is to be included in that assembly. Conversely, in the *Tonga.Online* submission stakeholders are endowed with a list of figurations (pupils, fishermen, etc.).

that the chain is arbitrarily short-cut before agency be fully unfolded, as we are going to see immediately.

4.3.2 ICT and developing countries: empowerment as a cause-and-effect relationship

The case studies we are going to discuss in this paragraph do not represent the totality of the winning projects that are implemented in developing countries, but only those whose goals deal with empowerment of disadvantaged populations and/or consider the belonging to the so called 'Global South' as a distinguishing element. We have already taken into consideration projects showing narratives of empowerment in paragraphs 4.1.1, 4.2.1 and 4.2.2.2. Here, by analysing four cases in depth, we shall show how similar projects tend to be associated with not much extended chains of action.

Very differently from the *Tonga.Online* project, the *Akshaya* submission characterizes itself for the low number of mediators involved in the course of action. This project – that won the Golden Nica in 2005 – has been developed in Kerala (India) to address the Digital Divide in that state. It is implemented by the Government of Kerala through Kerala State IT Mission, the agency for implementing IT policies, and is run by local entrepreneurs.

In the entry form¹⁷³ four objectives and relative theories of action are mentioned. The first goal ('Universal IT Access') aims at setting and maintaining 4500 – 6000 Akshaya e-centres. Here, only one mediator is involved: entrepreneurs running the centres rely on e-literacy courses to assure self-sustainability to each centre ('each centre will be a self-sustaining unit with the e-literacy programme assuring baseline revenue'). Other technological entities – broadband wireless, computers, scanners, printers, webcams, software, IP phones – appear as mere intermediaries, since their presence does not affect the outcome. A second goal – a consequence of the establishment of the centres – will be the creation of 25,000 job positions.

The second objective ('E-literacy') aims at familiarizing people with IT and improve their computer skills. There exist also a meta-goal: to 'create a 100% literate state'. Here, the theory of action is underpinned by an overtly causal relation: 'the process of providing the skill sets shall lead to the creation of a long lasting relation between the Akshaya centres and the families in the catchment, which on a macro level will generate a state wide data warehouse and repository'. In these words it is not clear *through which*

¹⁷³ It is reported as Document 3 in Appendix.

means the process of providing skills will cause a stable relationship whose ultimate outcome is a data repository. As we have seen, in the social domain stability is a costly exception. As ANT has pointed out, face-to-face, unequipped interactions using only basic social skills pertain to a very limited sphere, namely to baboons (see Strum 1994). Unequipped interactions alone cannot bear the weight of maintaining stable relationships that need to be ceaselessly negotiated. It is objects that allow long-standing relationships. However, in the Akshaya account there are no traces of the means whereby the long lasting relation between the centres and the families are supposed to be maintained.

A similar lack of mediators characterizes also the third ('Creation of Micro ICT Enterprises') and fourth ('Creation of ICT Service Delivery Points') objectives. As to the creation of micro IT enterprises, the theory of action is 'im-mediate': entrepreneurs emerged from the local community are seen as lending their 'entrepreneurial spirit' to the 'total development' of community. Here again, no mediators intervene either in the emergence of the entrepreneurs from the community, or in the opposite translation of this spirit from entrepreneurs to communities. Their 'skills and resources' just transport agency: they do not affect the outcome in one direction rather than another, nor trigger other mediators.

Summing up, in the *Akshaya* account there are some intermediaries and only one mediator. Agency gets stopped after few passages and may not rely on entities that translate the initial inputs. As a matter of fact, apart from their role as birth places of the entrepreneurs, there are few references to local communities and the relationship between technology and social ties is explained in terms of cause-and-effect, as one of 'empowerment' immediately proceeding from e-centres to families.

A less deterministic theory of action characterizes *Proyecto Cyberela – Radio Telecentros*, a Brazilian initiative that was granted an Award of Distinction in 2006. As it is explained in the entry form,¹⁷⁴ this project was started in 1990 by the NGO Cemina as an initiative aimed at 'developing female communitarian leadership as an agent of social transformation'. Since this early commitment, the (analogue) radio has been conceived of as a strategic adjuvant, a media(tor) enabling women to promote human rights and gender empowerment: 'el medio rádio fue escogido para esa finalidad por ser el medio de comunicación mas simples y barato, y que atinge 98% de la

¹⁷⁴ See Document 4 in Appendix.

populación, siendo que la mujeres son las mayores oyentes'. Over the years, female radio-makers attending Cemina's classes gathered in the *Red de Mujeres de Rádio (RMR)*: an assemblage born out of the desire to 'strengthen their activities'.

However, with the advent of digital information technologies new challenges arose and new mediators were needed. The new goal became to include women into the new digital realm:

el cenário imposto por las nuevas tecnologías de información y comunicación (TIC) presento un gran desafío para Cemina: o las mujeres hacen parte de ese proceso o serian una vez mas excluidas de la participación igualitaria de la sociedad. Incluir las mujeres en el universo de la informática y de la internet, sin dejar de utilizar el medio radio, passo a ser prioridad para la institución. (*Proyecto Cyberela – Radio Telecentros* submission, 2006)

On one hand, the change of the strategic goal from 'developing female leadership' to 'including women in the computer and internet domain' marks a major shift in the role of information technologies: from being instruments, ICT are transformed into 'skills' and become the main goal ('prioridad') of the course of action.

On the other hand, gender-focused attention is transformed: from being the result of sensitization policies it becomes an intermediary (in the form of 'contents') that can attract women. Notably, if the (now digital) radio continues to act as a mediator, it is because it renders gender-related contents available: 'www.radiofalamulher.com ayudo a intensificar la estrategia de *traer* las mujeres para ese universo con la disponibilización de contenidos de radio con foco de género y derechos humanos en Internet'. If the Internet radio 'helped' – and is thus a mediator, there is no further specification about *how* contents – apart from being available – transported/caused ('traer') women to be included in the digital realm. This arbitrary restraint of the course of action constitutes the reason why we argue that gender and human rights-focused contents act as mere intermediaries. Summing up with a scheme:

Table 16 – *Proyecto Cyberela – Radio Telecentros*. Variations in the role of radio, ICT and gender commitment following the advent of digital media

	Before the advent of the digital domain	With advent of the digital domain
Radio	(Analogue) Mediator	(Internet radio) Mediator
ICT	(correspond to analogue radio)	(Seen as ‘skills’) Goal to be reached
Gender and human rights commitment	(Attention) Result of policies	(Becomes ‘Contents’) Intermediary

Furthermore, ferrying the radio-makers assemblage into the digital age requires more adjutants than before: the World Bank *Infodev* Program, the *Kellogg* Foundation and UNESCO thus sustained (‘apoyo’) the newly born *Red Cyberela* with technical facilities (computers, audio editing software, high bandwidth) and support (training, technical assistance). It is interesting to note that in this part of the entry form a clear symmetry exists between human (World Bank, *Kellogg* Foundation, UNESCO) seen as mediators and non-human (technical facilities) seen as intermediaries.

To fully catch the theory of action underpinning this project, there is still a consideration to make. The project’s great interest in the digital domain lies on the principle that ICT are causing major transformations in every field of human activity: ‘el surgimiento de las tecnologías de información y comunicación (TIC) ha transformado las relaciones sociales, la educación, el trabajo, la economía y hasta el comportamiento’. As a consequence of this vision, access to ICT is seen as a condition for development. To this considerations, the entry form associates statistical data depicting women as deeply excluded from access to ICT,¹⁷⁵ to the point that the United Nations and ‘all the indicators of human development’ have recognized women access to ICT as strategic. That is, the gender perspective is legitimized by appealing to statistical data: statistics provide the boundaries around which

¹⁷⁵ ‘Lo mas interesante es que mismo las mujeres siendo la mayoría de la población en el mundo (y también en la población brasileña) el perfil del usuario de Internet aún es prioritariamente del hombre blanco que habla el idioma ingles, tiene cerca de 35 anos, es de nivel universitario y de clase A e B. En Brasil, 72% de las mujeres nunca utilizo una computadora, 86% nunca tuvieron contacto con Internet y 30% no sabe lo que es. Esos datos son para demostrar que, así como se pasa con derechos y oportunidades (como educación, condiciones de trabajo, entre otras) – que las mujeres también en relación a las TIC necesitan buscar condiciones de igualdad’.

the group 'disempowered women' to which the project is addressed is made to exist.

The third project we are going to discuss in this subparagraph uses statistics as a source for setting up group boundaries, as well.¹⁷⁶ *The World Starts With Me* focuses on young Ugandans between 12 and 19, though. This project – which won the Golden Nica in 2004 – is a digital learning environment about sexual and reproductive health education and AIDS prevention. Its goal is double: to 'improve the sexual health of young people in East Africa while providing [computer] skills relevant to the job market'. Here, too, entering the digital age by acquiring computer skills is one of the objectives. Nonetheless, differently from the previous one, in this project ICT skills are not only a 'necessity to enter the job market', but also something that 'stimulates curiosity to learn more'. That is, computer skills are not merely conceived of as the point of arrival, but as a competence that triggers other actions ('stimulates').

The *World Starts With Me* program is really complex and gathers a lot of mediators, both human and non-human. There are five main groups involved in the project:

- the WSWM development and program teams; Butterfly Works and WPF, Netherlands -
- The individual schools, teachers and students who use / run the program in Uganda co-ordinated by SchoolNet Uganda -
- The SRH partners for knowledge and counselling back up; WIDE and FPA, Uganda -
- The SRH partner for online counselling; Straight Talk, Uganda -
- The NairoBits project, who run the pilot in Nairobi, Kenya. (*The World Starts With Me* submission, 2004)

Butterfly Works – a Dutch group that develops programs to create opportunities for young people in challenging circumstances – developed the project with local artists, health trainers and teachers supported by the *World Population Foundation* (WPF), a Dutch foundation that supports programs about sexual and reproductive health in developing countries. The *SchoolNet Uganda network* links and supports 52 schools and telecentres throughout Uganda with computers. It includes all types of schools: from male/female-only to mixed schools, from poor to rich, from urban to rural. Schools intervened not only as targets of the final product, but also at the pre-testing and pilot stages. WIDE is 'a small sexual health and training office of young Ugandan trainers'. The *Family Planning Association* (FPA) has clinics

¹⁷⁶ As it may be seen in Document 5 in Appendix, section 'Objectives'.

throughout Uganda that support people in SRH issues. *Straight Talk* provides online counselling on SRH. *NairoBits* is a digital design school for young people from slum areas in Nairobi founded by Butterfly Works in 2000. The trainers at NairoBits are themselves youth from the slums who became web-designers and teachers. NairoBits is in charge of translating ('migrate') the pilot program developed in Uganda into Kenya urban areas.

In addition to these, other mediators emerge when considering how WSWM works on field. First, the WSWM software environment itself is a mediator: on one hand, 'by promoting self-esteem and gender equality and by empowering young people with information and skills regarding their (sexual and reproductive) rights, the curriculum *supports* young people and in particular young women in helping them to safeguard and enjoy their own sexual and reproductive health'. On the other hand, the software is an adjutant for teachers, too, as it helps them to connect to their students: 'for teachers in schools it is new approach to education, that *gives them the chance* to actually reach their students and talk about important life issues'.

Second, teachers are mobilized also as professionals evaluating the project. In the 'statements of reasons' section, in fact, quotations by teachers that run the program in their classes are reported:

quotes: Alex Okwaput (teacher Bishops Senior, Mukono District and teacher co-ordinator of WSWM): "Using WSWM changed my whole teaching and style in my other classes". Alandi Marion (teacher at Moroto SS): "Do you know what? Guess, during our presentation today one of our students was so excited that he laughed and opened his mouth so widely that his jaws could not close back to normal. Can you imagine that?". (*The World Starts With Me* submission, 2004)

Third, students that have finished their course may act as facilitators for new students running the programme. Some of the trainers are themselves youth from the slums that have become web-designers. In the account this organizational model is labelled 'experiential learning' and is intended to transform former learners into mediators playing 'an active role in expanding the program to as many others as possible'. This form of knowledge transfer based on the proliferation of mediators is very similar to that of hackers

communities. As in FLOSS development communities, it is peers and not hierarchical figures that translate knowledge in an informal way.¹⁷⁷

What is striking in this project is exactly the number and assortment of the mediators mobilized to reach the goal of 'giving young people self confidence and control over their own lives'. Public schools, foundations, clinics, NGOs, counselling services are assembled with software, students, artists, peer facilitators, people from the slums in an aggregate that blends formal institutions with informal ties.

The last case we are going to address is *canal*ACCESSIBLE*, a project dealing with the creation of geo-referenced cartographies of urban places presenting obstacles for disable people.¹⁷⁸ The project – which was awarded the Golden Nica in 2006 – allows forty movement-impaired people to send pictures (with audio/textual comments) of inaccessible locations in real time to a website by means of mobile phones equipped with cameras. Every multimedia item is geo-referenced, so that it can be included into a map of the city, which is available online.

Actually, the system have already been implemented in Mexico City, involving taxi drivers; in Lleida y León with young gipsies; in Madrid with prostitutes. It does not address only disable people, but discriminated groups at large that lack possibilities of self-expression. According to the project's entry form, in fact, having the possibility to achieve a means for self-expression allows the groups to by-pass representations about them given by mainstream media:

El proyecto se basa en la posibilidad de dar voz y presencia en Internet a colectivos que sufren discriminación. Se trata de facilitar tecnología móvil de comunicación a estos grupos para que puedan expresarse en Internet, sin tener que esperar la visión que de ellos nos dan de los medios de comunicación preponderantes. Son los propios afectados quienes nos explican quienes son y cuales son sus expectativas.
(*canal*ACCESSIBLE* submission, 2006)

¹⁷⁷ See discussion about FSF below. Even if we cannot account here for the vast literature dealing with ICT and pedagogy, it should be noticed that the WSWM's approach to teaching sounds close to pedagogical theories underpinning the so called 'blended-learning' model. The 'socio-cultural constructivism' paradigm, in fact, extends the insights of constructivism into 'digital pedagogy' and focuses on the situated, interactive and informal components of the learning process. See Bruner (1990); Gardner (1983); Papert (1980, 1993).

¹⁷⁸ The submission form is reported in Appendix, Document 6.

Mainstream media are thus (anti-)mediators that translate the discriminated groups into their representations. On the contrary, mobile devices cannot be said to be mediators in their own right. They do not affect the output in any way, but are seen as mere channels transporting images from the urban space to the Internet website.

More multifaceted considerations are required when it comes to Internet and the Web. Throughout the entry form Internet is seen as the final platform where maps are published. Under this perspective, it acts as an intermediary, whose presence does not trigger further actions. However, things change in the 'Lessons learned' section:

cuando un colectivo discriminado que no esta acostumbrado a ser escuchado, obtiene la posibilidad de expresarse en Internet mediante teléfonos móviles, lo primero que sucede es que no encuentra que contenidos comunicar. Pero paulatinamente cada colectivo ha ido encontrando los temas que mas le afectan y también se ha organizado en grupos emisores dedicados a cada canal consensuado en las reuniones periódicas. Al final siempre han conseguido articular y publicar canales temáticos específicos del colectivo.
(*canal*ACCESSIBLE* submission, 2006)

Here, it is the possibility of self-expression on the Internet that transforms groups by stimulating not only the production of contents, but also the acknowledgement of the most pressing concerns and the organization of the editorial staff. It should be noticed that this theory of action – it is the possibility to access a medium as producers that triggers transformations – is based on a mass-media pattern of interaction where 'self-expression' is usually hampered by the one-to-many form of transmission.

Apart from mainstream media and (partially) Internet, there exist one other mediator, namely the Municipality of Barcelona, which relies on the cartographies in order to identify and remove the obstacles signalled. Generally speaking, this project shows a rather short chain of action. Although it recognized the transformative potentials of mass-media, it conceives of ICT, and mobile phones in particular, mainly as intermediaries.

Summing up the results of the observation up to this moment, there emerge two macro-types of digital communities aiming at empowering disadvantaged populations.

4 Results and Discussion

Table 17 – Summary of the theories of action associated with ‘empowerment’

	Tonga.On-line	Akshaya	Proyecto Cyberela – Radio Tel.	The World Starts with Me	canal* ACCESSIBLE
Source of boundaries	Cultural heritage and traditions (Tonga people)	Geopolitical/ administrative (local communities in Kerala)	Statistics (gender)	Statistic (age and, partially, gender)	Social discrimination
Role of digital ICT	Mediators (Alpha Smart triggers ‘msg and digital reflections’ creating associations with dispersed actants)	ICT-skills and data repository as goals. Wireless net, computers, scanners, etc. as intermediaries	ICT-skills are goals. Technical facilities as intermediaries	Pc as intermediary (may be substituted). But ICT-skills as a competence. WSWM is a mediator	Mobile phones and digital photos as intermediaries; Internet alternatively as mediator or intermediary
Role of other technologies	Music as mediator that translates the cultural heritage into the digital age	/	Radio as mediator	Low-tech objects (i.e. paper&pencil, local materials) as intermediaries	Broadcast media as (anti-) mediators
Mediators/ intermediaries	Many mediators, agency chain extends in many directions	One mediator, some intermediaries. Very short agency chain	Few human mediators, some non-human intermediaries	Many mediators	Three mediators, some intermediaries
Professionals	Journalist	/	/	Teachers	/
Relationship Addresser/Addressee	No distinction	Clearly distinct (Service delivery business)	Fairly distinct after the advent of digital media	Only during course: students who finish it become facilitators	Fairly distinct: ‘disadvantaged groups’ and project promoters do not blur

The source of boundaries is a crucial element in determining the theory of action of a project and the nature of the resulting community. As a matter of fact, projects that address disadvantaged groups whose existence appeals to administrative or statistical boundaries display narratives of empowerment according to which target groups are pushed to acquire ICT skills in order to

enter the information age. According to this narratives, ICT skills and access to the digital domain are conceived of as the final goal. The relationship between digital technologies and social ties is often one of cause-and-effect: access to technical facilities (and occasionally literacy courses) is supposed to immediately lead to better living conditions. As a consequence, the chain that transports agency is very short, with few mediators and some intermediaries. Paradoxically, in these accounts ICT themselves are conceived of as 'technological facilities' that act as intermediaries.

Furthermore, in these accounts the roles of Addresser and Addressee are easily distinguishable: there is one entity – the designer of the project – that acts as sender in a communication process (classes, service provisioning, etc.), and a group which is supposed to be the receiver of this process. As a matter of fact, in these cases group identities pre-exist to the course of action and boundaries are stabilized: the community has already been black-boxed. In *Akshaya*, for instance, there are entrepreneurs, who implement the e-centres, and the local communities, the target group which benefits from the activity of the entrepreneurs. Similarly, in *Proyecto Cyberela – Radio Telecentros*, after the advent of digital technologies of information the role of Cemina as core team got distinguished from that of the radio-makers who stopped to act as local leaders and became addressees of Cemina's classes.

The other model is exemplified by the *Tonga.Online* project. It does not deal with statistical boundaries, but rather borrows its source of identity from the cultural heritage. Here, ICT are seen as one of the many types of mediators participating in the course of action. Mediators, in fact, are not only the human beings, but also digital devices and traditional music. Every mediator introduces a bifurcation in the course of action and triggers new participants. The chain that transport agency extends in many directions and includes also a journalist mobilized in order to make the group exist. As a matter of fact, the 'empowered' community that emerges is the result of all these transformations. As a consequence, in this dynamic techno-social assemblage distinguishing the project designer from the target becomes meaningless: community is an open gathering of heterogeneous elements.

Lastly, *The World Starts With Me* locates among these two types of digital community. Like the first type, it appeals to statistics in order to legitimize the focus on disadvantaged youth and conceives of computers and technical facilities as intermediaries that may be replaced by paper and pencil. On the other hand, many mediators – both human and machinic, institutional and informal – are involved and the acquisition of ICT skills is not

seen only as a goal, but as a competence that triggers other courses of action. In addition, actors undergo transformations: through the experiential learning model, former students may become peer facilitators, that is, mediators in their own right.

4.3.3 'Free' as in 'freedom to proliferate': when digital community becomes movement

Distinguishing different typologies of digital communities becomes less straightforward when it comes to projects that appeal to freedom as the source of their action. However, working jointly with Latour's list of traces left behind by group formation and Greimas' actants¹⁷⁹ turns out to significantly facilitate the observation of differences.

This is the case of projects like the *Electronic Frontier Foundation*, the *Free Software Foundation* and *Telestreet/New Global Vision*. All these projects appeal to *freedom* as the source of their boundaries and entail some political dimension of their action. However, looking carefully at their entry forms, one could notice some (at first sight) minor differences that nonetheless lead into different territories.

For the *Electronic Frontier Foundation*¹⁸⁰ – champion of the independence of cyberspace from the brick-and-mortar world, as we have seen in paragraph 1.1.1 – 'freedom in the networked world' acts as a self-legitimizing concept whose significance is to be taken for granted. As a matter of fact, 'to defend freedom of expression, innovation and privacy on the electronic frontier' is the Foundation's objective, carried on in the name of the 'public interest in digital rights on a global level'.

For the *Free Software Foundation*¹⁸¹ freedom is crucial, too. 'To achieve software freedom to cooperate' is, in fact, its objective. However, a slightly visible difference with EFF may be noticed in FSF's account. For FSF the appeal to freedom alone does not legitimate action. FSF does not address freedom as an abstract concept, but as the practical 'computer users rights to use, copy, study, modify and redistribute computer programs'. As a consequence, freedom is not so much valuable in itself, but because it is a condition for cooperation and community making:

¹⁷⁹ See paragraph 2.7.

¹⁸⁰ The Electronic Frontier Foundation won an Award of Distinction in 2007. Its submission form is reported in Appendix, Document 7.

¹⁸¹ Richard Stallman's Free Software Foundation won an Award of Distinction in 2005. Its entry form is reported as Document 8 in Appendix.

FSF's founder, Richard Stallman, had participated in the cooperating community of the 70s while working at MIT. When this community collapsed under pressure for commercialization, he decided to build a new community of cooperation. However, with the proprietary software that had become the norm in the 80s, cooperation was illegal or impossible. To redistribute the software verbatim is illegal; to improve it without a copy of the source code is impossible. To have a community would require replacing that proprietary software with "free software"----software that users are free to change and redistribute (and run). (*Free Software Foundation* submission, 2005)

Therefore, community and cooperation are the values that trigger FSF activities and around which boundaries are rendered durable.

Even more explicitly, the *Telestreet* submission form¹⁸² conceives of 'freedom to produce communication' as the 'necessary condition for the development of an active, critic and conscious way of being citizen'. Here, the goal is 'creating relational networks and active citizenship through an integrated use of communication means': it is appeals to active citizenship – and not to freedom alone – that constitute the boundaries around which the community takes shape.

This differentiation between a vision of freedom for freedom's sake Vs. freedom as a condition for cooperation or active citizenship could look like splitting hair. Nonetheless, it leads the observation to pay even more attention to unnoticed differences. For instance, another distinction concerns the anti-groups mentioned in the accounts. While for EFF the opponent that limits freedom is the United States Secret Service,¹⁸³ Stallman's early community 'collapsed under pressure for commercialization' of the software and *Telestreet*/NGV tend to identify the anti-subject with mainstream

¹⁸² *Telestreet* is the Italian network of independent micro TV stations air-broadcasting on a neighbourhood level. *Telestreet* has succeeded in integrating low- and high-resolution technologies: street TVs air-broadcast on the so called 'shadow cones' and organize, share footage and take decisions on the Web. *Telestreet* won an Award of Distinction in 2005 together with *New Global Vision*, the Italian video archive born during the G8 in Geneva in 2001 that publishes and distributes independent footage via peer-to-peer networks. *Telestreet*'s and NGV's entry forms are reported in Appendix (Documents 9 and 10).

¹⁸³ 'The Electronic Frontier Foundation was founded in July of 1990 in response to a basic threat to free expression. As part of an investigation into "hackers," the United States Secret Service seized all electronic equipment and copies of an upcoming book from a games book publisher named Steve Jackson Games, even though the business had no connection to the "hacking." When the computers were finally returned, employees noticed that all of the electronic mail that had been stored on the company's electronic bulletin board computer had been individually accessed and deleted.' (*EFF* submission, 2007)

broadcasting networks.¹⁸⁴ That is, while EFF re-enacts the traditional cyberculture's opposition to the Nation-State, FSF and Telestreet/NGV attribute the reduction of freedom to market logics.

Even if they seem negligible, these differences take another relevance when considering the type of mediators involved. To proceed along this way, we are now going to take into account each case separately and to compare them all only at the end of the paragraph.

Looking at the theory of action underpinning its account, EFF does not renounce to a fairly deterministic vision of the relationship between technology and society: 'ICT are transforming society and empowering us as speakers, citizens, creators and consumers'. Starting from the consequent conviction that freedoms in the electronic environment must be defended, EFF re-enacts the dichotomy between the digital domain and formal politics ('the power of the Net can trump the power of vested politics') and invokes a 'community of educated people [that] can help influence technology policy on the electronic frontier and make the digital world safe for free expression and innovation'.

Online informational resources provided by EFF are mediators contributing to the gathering of a similar community. As a matter of fact, resources channelled through digital technologies endow the potential target population with knowledge (*'informs people'*). Additionally, informational resources are used by EFF itself to *'identify, discuss, and then act* on the critical digital freedom issues', that is, they allow EFF staff to acquire knowledge and competences to action.¹⁸⁵

On the other hand, information technologies (blog posts, podcasts, online video projects, the newsletter, etc.) do not participate in this course of action but as mere intermediaries, channels of transmission that do not

¹⁸⁴ 'The Italian community of media-activists immediately felt the need to create a new tool to publish and share all the video materials that has been produced after those terrible days, video and images which tells other stories from mainstream media, as well as documentaries which has been censored by official TV broadcasts.' (NGV submission, 2005). 'Over 60% of Italians access information exclusively through two mainstream broadcasting networks (Rai and Mediaset), which, as a consequence, have the power to mould people's imaginary. [...] Thus, within such flattening of the General Intellect, mainstream television rules unchallenged.' (Telestreet submission, 2005)

¹⁸⁵ Readers probably remember that in paragraph 2.2 we noticed how ANT's approach to agency as distributed action *in potentia* recalls Greimas' notion of 'competence' as a 'being-able-to-do' and a 'knowing-how-to-do'. This case is a good example of how non-human actors (informational resources) can influence a course of action by providing cognitive and practical competences.

activate further action but just transport information: 'EFF works through our website, blog posts and podcasts, online video projects, "action alerts" that encourage personal political involvement, our email newsletter, the promotion of debates and other interactive events, and online guides and other information for writers and artists who want to express themselves digitally'. Even when it is pointed out that 'the website remains the home base for coordinating and disseminating information to our community', it is not clear *how* the website is supposed to transform the input (information). Also *YouTube*, *MySpace* and social networking sites that have been used to 'increase the reach of the community' are seen as intermediaries that can just make EFF message available to a wider audience. The only exception are the 'action alerts' that endow users with a will to act ('*encourage* personal political involvement').

While the entry form looks at the 'community of educated people' as resulting from and not preceding the course of action, EFF itself appears as a stabilized institution. There are different levels of participation: EFF staff (made of coordinators, activists, 'techies', artists, policy analysts, attorneys), EFF members, newsletter subscribers, users of the 'Action Center'. While being open to subscribers, a similar structure quite easily allows to mark the boundaries of the EFF assemblage, so that an external Addressee of its action – 'those who create and communicate in the electronic world, [...] those who are interested in technology policy covering free expression, innovation and privacy' – may be devised.

Compared to EFF, FSF shows a larger heterogeneity of mediators and has no intermediaries. Actually, few technical facilities are mentioned in the FSF's entry form. Rather, what strikes in this account is the absolute fusion of social and technical aspects. The GNU operative system, for instance, has been developed in order to react to the monopoly of proprietary software that – making cooperation illegal or impossible – used to hamper community making efforts: 'GNU is the only operating system ever developed specifically for the sake of giving computer users the freedom to cooperate'.

If GNU is a mediator, it also activates other mediators. The FSF, for instance: it was founded in 1985 'to raise funds for GNU development, and for promoting users' freedom to share and change software'. Moreover, FSF acts as a trusted copyright holder supporting a wider global community of developers, a 'legal enforcer of the freedoms individuals in the community want protected as their work is distributed'.

Another crucial actor is the kernel Linux that in 1992 was associated with GNU, thus creating the first completely free operating system. If Linux could be integrated into GNU, it is because it was 'inspired by the community that we built', that is, it was released under the GNU General Public License. As a consequence, the number of mediators includes also those licenses (GNU GPL, GNU LGPL, GNU GFDL) that 'guarantee the freedom to copy, modify, and distribute the software and the manuals released under them'.

Of course, the GNU project owes much of its existence to the 'thousands of volunteer developers around the globe'. But the peculiar characteristic of this project is that also every software user is a potential mediator, since she can write code or documentation, improve it, engage in political activism or simply diffuse knowledge about the free software:

Any free software user can contribute to a project, regardless of that user's educational background, socioeconomic status, or geographical location. All that matters is the ability to write code or documentation and the willingness to share the result and what was learned in its creation. Volunteers who don't write code or documentation help by engaging in political activism and telling other people about free software, using the structures and campaigns run by the FSF as their focus. (*FSF submission, 2005*)

It is evident from this description how in the FSF's entry form the boundaries of the community blur to the point that it is difficult to distinguish an outside. The proliferation of mediators is potentially infinite, as infinite is the number of potential users/developers of free software. This point is explicitly addressed in the 'statement of reasons' section:

The GNU Project, through developing a free software operating system and the GNU General Public License, built the free software community as we know it today. Just think about all of the various communities on the Web---most, if not all, were made possible by the ethical and practical idea of free software and the freedom to cooperate. Wikipedia, last year's winner of this prize, is licensed under the GFDL. MediaWiki, the software it runs on, is released under the GPL. These projects, like many others, draw their contributors to a large extent from the free software community. We cannot claim credit for all of the projects out there and all of the work that went into them, but our role in intentionally building this community, in writing the licenses that these projects predominantly use, and in providing the space for this amazing growth to continue, made it possible to do them. (*FSF submission, 2005*)

With the Free Software Foundation, we can say that the community becomes a movement. With this, we do not mean that it is no longer an assemblage, but rather that it is the quintessence of a techno-social assemblage that strives to remain fluid, to not be black-boxed. This is

possible because the 'ethical and practical ideas' did not remain abstract, but got embodied into software and cooperation procedures that may be unceasingly modified. If we consider that GNU started in January 1984, one might affirm that free software is coeval of ANT's first insights.

Conversely, with Telestreet the techno-social assemblage as a movement is re-enacted in early 2000s by using low- and high-resolution technologies. Here, too, the overcoming of the distinction between developer and user is pursued as the goal of the initiative, but it is adapted to the sender/receiver figures of pre-digital broadcast media.

Telestreet tactically partakes reality, and by so doing every citizen reaches the opportunity to turn from passive viewer into an active subject of an utterance. Actually, Telestreet's approach to communication induces non-professional people to experiment and create new spaces of community, in the neighbourhood as on the Web. Indeed, it is the precondition that the relevant technologies are widely accessible that allows the *do-it-yourself* concept to spread and hundreds of micro TVs to raise up. (*Telestreet* submission, 2005)

As for FSF, by providing an 'approach to communication' Telestreet itself is a mediator that 'induces' someone to do something, helped by the high accessibility of 'relevant technologies'. As a consequence, the boundaries between senders and receivers blur, since everyone may set up her own TV station adapting the Telestreet model. Given the reusability of the know-how and the low-cost of the technologies needed, the number and typology of potential mediators is infinite. For instance, public administrators 'implemented the Telestreet project by involving their community members'.

But Telestreet activates also other types of actors. Since broadcast transmissions lacking governmental licenses are illegal, some mediators are borrowed from the range of law. First, Telestreet invokes Article 21 of Italian Constitution on freedom of expression in order to claim the constitutionality of an initiative that aims at asserting the right to access media for community purposes. Second, some deputies are involved with the role of introducing the issue of public access media into the Italian Parliament's agenda.

Other actors come, of course, from the range of technology. At first sight this project's theory of action looks like a multimedia version of the technologically deterministic position that sees access to media as directly empowering individuals. 'The result is the birth of a citizenship that becomes active as soon as it takes over the most passive-making communicative tool [television], the one where political and symbolic strategies of Power are

greatly at stake in Italy'. Nonetheless, things get more complex when one considers the specificity of the media involved.

On one hand, when taken as single entities, media are black-boxed, seen as mere channels to transport information. Satellite television and Web, for instance, are conceived of as intermediaries. Partner *No War TV* satellite television is seen as a channel to merely 'transmit' Telestreet's video productions, without affecting the final product. Similarly, the website is described in technical and functional terms, but no considerations are made on *how* it shapes relationships.¹⁸⁶

On the other hand, media are conceived of as mediators either when combined with other media or when disassembled into their components. For instance, Internet is seen as a mediator that enables social networks when its decentralized nature is combined with the socializing power of the DIY television: 'it is just combining these two means that it is possible to create social networks'. Similarly, once it has been reverse-engineered by turning the receiver into a transmitter, broadcast television stops to be 'a tool for exclusion' and is conceived of as a powerful mediator. It '*stimulates* creativity of people coming from widely different social classes', '*enables* people to take advantage of their rights', 'gives the chance' to passive users to turn into 'active subjects of communication', '*bridges* the Digital Divide regarding age as well as gender'.

As a matter of fact, if the black box par excellence may act as an agent of transformation, it is because it gets resolved into its elements: transmitter,

¹⁸⁶ 'At the moment, Telestreet's Web site presents some sections: news (where everyone can publish information regarding the mediascape, the Telestreet network, '), forum (where users can discuss about legal, technical, political, creative and organisational issues), events calendar, street TVs' database, legal and technical schedules, FAQ, Telestreet open mailing list. Moreover, some new utilities are being implemented: self-moderated discussion area and Web site for every street TV (blog), integrated system for video files upload and sharing, video play list for the TVs programming, xml-developed syndication with other news portals on media-activism (Italian and international, as well), convergence between forum and mailing list, creation of local mailing lists, database for collecting and sharing videos coming from independent areas.' (*Telestreet* submission, 2005)

modulator, amplifier, 'shadow cones', cameras, VHS player, mixer, etc.¹⁸⁷ If having access to media is sufficient for citizens to become active, it is not because ICT deterministically 'empowers' them, but because they acquire competences through the practice of manipulating, hacking and reverse-engineering media technology. In other words, the do-it-yourself ethics itself acts as a mediator that embeds concepts into artefacts in a course of action whose ultimate goal is transforming audience into citizenship.

The following table summarizes the observations made up to this point.

Table 18 – Comparison among EFF, FSF, Telestreet/NGV

	EFF	FSF	TELESTREET/NGV
OBJECTIVE	'To defend freedom of expression, innovation and privacy on the electronic frontier'	'To achieve sw freedom to cooperate for everyone'	To create relational networks and active citizenship through an integrated use of communication tools
OBJECT OF VALUE	Public interest in digital rights on a global level	Computer users rights to use, copy, study, modify and redistribute computer programs	Citizens right to access communication channels
SOURCE OF BOUNDARIES	Freedom in the networked world	Community and cooperation (software freedom is a condition for this)	Active citizenship (Freedom of expression is a condition for this)
ADDRESSER	Different levels of participation: EFF staff (coordinators, activists, techies, artists, policy analysts, attorneys), EFF members, nl subscribers, users of Action Center	Richard Stallman made it start. Then it proliferated through users and developers (see mediators)	Orfeo TV started it, but everyone can set up a street TV. Participation is open and the aim is to overcome the distinction between sender and receiver

¹⁸⁷ 'The project consists of a very simple and cheap transmitter-modulator-air signal amplifier transmitting images by means of an antenna. It takes only 0,07 watts and covers a 300 meters-wide area. We have looked for a very simple technology because we want it to be accessible for as many people and groups as possible. Therefore, it is possible to set up a street television with common instruments anyone may have at home - a digital video camera, a PC, a video recorder. [...] Telestreet does not occupy other television's channels, but uses what we call 'shadow cones', frequencies granted to commercial networks but unusable because of territorial obstacles.' (*Telestreet* submission, 2005)

4 Results and Discussion

ADDRESSEE	'Those who create and communicate in the electronic world', those who are interested in technology policy covering freedom	see mediators (none is only addressee)	see mediators (none is only addressee)
ANTI-GROUPS	United States Secret Service	Pressure for commercialization. Proprietary software	Two mainstream broadcasting networks (Rai and Mediaset)
ADDITIONAL MEDIATORS	'Action alerts' , encourage personal political involvement. Resources inform people; are used to <i>identify, discuss and act</i> on critical issues. EFF as supporter and enabler of global digital community.	GNU OS gives computer users the <i>freedom</i> to cooperate. FSF itself <i>raises funds</i> for GNU, <i>promotes</i> users freedom, is trusted copyright <i>holder</i> . Volunteer developers from around the world . Kernel Linux ('inspired by the community that we built'). Users : every software user is a mediator. Licenses <i>guarantee</i> freedom.	Telestreet <i>induces</i> non-professional people to experiment. Users are mediators. Article 21 of Italian Constitution invoked to assert Telestreet constitutionality, deputies mobilized. Media when combined or disassembled : Internet + DIY TV <i>stimulates</i> creativity, <i>gives chance</i> to become active, <i>enables</i> people, <i>bridges</i> gender and age divide. DIY ethics
INTER-MEDIARIES	website, blog posts, podcasts, online video projects, newsletter, online guides. YouTube, MySpace, social network sites	/	Media when taken as single channels (satellite Tv, website)

In all the three cases analyzed, the digital community participating in the competition is part of a wider global community pursuing respectively freedom in the digital realm, free cooperation in software development, freedom of expression as a condition to promote active citizenship. Nevertheless, it should be noticed that for EFF freedom is something to be 'defended', for FSF a value to 'achieve', for Telestreet a right to struggle for. That is, according to the EFF account freedom is something achieved in the past that is to be preserved. According to FSF and Telestreet entry forms, conversely, freedom is a process associated with the proliferation of

mediators, that is, users that adopt the DIY approach and modify technology according to their needs.

Furthermore, while EFF addresses targets that are external to its multi-level organization, by including users as mediators FSF and Telestreet bring openness to its extreme consequences, to the point that the boundaries of the community liquefy into a movement. This is possible because ideas are embedded into objects that can be modified by users themselves: code and licenses in the case of FSF, transmitting technology in Telestreet.

4.3.4 The Web as mediator. Web 2.0 tools and user-generated-contents

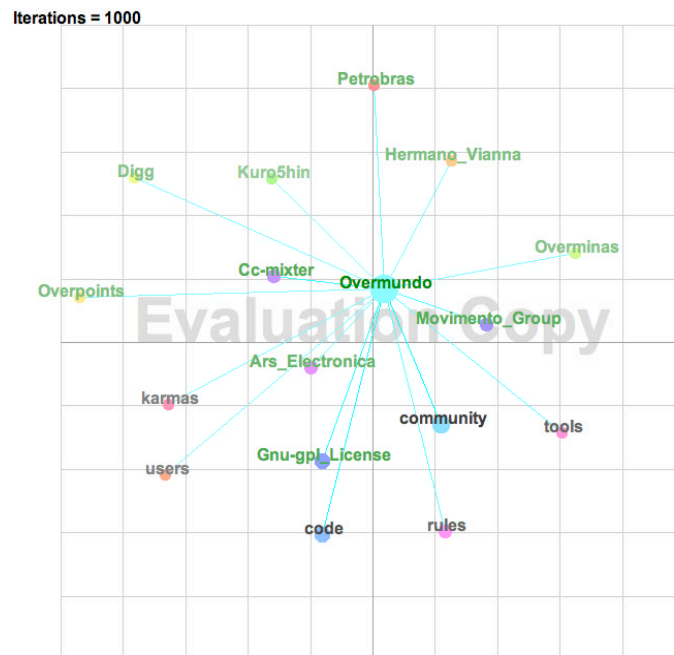
The novelty introduced by projects like FSF and Telestreet/NGV deals with the fact that users and technological tools enter the course of action as mediators in their own right. Another project that works in this direction is *Overmundo*, a Web 2.0 platform that won the Golden Nica in 2007. Its goal is 'to promote the emergence of the Brazilian culture, in all its complexity and geographical diversity'.¹⁸⁸ This need comes from the lack of adequate coverage of local cultural scenes by mainstream media that are focused primarily on the two largest cities, Rio de Janeiro and Sao Paulo. Using Web 2.0 tools, artists, journalists, bloggers and cultural groups from throughout Brazil post articles, pictures, movies, music, thus getting over isolation and achieving national visibility.

This project characterizes itself for the highly diverse mediators involved in the emergence of the *Overmundo* community. The map below summarizes the actors identified during the observation of the entry form; green labels indicates proper names.

¹⁸⁸ *Overmundo*'s entry form is available as Document 11 in Appendix.

4 Results and Discussion

Figure 30 – Visualization of the Overmundo network of mediators



First of all, if users and software enter the scene as mediators, it is in order to solve the main problems the designers of a website dealing with Brazilian culture at large have to address. First, the fact that vibrant cultural scenes scattered throughout the country proliferate in isolation; second, the ‘centre Vs. periphery’ perspective of mainstream media, as if peripheries were unable to self-represent through their own means. The designers thus decided to implement collaborative Web tools fostering user-generated and controlled contents, so that ‘artists, journalists, bloggers, cultural groups and anyone at large can provide their own views of the Brazilian culture, and also about cultural scenes in their own regions’. However, if the goal is that 100% of contents be produced and edited by the community, the question on how to ‘achieve a quality control system’ arises. To answer this question, software becomes strategic in order to shape the procedures whereby users can post, decide the priority of items on the homepage, evaluate contributions, determine the duration of a post.

What types of technological tools should be used to achieve this goal? Should the content be freely editable such as the Wikipedia? Should it be edited by a centralized editorial board, such as the Korean newspaper OhMyNews? In order to answer these questions, Overmundo had to keep in mind very clearly what was the problem it was trying to solve. The choice of one particular model instead of another had to be made keeping in sight the specific goals to achieve, and the true possibility of building a comprehensive community pursuing the same goals. (*Overmundo* submission, 2007)

As a mediator, the Overmundo code triggers other mediators, in turn. First, *Kuro5hin* 'inspired' the 'Editing Line' tool. Here, items are quarantined for 48 hours in order to receive suggestions by other users. At this stage, authors can modify the item accordingly. Second, after this period items go to the 'Voting Line' where users can vote whether they like the article. The voting system is derived from that developed by *Digg* and relies on 'Overpoints', points associated to positive votes. The position of an article on the website is determined by the amount of Overpoints. Third, users are sorted and their votes are weighted on the basis of a reputation system that relies on 'Karma' (reputation points). Users with higher 'Karmas' have more Overpoints and thus more editorial power.

As a matter of fact, *Kuro5hin*, *Digg*, Overpoints and Karmas are all mediators that add something to the initial input, so that the outcome (the article published in the end, but also the resulting community) is unpredictable. This case exemplifies very well Shirky's assert that 'social software is political science in executable form'.¹⁸⁹ Here, code addresses political concerns because it establishes the procedure whereby the socio-technical network can be assembled.

Last consideration about software, the Overmundo code is released as free software and is undergoing a process of dissemination. If other institutions – like the national Forum for Public Safety and iCommons – may re-use it as part of their ongoing projects, it is thanks to a mediator we have already met when discussing about the Free Software Foundation. Overmundo source code, in fact, is released under GNU-GPL License.

What is striking in this project is that the community is only the final result of a very long chain of actions. Besides the procedures introduced by software, in fact, other methods have been implemented by the designer group (named as 'Group of Ideas Movimento') to build the community, to 'create the best possible environment for collaboration and participation'. At the beginning of the project, twenty-seven contributors (one in each of the Brazilian states) were hired by Movimento in order to write periodically on the website about the culture of their own states. 'Overminas' and 'Overmanos' were also in charge of activating ('agitating and energizing') other users in their states to start contributing to the website. In addition, this initial coherent group created the 'rules of the game', the quality standards to which the subsequent contributions adapted.

¹⁸⁹ See paragraph 2.1.

Taking a step backwards, other fundamental mediators can be retrieved from the project history. The first is Hermano Vianna – one of the members of Group of Ideas Movimento – an anthropologist who was asked by Minister of Culture Gil to design a project that would ‘integrate cultural movements and scenes from all over Brazil’. Then, when Petrobras asked Vianna to develop a website where all the cultural productions sponsored by Petrobras could be stored, the ‘yet unexplored total potential’ of the previous project turned out to be precious. Instead of the digital magazine required by Petrobras, Vianna and Movimento, in fact, proposed a user-generated-content focused website, precisely Overmundo.

Lastly, the entry form mentions also current and future projects. By associating with CC-Mixer – the remix platform built by Creative Commons – Overmundo is launching Overmixer, a remix contest between Brazil and South Africa. Since Overmundo’s budget ‘does not include funds for money prizes for contest’, the contest would need special funds. Here is where the account gets to include Ars Electronica itself in its course of action: ‘we would be pleased and honoured to announce that the funding for this second remix contest was provided thanks to the Ars Electronica prize’. Furthermore, the Ars Electronica prize is seen as a mediator to activate (‘provide initial incentives’) also the free software community:

One possibility is to use the prize as seed-money to hire someone from the free software community, in order to become an ‘overcoder’, that is, to be responsible for a certain period of time for gathering a small community of programmers that could then help developing the Overmundo code. As mentioned above, one of the things that did not work as expected is the fact that few programmers ended-up making contributions to the Overmundo code. Since the Overmundo budget does not include funding for supporting decentralized programmers (we thought this would happen naturally, and it did not), the Ars Electronic prize funds could be used in order to provide initial incentives for this new community to start being built. (*Overmundo* submission, 2007)

Summing up, by deploying a large number of mediators, the Overmundo submission form describes in details all the actions that brought to the emergence of the Overmundo community. This project, in other words, shows how the digital community is the result and not the condition of distributed agency. Furthermore, in this project mediators pertain to a wide range of domains: from oil business to anthropology, from politics to journalism, from free software to art festivals. For its richly articulated set of mediators, this submission form could not do anything but win a prize.

There are other two projects that focus on user-generated contents: *dotSUB* and *Open Clothes*. The first won an Award of Distinction in 2007, the second in 2004. Actually, dotSUB does not aim at creating a community, but is a browser-based tool thought to sustain community-making efforts at large. Nevertheless, this does not mean that the entry form retains from expressing a theory about community-making. On the contrary, the project's theory of action is very explicit: 'by putting seamless video subtitling technology into the hands of individuals, dotSUB tools make stories from every culture accessible to every culture, fostering intercultural experience, communication, and connection'. In other words, dotSUB itself is a mediator that translates stories from one culture into another one.

Actually, dotSUB is a Web-based facility enabling videos to be subtitled into any language without the need to download them. It is based on a publicly accessible database of .sub files (extension used to indicate text files containing subtitles). While the video can reside everywhere, the subtitle text associated to it is stored in the dotSUB servers, it can be translated into any language by dotSUB users and played together with the video.

This project objective is to facilitate cross-cultural communication by means of visual language. 'Video' itself, in fact, is seen as an agent of change: 'video has become the creative medium of choice. It is transformative and unique. It encourages a kind of creative energy that fosters new thought and new creativity and new pathways for identifying and solving problems'. However, in order to allow video to express its universal creative potential on a global scale, the problem of footage availability in multiple languages must be addressed. Here is where dotSUB facilities enter the chain of action by providing 'tools that change language barriers into cultural bridges'.

Lastly, *Open Clothes* aims at creating a network of producers, users and contractors in the garment industry. This project shows the appreciable effort to strip the notion of community from any communalistic intent. It in fact defines the community as a 'clothes production system' involving tailors ('those who make' clothes), users ('those who wear') and professional contractors who economically support the system and extract value from it. To explain the project's idea of community, the entry form uses the metaphor of a tree: tailors constitute the trunk, users are the branches and contractors the roots:

"Open-Clothes.com" community is compared to a tree. First, wooden "trunk" is the making-clothes network of "those who make." The function of community is substantial

from information exchange to work sale as if annual rings may be piled up. The network which supports activity from beginners to experts in connection with making dress as an individual is formed. Then, it is a "branch" bears fruits, the works born from the network of "those who make". "Those who wears" gathers in quest of "clothes with stories." [...] Moreover, a "root" is required to suck up nutrition and send to a trunk. The cooperation with the professional contractor who become a foundation supporting activity of "those who make" is indispensable to making clothes. Then, in Open-Clothes.com, the common production system of "those who make", and "the contractors who make" is built. (*Open Clothes* submission, 2004)

The boundaries of this community are constituted by a common interest on clothes: 'Clothes are the themes in connection with all people'. Creating an assemblage to make and buy personalized clothes is the main goal of this project that relies on 'technology to make the clothes environment' open. However, the account mentions the way technology works to assure this openness only in terms of cause-and-effect, as one of ICT inducing the aggregation of individuals. Therefore, while showing how human actors can contribute to the making of the community, no space is left to less superficially explain how technological artefacts work, nor to describe how this assemblage is made durable.

4.4 Towards a Classification of Digital Communities

Now that a deeper observation of the accounts has been carried on and the relationships among elements participating in techno-social assemblages have been flattened,¹⁹⁰ it is time to address what was defined an implicit controversy over the nature of digital communities. As already explained, a similar controversy is implicit because there seems to be a wide agreement on the expression 'digital/online/virtual community', even if very different techno-social aggregates appear to be indicated with that label. Differences become visible only once accounts are put into comparison, as in the case of an analysis of the entry forms submitted to a competition for 'Digital Communities'.

As a matter of fact, the cases that have been analyzed in this third paragraph of chapter 4 show considerable divergence as far as their goals, source of boundaries and theories of action are concerned. As a consequence, two questions arise. Is it nonetheless possible to find some unifying features that are valid for all the cases taken into consideration, so

¹⁹⁰ With 'flat' ANT means not endowed with a source of initiative, a direction, a determination. In other words, 'flat' refers to elements that do not participate in a relationship of cause-and-effect.

that an (at least general) definition of 'digital community' may be devised? Is it likely that some principles can be found, so that some portions of the social magma can be solidified and its complexity reduced?

To the first question, we are afraid we are forced to answer with a refusal: the cases analyzed are so heterogeneous that no ecumenical definition may be inferred. In our sample, the features typically used to define online communities are present in some cases and absent in others. For instance, not all projects are non-profit initiatives:¹⁹¹ Akshaya, dotSUB and Open Clothes are business-oriented projects. Similarly, many of the projects analysed do not limit themselves only to online interaction,¹⁹² but rather include also physical interaction as a key component. While The Free Software Foundation and The Electronic Frontier Foundation carry on their activities mainly online, Tonga.Online – smart X tension, The World Starts With Me and Proyecto Cyberela – Radio Telecentros blend offline interaction with online learning activities. Likewise, as to the focus of interest,¹⁹³ while some of the cases analysed (Open Clothes, dotSUB, The World Starts With Me) address a well-defined issue, in other cases the focus of interest cannot be easily profiled. For instance, Telestreet/NGVision aims at creating the conditions for grassroots universal access to ICT and Overmundo aims at providing Brazilian culture at large with tools for self-expression. Lastly, as far as the technology used is concerned, if some projects, like Telestreet/NGVision and the Free Software Foundation, are cases of assemblages enabled by end-to-end technologies like mailing lists and peer-to-peer software,¹⁹⁴ projects like Overmundo and The World Starts With Me use centralized platforms allowing the access of multiple users.

¹⁹¹ Readers probably remember that Lovink and Rossiter (2005), for instance, consider as organised networks only non-profit initiatives. See paragraph 1.3.2. More generally, many authors tend to consider online communities as part of the so called 'Third Sector' (see Bazzichelli 2006a; Formenti 2008).

¹⁹² As seen in paragraph 1.4, for instance, USC's *The Digital Future Report* defines online community as 'a group that shares thoughts or ideas, or works on common projects, *through electronic communication only*'.

¹⁹³ As discussed in paragraph 1.3.1, leading Internet scholars like Castells and Wellman highlight the switch from territorial community to networks oriented towards specific interests as a major change in the contemporary structure of community.

¹⁹⁴ Readers probably remember from paragraph 1.2.3. that according to Lessig (2001) it is the end-to-end architecture of digital networks that assures the openness of the Internet and the creation of digital commons. The focus on the decentralized character of Internet networks is of course inherited from the hacker culture's attempts to avoid control and, ultimately, from cybernetics.

These sources of heterogeneity not only argue for the ineffectiveness of any attempt to look for a common definition of ‘online community’, but also call into question the criteria that have been normally used to classify online assemblages.

First, the profit/non-profit character, the online/offline nature of the interaction, the presence of a specific focus of interest and the centralized/decentralized technological model do not show any correlation, as shown in Table 19. As a consequence, these traditional criteria do not allow the researcher to reduce heterogeneity and infer few abstract types of ‘digital community’.

Table 19 – Classification of winning projects according to orientation to business, relationship between online and offline interaction, focus of interest, centralized/distributed technology used. No correlation emerges among these variables

	Profit/Non-profit	Only online/Also offline interaction	Specific focus of interest	Centralized/decentralized technology¹⁹⁵
Tonga.Online – smart X tension	Non-profit	Also offline	No	Centralized
Akshaya	Profit	Also offline	No	Centralized
Projecto Cyberela – Radio Telecentros	Non-profit	Also offline	Yes	Centralized
The World Starts With Me	Non-profit	Also offline	Yes	Centralized
canal*ACCESSIBLE	Non-profit	Mainly online	No	Centralized
Electronic Frontier Foundation	Non-profit	Mainly online	Yes	Centralized

¹⁹⁵ With ‘centralized’ we consider those technologies that allow a few-to-many or one-to-many pattern of communication through a unique platform. Examples are web-radios, blogs, html web pages. With ‘decentralized’ technologies we mean those tools that allow a many-to-many or one-to-one pattern of communication. Examples are peer-to-peer networks, mailing lists, wikis. We certainly acknowledge that this is a very rough distinction: for instance, wikis are a many-to-many technology, but they also rely upon a web platform, so that there is a certain degree of centralization in wikis, too. As it is going to be explained in the following lines, we quote this and the other variables just to go beyond them and replace them with more abstract principles.

Tracing back Communities

Free Software Foundation	Non-profit	Mainly online	Yes	Decentralized
Telestreet/NGV	Non-profit	Also offline	No	Decentralized
Overmundo	Non-profit	Mainly online	No	Centralized
Open Clothes	Profit	Mainly online	Yes	Centralized
dotSUB	Profit	Mainly online	Yes	Centralized

Second, all these criteria are quite ambiguous: they just phenomenologically register a state of the world, without considering how that state got crystallized. For instance, the online/offline criterion is inaccurate because it does not take into consideration the physical interactions taking place at many levels, for example between those who run the community as core team. For example, with Overmundo, even if most people interact online on the Web 2.0 platform, other interactions – like those between the Group Ideas Movimento and Petrobras – were mainly face-to-face, and they have been fundamental for the establishment of the community. Likewise, the profit/non-profit nature is not easily distinguishable: non-profit projects like Proyecto Cyberela – Radio Telecentros and Overmundo depend upon multinational corporations for their sustainability and provide them back with a return in terms of image, while for-profit initiatives like dotSUB cannot rely upon any other actor than users. Furthermore, also the degree of specificity of the focus of interest is difficult to be set. For instance, Telestreet/NGVision does not address a specific focus of interest, since it aims at fostering universal access to media on multiple issues; however, one could see ‘open access to media’ as a broad focus of interest, as well.

Even if these traditional criteria reveal their ambiguity, when it comes to the second question above – whether it is possible to identify some principles to bring order into such a heterogeneous field, some room for manoeuvre can still be devised. We can at least take into consideration the possibility to develop a system of classification of the projects analyzed based on more abstract criteria.

On this regard, during the observation of the accounts one *principium divisionis* has traced a significant distinction among the projects. It is related

to the length of the chain of actions leading to the materialization¹⁹⁶ of the digital community. While for some projects either community pre-existed to the concatenation of actions described in the entry forms or it popped-out after few passages, some other projects enlightened the most minute interchanges through which community emerged as the result of this concatenation. In the first type of cases, the theory of action was one of cause-and-effect and the boundaries of the community tended to be stable and taken for granted. In the second type of accounts, on the contrary, boundaries were simply not traceable because of the ceaseless proliferation of mediators.

This *principium divisionis* is connected to ANT's distinction between mediators and intermediaries and can thus be measured by the proportion of mediators against intermediaries: projects of the first type number more intermediaries than mediators in their accounts, while projects of the second type include more mediators than intermediaries.¹⁹⁷ Taking into account the observation carried on in the previous paragraph, in the first category Open Clothes, the Electronic Frontier Foundation, Akshaya, canal*ACCESSIBLE, Proyecto Cyberela – Radio Telecentros are included, while Tonga.Online – smart X tension, The World Starts With Me, the Free Software Foundation, Telestreet/NGVision, Overmundo and dotSUB are included in the second category.

In particular, in the accounts belonging to the first category information technologies are conceived of either as mere intermediaries that transport elements without interfering with the output, or as goals to achieve: a domain to enter in order to keep the pace with the 'Information Age'. Paradoxically, to those same technologies that are seen as causes of major changes no more interesting role is attributed than that of silently transporting something (information) that has been produced elsewhere.

¹⁹⁶ We could not find a better word than 'materialization' or 'emergence' in order to mean the process whereby community slowly condenses into a shape, starting from the associations of heterogeneous elements. The use of this word does not want to imply a 'natural', 'biologically inevitable' aspect of the existence of online communities, as Rheingold as the digital libertarians postulated (see paragraph 1.1.1). Quite the contrary, here the term 'emergence' indicates the *artificial* process whereby certain elements aggregate in a situated, unrepeatable way.

¹⁹⁷ For science's sake, it must be probably recalled that the number of mediators and intermediaries that are mentioned in each account has been determined following an analysis sheet, and not according to the researcher's unrepeatable evaluation. The analysis sheet is reported in the Appendix as Document 2. See also paragraph 2.7.

In these accounts, elements are usually linked through relationships of cause-and-effect and the chain transporting action is thus short, often made of only a couple of elements (the cause and the effect). Furthermore, as already observed in the previous paragraph, in these cases an association between shortness of the chain of action and relevance of the dichotomy Addresser/Addressee inherited from mass-media theory can be noticed. Projects that conceive of ICT as intermediaries are also those where it is possible to distinguish a sender that starts the process of communication and a receiver to which that process is addressed. For instance, the Electronic Frontier Foundation acts as an Addresser providing information to a vast audience of people interested in digital freedoms. It should also be noticed that in cases of the first type the inside/outside dichotomy maintains its relevance: even if they are layered into concentric levels of participation (from simple members to the core team), group boundaries tend to be stable and taken for granted.

In the second type of accounts, conversely, community materializes from a concatenation of mediators, the chain of action is well-deployed and each participant activates other participants. These are the 'well-attached' projects where the digital community is 'what is made to act by a large star-shaped web of mediators flowing in and out of it. It is made to exist by its many ties.' (Latour 2005a, 217). And these ties among heterogeneous elements are not made of 'solidarity', 'harmony' or 'team spirit'. With the Free Software Foundation, for instance, GNU OS, licenses and the Linux kernel are not assembled together by means of 'harmony'.¹⁹⁸ Rather, communality can be the a posteriori, transient recognition of their 'cold' association.

In other words, these are the cases where community is accounted for as an Actor-Network.¹⁹⁹ It is thus not by chance that in these accounts the dichotomy Addresser/Addressee loses relevance, since the elements the

¹⁹⁸ Rather the contrary, if one should pay attention to the well-known controversy between Richard Stallman and Eric Raymond. Actually, in origin, the Linux kernel was developed as a sort of provocation towards GNU's organizing logic. See DiBona *et al.* (1999).

¹⁹⁹ As Michel Callon has pointed out, 'the actor network is reducible neither to an actor alone nor to a network. Like networks it is composed of a series of heterogeneous elements, animate and inanimate, that have been linked to one another for a certain period of time... But the actor network should not, on the other hand, be confused with a network linking in some predictable fashion elements that are perfectly well defined and stable, for the entities it is composed of, whether natural or social, could at any moment redefine their identity and mutual relationships in some new way and bring new elements into the network' (Callon 1989, 93).

community is composed of can 'at any moment redefine their mutual relationship' and boundaries have not been black-boxed yet.

For those who might argue that a similar categorization would be based only on textual accounts and not on the *real* communities, and that in an age of media convergence sticking to texts may sound old-fashioned, two considerations are needed. First, while for other categories like 'Interactive Art', 'Animation and Visual Effects' or 'Hybrid Art' artworks in the form of software, videos and installations are usually submitted, it is Ars Electronica itself that requires textual submissions when it comes to represent the 'Digital Communities' category for evaluation purposes. As already discussed in paragraph 2.2, the problem with such fuzzy objects is the need to find handles that enable the researcher as well as the jury members to grasp them, and text – seen as an account by the community's spokespersons – still offers a cheap and accessible technique of self-representation.

Second, for everything that was discussed in paragraph 2.2, texts are not less objective than experiments or statistics. If a textual account is part of what makes an assemblage exist, this does not mean that it is just a 'fictional narrative'. Its accuracy, objectivity and truthfulness can still be measured. As Latour (2005a, 127) has pointed out,

textual accounts are the social scientist's laboratory and if laboratory practice is any guide, it's *because* of the artificial nature of the place that objectivity must be achieved on conditions that artifacts be detected by a continuous and obsessive attention. [...] If the social is something that circulates in a certain way [...], then it may be *passed along* by many devices adapted to the task – *including* texts, reports, accounts, and tracers. It may or *it may not*. Textual accounts can fail like experiments often do' (*Emphasis in the text*).

Latour thus does not only argue for the objectivity of texts in general, but he suggests a criterion for assessing the quality and objectivity of textual accounts. He defines a good account as 'one that *traces a network*, [that is] a string of actions where each participant is treated as a full-blown mediator' (Latour 2005a, 128. *Emphasis in the text*), where the social is passed along. If we stick to this criterion, among all the winning projects analysed in the previous paragraph, only those that belong to the second type above – that is, those that numbered more mediators than intermediaries – may be considered as having submitted good accounts.

Yet, apart from this first *principium divisionis* (and *aestimationis*), it is true that textual accounts are only one device among others through which

the social circulates. In the case of digital communities, another fundamental device is *code*.

In paragraph 2.1 we have already reviewed Clay Shirky's understanding of social software as 'political science in executable form', where the political is embodied into the patterns of communication enabled by software (Shirky 2003). We have also already seen how 'the political' gets to indicate a much wider domain than the formal political system, since it means the issues discussed in an assembly as well as the procedures whereby that assembly is gathered (Latour 2005b). Here, the question points a similar direction: can software articulate the political, that is, the procedures whereby a digital assembly is gathered? if so, how can software represent community as an Actor-Network, in a similar way as (good) textual accounts can do? If we succeed in answering this latter question, we shall find a second criterion based on code, rather than text, and abstract enough to act as a *principium divisionis* in a system of classification for digital communities.

As to the first question, some helpful insights are provided by scholars like Boyd and Ellison (2007) and Masanès (2007). All these authors concentrate on the patterns of communication enabled by software. Notably, software architectures make some online activities accessible and visible to members and some other activities accessible and visible also to non-members. By focusing on these regimes of access and visibility, these researchers show examples of how software can articulate the procedures whereby a digital assembly is gathered.

In a special theme section of the *Journal of Computer-Mediated Communication* dedicated to social network sites (SNSs),²⁰⁰ Boyd and Ellison (2007) argue that the public display of connections is a crucial component of SNSs: 'what makes social network sites unique is not that they allow individuals to meet strangers, but rather that they enable users to articulate and *make visible* their social networks' (Boyd and Ellison 2007, 2. *Author's emphasis*). As a consequence, it is the structural variations around visibility and access that constitute one of the primary ways whereby SNSs differentiate themselves from each other and constitute their own field of the political. The visibility of users' profiles, for instance, varies by site and allows

²⁰⁰ Here it should once again be recalled that there exist two different meanings of 'network': as object or study or as method. What 'network' means in ANT and what is usually understood as 'network' when talking about social network sites are two completely different things. While in the second case 'network' indicates an object of the world, namely a specific social structure (see also paragraph 1.3.1), for ANT 'network' indicates a method, it is an indicator of the quality and objectivity of a textual account, as we have just seen.

different procedures of inclusion/exclusion: profiles on *Friendster* and *Tribe.net* are visible to anyone, also to viewers that are not subscribers of those services; conversely, *LinkedIn* filters what a viewer may see based on whether she has a paid account or not; again differently, *MySpace* allows users to choose whether they want their profile to be public or restricted to friends only.

Masanès (2007) offers a similar example of articulation of the regimes of access and visibility when he talks of the '*fabrique* of the networked environment'. Masanès too argues that UGC platforms differentiate among them by the potentiality to access a number of functions as non-members. For instance, while the watching function is open in *Wikipedia* and *Delicious*, it is closed in *Slashdot*. Conversely, the submission function is open in *Wikipedia*, but partially closed in *Delicious* (since it requires to log in). Again, while the discussion function is open in *Slashdot*, it is conversely closed in *Wikipedia*. That is, Masanès adds to Boyd and Ellison (2007)'s insight a distinction among multiple functions. Visibility is thus one function (watching) among others to which access can or cannot be granted to guests.

Coming to the second, related question on how software can represent community as an Actor-Network, some suggestions come from Lovink and Rossiter (2005). As we have already seen,²⁰¹ an attention to the regimes of visibility and access characterizes also their analysis of weblogs. These scholars argue that, since the logic of the blog is that of the link, blogs are characterized by a politics of enclosure. As a matter of fact, links enhance visibility through a ranking system and delimit the club of 'Friends',²⁰² the cultural enclave. Furthermore, such a delimitation does not arise out of technical scarcity: virtually there is no reason why one can not include all the existing links. Rather, limits are motivated by affinity: the blogger creates links to those other bloggers whose culture and tastes she shares.

This is why Lovink and Rossiter argue that in blogs links constitute a new field of the political: blogs are 'zones of affinity with their own protectionist policies. If you're high-up in the blog scale of desirable association, the political is articulated by the endless request for linkage. These cannot all be met, however, and resentment if not enemies are born' (Lovink and Rossiter 2005, 7).

²⁰¹ See note 82 in paragraph 1.3.2.

²⁰² We use the term with the capital F in order to distinguish the use that of this mundane world is made on social networking sites and alike.

One of the consequences of this articulation of the political is the fact that the non-Friend, the Other, the Outside, is always kept outside the blog, it remains invisible: 'the fact that I do NOT link to you remains invisible. The unanswered email is the most significant one. So while the blog has some characteristics of the network, it is not open, it cannot change, because it closes itself to the potential for change and intervention' (Lovink and Rossiter 2005, 8).²⁰³

This actual enclosure places blogs – seen as a type of social aggregate and, at the same time, as a networking technology that participates in that type of aggregate – very far away from the Actor-Network defined by Callon²⁰⁴ as an assemblage where 'the entities it is composed of, whether natural or social, could at any moment redefine their identity and mutual relationships in some new way *and bring new elements into the network*' (Callon 1989, 93. *Author's emphasis*). While ANT's Actor-Network shows at any time the potentiality to involve new entities in the course of action, blog software structurally rejects the possibility of antagonism and otherness in the name of 'Friendship'.

This comparison between Lovink and Rossiter's analysis of social software and ANT's definition of Actor-Network reveals that if we want to figure out how software architecture can represent community as an Actor-Network, in a similar way as (good) textual accounts can do, we need to take into account the regimes of access and visibility enabled by code. As textual accounts can or cannot trace a network where new elements pop-up at any time, in a similar vein code can or cannot plan in its design the potentiality for the Outside to access the community and be visible. As in some textual accounts the dichotomy Addresser/Addressee loses relevance and 'the definition of the "outside" has been dissolved and replaced by the circulation of plug-ins' (Latour 2005a, 214), so some software architectures can facilitate the getting over the dichotomies of 'membership' Vs. 'otherness', 'inside' Vs. 'outside'.

A similar software architecture would establish the potentiality for the Outside, the Guest, the Non-member to access the assemblage, interact with it and leave a publicly visible trace of the interaction. That is, the proposal here is to consider as software that represents community as an Actor-

²⁰³ It is true that blogs allow the Outside to participate through comments. However, Lovink and Rossiter recall that comments have a very different relevance than posts and may be taken down. Furthermore, we would add, many blogs – run especially by institutional personalities – do not even offer the commenting function.

²⁰⁴ See note 199.

Networks those information technologies that allow also non-members to 'speak' and 'be publicly heard'. For example, non-moderated forums and mailing lists allow a high degree of participation and visibility of non-members, since everyone can subscribe online and post a message that will be publicly readable. On the contrary, 'contact us' forms that generate private flows of communication to the website manager do not leave a publicly visible trace of the interaction, even if also a non-member can submit a message. Yet, between closed Web forms and open forums there are many intermediate positions and this *principium divisionis* should be seen as a continuous, non-binary variable, rather than as a dichotomy.

In order to test this second *principium divisionis*, this research thus needs to turn back to observation. Yet, there is a significant difference here with respect to the first part of this paragraph. This time, what is observed are not the textual accounts submitted by the winning projects to Prix Ars Electronica, but their websites.²⁰⁵ Using the lens provided by this second criterion, we navigated through the projects' websites and wrote down all the communication technologies accessible *online through the websites*²⁰⁶ (second column in Table 20).

Among these technologies, we then sorted out those that allow users to interact with the community and to leave visible traces of their interaction (third column in Table 20). To identify these subset of technologies, we ourselves acted like a guest and accessed all the facilities provided by the websites: we posted, commented, subscribed to mailing lists, signed petitions, each time exploring the boundaries embedded into the software architecture. Among these interactive technologies, in fact, some allow only members to interact, others allow also guests to participate, still others allow guests to register online and to become members either without asking for

²⁰⁵ Of course, there is a temporal gap between the moment when accounts were written for competition purposes (from 2004 to 2007) and the moment when the websites underwent our observation (in 2007-8). It is likely that some variations occurred on the software side since when the accounts were elaborated. Still, since this paragraph's objective is not to find correlations *a priori* set, but to devise a system of classification for online communities, this gap is not going to relevantly affect the results. If some correlation between the two *principia divisionis* emerge, that could suggest a coherence between the subsequent developments in the projects' websites and the initial textual accounts. If no correlation emerge, the results won't be less valid.

²⁰⁶ This means that our observation did take into account non-web technologies like mailing lists and ftp upload that are nonetheless accessible through the projects websites, but not those that are not accessible through the website, like, for instance, Tonga.Online's Alpha Smart mobile devices about which no trace can be found on the website.

specific requirements or anchoring the registration to data related to the brick-and-mortar domain (passport, ID card, health insurance number).

Each peculiar set of interactive tools can thus be seen as establishing regimes of access and visibility measurable in terms of the degree of visibility of the contributions submitted by the tester-researcher acting as a guest (degree of visibility of the Outside: fourth column in Table 20). The degree of visibility was rated according to a 5-steps scale as 'invisible' (non-members cannot interact at all), 'very low' (non-members can access very few interactive technologies), 'rather low' (non-members can access few interactive technologies), 'rather high' (non-members can access many interactive technologies), 'very high' (non-members can access most interactive technologies).

It should be stressed that, albeit being qualitative, this observation is not less scientifically accountable. First, in the digital domain the experience of the researcher, while being subjective, is at the same time replicable by any other Internet user. Since we are not a member of any of these projects, the researcher's browsing of the websites is comparable to that of an abstract 'Other': the visibility of the contributions posted by the researcher is comparable to the visibility that contributions by any other non-member could achieve.

Second, albeit not being numerical, the attribution of a value to each regime of access and visibility is based on verifiable data (see third column in Table 20). Actually, the degree of visibility cannot be quantitatively measured without denying the peculiar regimes of access set by each project. We did attempt to extract a numerical value from the ratio of number of interactive technologies to overall number of technologies used. However, such a value would not distinguish between the different regimes of access for members and guests, nor quantify the possibility – offered only by some websites – for guests to register as members, nor the different visibility of, for instance, blog comments and mailing lists posts. We had thus to acknowledge the need to assign to each website a position on the 5-steps scale without using numerical values.

The results of the observation are reported in Table 20.

4 Results and Discussion

Table 20 – Analysis of the websites of the winning projects according to the degree of visibility of the Outside allowed by the technologies used

	Technologies used	Interactive technologies that allow users to leave publicly visible traces	Degree of visibility of the Outside
Tonga.Online – smart X tension www.mulonga.net	Textual web pages (read only); News feed ; Discussion forum ; Contact form ; Newsletter ; A/V streaming and download	Discussion forum : read-only for guests, submission-open for members. Online registration is allowed	Very low
Akshaya www.akshaya.net	Textual web pages (read only); Guestbook form (does not work); ‘Contact us’ link : list of phone numbers; Restricted area : it is not possible to register online	None	Invisible
Proyecto Cyberela – Radio Telecentros www.cemina.org.br	Textual web pages (read only); Video streaming ; PDF documents’ publishing ; Radio streaming/download ; Contact form	None	Invisible
The World Starts With Me www.theworldstartarts.org	Flash animations accessible only by students and teachers; Contact e-mail addresses; Students forum	Students forum accessible only by registered students. Online registration is not allowed	Invisible
Canal*ACCESSIBLE www.zexe.net/barcelona	Photo, map and video database searchable by date, name of submitter, city area, type of obstacle; Open discussion forum	Open discussion forum : it does not need registration	Rather high
Electronic Frontier Foundation www.eff.org	Contact e-mail addresses.; Newsletter ; RSS Feeds ; ‘Send a postcard’ form ; ‘Send your message to decision	EFF software projects make use of wikis for coordination, mailing lists and Sourceforge’s tracker for development	Rather low

	<p>makers' form: restricted to US citizens;</p> <p>HTML/PDF guides for Internet users;</p> <p>'Line Noise' Podcast;</p> <p>'Submit prior Art' form;</p> <p>EFF software projects: wikis, mailing lists and Sourceforge's tracker;</p> <p>'Deeplinks' blog: no comment facilities</p>		
<p>Free Software Foundation www.fsf.org www.gnu.org</p>	<p>Newsletter;</p> <p>News section (read only);</p> <p>Mailing lists on specific campaigns;</p> <p>'Contact us' e-mail address;</p> <p>Free Software Directory (db on all existing free sw): users can download and rate sw, submit a level, subscribe to development-focused mailing lists and IRC channels, view VCS repository;</p> <p>Campaigns center: information on campaigns and access to 'take action' tools hosted by partner organization like EFF's action alert;</p> <p>FSF Groups Wiki;</p> <p>FSF Blogs publishes blog entries by 'people in the community', no comments allowed, but it possible to suggest one's own blog;</p> <p>Events section: RSS feed;</p> <p>Code contribution: open to members</p>	<p>Mailing lists on specific campaigns restricted to members, but registration is allowed online;</p> <p>Mailing lists of code development open also to non-members;</p> <p>Free Software Directory: non-members can rate sw, subscribe to development-focused mailing lists and IRC channels;</p> <p>FSF Groups Wiki open to guests too;</p> <p>Code contribution: open to members, but online registration is allowed on Savannah servers</p>	<p>Rather high</p>
<p>Telestreet/NGV www.telestreet.it www.ngvision.org</p>	<p>News section run by editorial team, guests' comments allowed;</p> <p>Open a posteriori moderated mailing list (Telestreet);</p> <p>Closed mailing list (NGV);</p> <p>Discussion forum;</p> <p>Video download;</p> <p>Peer-to-peer video distribution;</p> <p>Ftp upload of videos</p>	<p>Open comments on news;</p> <p>Open mailing list;</p> <p>Discussion forum (need registration which is allowed online);</p> <p>Peer-to-peer distribution and ftp upload open to guests</p>	<p>Very high</p>

4 Results and Discussion

Overmundo www.overmundo.com.br	Blog: open to read, only members can comment, submit, revise, vote articles; Contact form to contact the core team	Blog: only members can comment, propose, revise and vote articles to be published. Online registration is allowed BUT requires sensitive data. Members have different voting weights according to the length of their participation in the community	Invisible (guests are transformed into members)
Open Clothes www.open-clothes.com	Read-only news section; Bulletin board ; 'Recipe' download ; Database on members ('Harbour'); B2B and B2C selling platform ; Members showcase ('Dejima'); Newsmagazine ; Database of fashion schools; 'Production journal' showcase	Bulletin board: posting requires membership; B2B and B2C selling platform: access requires membership; Members showcase requires membership; Newsmagazine open to contributions by members	Rather low
dotSUB dotsub.com	Watching videos is open; To upload one's own videos and subtitle other people's videos registration is required	Video uploading and subtitling is restricted to members. But online registration is allowed	Very high

In two of the websites analysed, the possibility for both members and guests to interact online is not provided by the software architecture. Akshaya's and Proyecto Cyberela – Radio Telecentros' websites, in fact, resort mainly to broadcast technologies like textual web pages, video and radio streaming or download, textual documents publishing. Even when some kind of interactive tool is provided, either it does not work (the guestbook in Akshaya), or its output remains invisible (the contact form in Proyecto Cyberela – Radio Telecentros). Not only guests, but also members are invisibles in these cases.

The case of The World Starts With Me is slightly different. Here, among other tools that do not allow users to leave publicly visible traces of their interaction, like the *Flash* animations, members can interact on the students' discussion forum, accessible only to registered students. However, since online registration is not allowed, non-members remain equally invisible.

A similar politics of access is adopted also by Tonga.Online – smart X tension, with the remarkable difference that here online registration is allowed. In this case, some one-to-many technologies are adopted, as well: read-only web pages, news feed, newsletter, audio-video streaming and download. In addition, the contact form makes possible a form of interactivity, but it is not visible on the website. The only interactive tool that enables users to leave visible traces of their passage is the discussion forum. As in the previous case, the forum is accessible only to members. However, here online registration is allowed and the process of registration does not require personal data but only ID and password. In other words, not only a wholly digital identity is sufficient to access the system as a member, but also the threshold for guests to register and become members is very thin: users do not have to match particular requirements to acquire the status of members. Anyway, since the discussion forum constitutes one minor subsection of the website, the degree of visibility of the Outside is rated ‘very low’.

Another website that resorts to a discussion forum is Canal*ACCESSIBLE. This website makes public a database that contains pictures, city maps and videos illustrating cases of *incivismo* at the expenses of disabled people. The database is searchable by date, name of submitter, city area and type of obstacle. In addition to the database, a discussion forum is open for comments: posting does not need registration and posts are immediately visible on the website. It may thus be said that in this case the software allows a rather high degree of visibility for non-members.

On the contrary, a politics of access that fosters a rather low degree of visibility of the Outside is shown by the Electronic Frontier Foundation’s website. The EFF follows a pattern of communication that recalls some communication strategies used by pre-digital activists. The website is first of all a one-to-many source of information and documentation: textual guides, a newsletter, RSS feeds, podcasts and a blog (no comments allowed) contribute to the formation of acquainted Internet users. These attentive users are then asked to take action in favour of digital liberties by spreading awareness to friends (see the ‘Send a postcard’ form), by contributing to the EFF’s knowledge (see the ‘Submit prior Art’ form) and by lobbying decision makers (see the ‘Send your message to decision makers’ form, restricted to US citizens). Contacts between users and EFF core team can be established only by means of e-mail addresses provided on the ‘contact us’ page.

In this star-like communication model where an editorial staff produces information that users will consume and propagate throughout, one would find some technologies that enables a visible interaction among users and

between users and core team only when it comes to software development. The EFF software projects subsection, in fact, makes use of wikis in order to coordinate developers and of mailing lists and *Sourceforge*'s tracker in order to collaboratively develop software.

The Free Software Foundation further develops a complex, multi-level model of communication. First, broadcast technologies like a newsletter, a read-only newsreel, a blog (which does not allow comments) and RSS feeds in the events section foster a traditional mass-media model of communication.

Second, some interactive tools generate private, invisible flows of communication. In particular, on the website pages interaction is mainly delegated to e-mail: for any need to contact the core team, e-mail addresses are provided. Moreover, in the 'campaigns center' section 'take action' tools hosted by partner organization like EFF's allow members and guests to send appeals to decision makers.

Third, it is only when it comes to free software development and distribution that technologies that allow both members and guests to leave publicly visible traces of their communication are implemented. Notably, the 'Free Software Directory' – a database that gathers all existing free software – allows members and guests to download and rate software, submit a level, subscribe to development-focused mailing lists and IRC channels, view the VCS repository. Beside mailing lists on code development that are open also to non-members, some other mailing lists focused on specific campaigns are restricted to members. Similarly, code contribution on the *Savannah* platform is open to members only. However, in both cases online registration is allowed and requires only ID and password. Furthermore, a wiki aimed at facilitating the organization of regional groups concerned on free software issues is open to guests too.

Summing up, in the FSF's website architecture access to software development and group organization facilities – the core activities of FSF – is open also to non-members. This is why the degree of visibility of the Outside is rated as 'rather high'.

Two cases where a very high degree of visibility of non-members' contributions is afforded by the software architecture are dotSUB and Telestreet/NGVision. As a decentralized video subtitling platform, dotSUB allows guests, too, to watch the videos stored in its database. Conversely, to upload one's own videos and subtitle other people's videos registration is required. However, online registration is allowed and requires a wholly digital

identity, that is, ID and password are sufficient to enter the system as a member.

The Telestreet's website is almost completely open to contributions by users. In the news section, run by the editorial staff, guests' comments are allowed without the need to register. Subscription to the mailing list is open and moderation is exerted only after outrageous posts are sent in the list, as it can be read in the netiquette. Furthermore, the discussion forum requires online registration, but it is open to any user with only an ID and a password.

Conversely, NGVision's mailing list is closed and subscription cannot be accessed through the website. Yet, peer-to-peer video distribution facilities (supported by *Bit Torrent*) and ftp video uploading are accessible not only to members, but also to guests.

The most innovative politics of access is probably that afforded by Overmundo's website architecture. Apart from a 'contact us' form, the website is constituted by a blog where the watching function is open to guests, while commenting, writing, revising and voting functions are restricted to members only. The interesting point is exactly that this project articulates membership in a very complex way. First of all, only members can comment posts, propose articles, revise drafts awaiting to be published and vote articles.²⁰⁷ Moreover, even if online registration is allowed, in addition to the usual ID and password it requires sensitive data linked to the brick-and-mortar domain, like CPF or passport copy for strangers. Lastly, membership is not seen as a status, but as a process: members have different voting weights according to the length of their participation in the online community and can exert different influences on the contents which are actually published.

From a theoretical point of view, it may be said that Overmundo includes the Outside by transforming it. Since they cannot access any tool, non-members remain invisible, but they are provided with the potentiality to get integrated and transformed into members. Provided that they renounce to be Outside, non-members are admitted to undertake a process of accumulation of good reputation by registering to the website, providing sensitive data and proving to be active 'citizens' of the community.

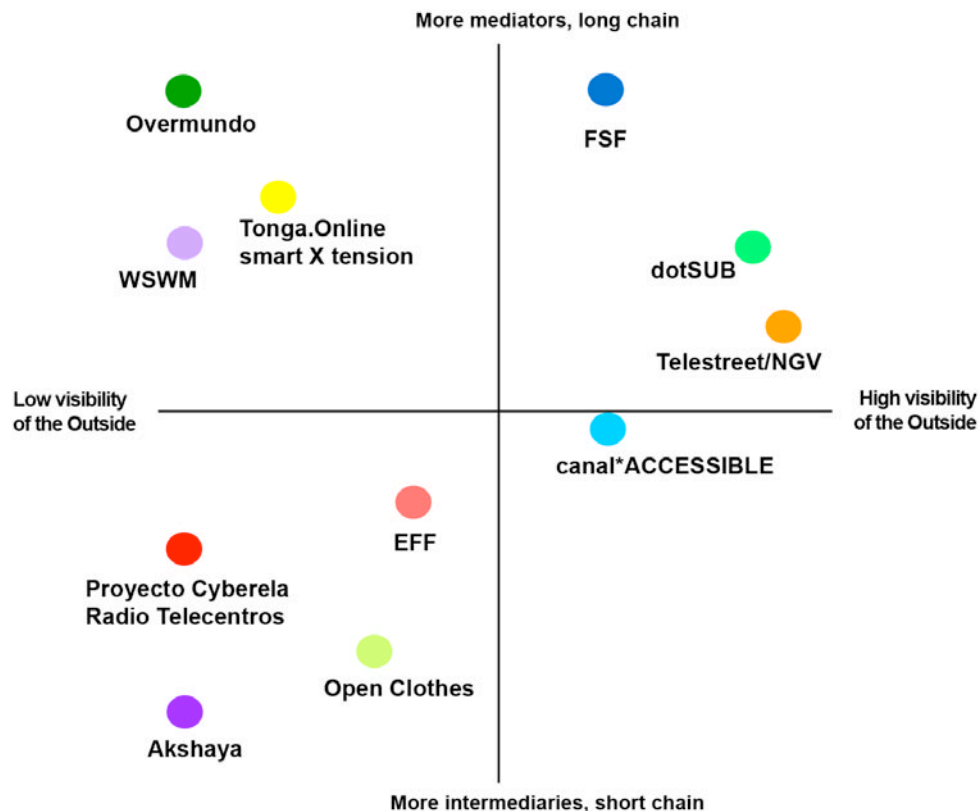
Open Clothes follows a similar pattern of communication. The website shows a vast array of participatory tools: from a bulletin board to a selling platform, from members' showcase to a newsmagazine open to contributions by members. However, if possibilities to participate in the communities are

²⁰⁷ The peculiar editing process devised by *Overmundo* is described in paragraph 4.3.4.

manifold, they are restricted to members. Furthermore, while online registration is allowed, it requires some sensitive data from the brick-and-mortar domain and digital ID is not sufficient.

If one visualizes the two *principia divisionis* we have so far reviewed respectively as Y-axis and X-axis, four quadrants may be obtained (Figure 31).

Figure 31 – Map of winning Digital Communities



The quadrant on the upper-right side includes cases where the number of mediators in the textual account is higher than the number of intermediaries and where non-members are allowed to access interactive technologies on their website. Not only the Free Software Foundation, dotSUB and Telestreet/NGV communities are accounted for as concatenations of mediators, an Actor-Network made to exist by its many ties, but also the software architecture enables a high degree of visibility of the Outside.

On one hand, in the Free Software Foundation's entry form the boundaries of the community blur to the point that it is difficult to distinguish an outside and mediators emerge at the intersection of social and technical concerns. Similarly, the Telestreet/NGVision account deploys its ties rather

accurately. Although there are references to a cause-and-effect relationship, in particular when media, taken as 'channels', are depicted as intermediaries, yet disassembled or combined media are conceived of as mediators. Furthermore, since every DIY-television client is also a sender, the dichotomy Addresser/Addressee loses relevance. As to dotSUB, its account conceives of videos, visual language, subtitling technology and the dotSUB platform itself as mediators transforming cultural barriers into bridges.

On the other hand, FSF website leaves access to software development and group organization facilities open to non-members, too. dotSUB, on its side, requires only digital credentials in order to submit and subtitle videos. Lastly, Telestreet/NGV allow guests to interact on their websites in multiple ways, almost without control.

The quadrant of the upper-left side still represents cases where mediators are more numerous than intermediaries, but here software design provides few or null opportunities for non-members' posts to be visible. Tonga.Online – smart X tension is located in this quadrant, close to Overmundo and The World Starts With Me. These projects, in fact, deploy a high number of mediators and no or few intermediaries. In addition, their software architecture leaves few or null room for external contributions, that is, their code does not represent community as an Actor-Network, but rather as a closed group whose boundaries are black-boxed.

On one hand, in the Tonga.Online – smart X tension's entry form elements from both the ICT domain and the cultural tradition of the Tonga people act as mediators that ferry the geographical community across the Zambezi River as well as across the Information Age. In The World Starts With Me's account, even if some communication technologies are seen as intermediaries, public schools, clinics, NGOs, counselling services are assembled with software, students, artists, peer facilitators, people from the slums in an Actor-Network that blends formal institutions with informal ties. As to Overmundo, by deploying many and variegated mediators, its submission form describes in details all the actions that brought to the emergence of the digital community.

On the other hand, in the Tonga.Online – smart X tension website the sole interactive technology that enables users to leave visible traces of their passage is the discussion forum, which is accessible only to members, even if online registration is allowed. As to The World Starts With Me, apart from a discussion forum restricted to registered students, its animation-based website is completely closed and there are no possibilities for non-members to interact with the community. External traces are invisible also in the

Overmundo website, but here the politics of access is more refined. In the Overmundo community the Outside is invisible not because it is not given access to interactive tools, but because it is transformed into an Inside. Looking at membership as a process of assimilation, in fact, Overmundo's software architecture admits non-members to undertake a process of accumulation of good reputation by registering to the website, providing sensitive data and proving to be active 'netizens'.

Conversely, quadrants in the lower part of the map include cases whose textual accounts number more intermediaries than mediators, the chain of action is thus short, identities are stabilized and the traditional mass-media distinction between Addresser and Addressee maintains some relevance. In the lower-left quadrant those projects whose software architecture does not provide for the visibility of non-members are included. Here we find Akshaya, Proyecto Cyberela – Radio Telecentros, the Electronic Frontier Foundation and Open Clothes.

On one hand, not only Akshaya's entry form depicts a very short chain and a deterministic theory of action, but it also mentions only one mediator (the e-literacy programmes). As to Proyecto Cyberela – Radio Telecentros, its entry form conceives of communication technologies as intermediaries that transport women into the digital age. Similarly, EFF sees informational resources and, among these, the 'action alert' system as the only mediators. In this entry form, blog posts, podcasts, online videos and the newsletter are seen as intermediaries transporting information from a central editorial staff to a wider audience. As to Open Clothes, not only the submission forms does not mention the role of ICT, but also it does not explain how the assemblage made of tailors, users, contractors and clothes is made durable. Community is thus seen as a stabilized black box whose inner relationships are explained in terms of cause-and-effect.

On the other hand, Akshaya's website is completely closed not only to external contributions, but also to members. It resorts mainly to broadcast technologies and the only area likely to allow some degree of interactivity is restricted to members with login credentials acquired offline. In the same vein, Proyecto Cyberela – Radio Telecentros' website displays textual, video and radio information, without any tools allowing some degree of interactivity, neither for members nor for guests. The Electronic Frontier Foundation's politics of access is a bit more articulated. Here, mainly broadcast technologies are implemented: the website is first of all a one-to-many source of information and documentation. However, when it comes to software development a minimum degree of visibility of the Outside is afforded: the

'EFF software projects' subsection makes use of open wikis in order to coordinate developers and of mailing lists in order to collaboratively develop software. As to Open Clothes, although this website provides many Web 2.0 tools, they are all restricted to members. Online registration is allowed, but it requires also some sensitive data, that is, digital ID is not sufficient.

Lastly, the lower-right quadrant includes canal*ACCESSIBLE, the only case whose account numbers more intermediaries than mediators and whose website affords a rather high degree of visibility of non-members. Notably, its entry form mentions as mediators broadcast media, a political institution (the Municipality of Barcelona) and the Internet, an actor that stimulates a new consciousness in disadvantaged groups. This is why in the map canal*ACCESSIBLE is located close to the X-axis. Nevertheless, the account tends to consider technological objects as intermediaries, having the sole function of transporting information. On the software side, the discussion forum is completely open for guests, since it does not need registration.

Summing up, looking at Figure 31 no correlation between the two *principia divisionis* – length of the chain of action and degree of visibility of the Outside – can be noticed. All four quadrants include some cases and none is empty. The emptiness of the lower-right and upper-left quadrants, in fact, would have suggested a correlation between the two variables, that is, a correlation between texts that account for community as an Actor-Network and software architecture that enables community to develop as an assemblage open to the potential for change and intervention.

However, it should at the same time be noticed that, while cases whose entry forms follow deterministic explanations tend to develop websites where non-members have few or null opportunities to participate, projects whose accounts number many mediators can develop both open or closed websites. The only exception to the first type, canal*ACCESSIBLE, is located very close to the X-axis, since it shows a good many mediators (although its entry form treats ICT as intermediaries). In more abstract terms, cases that show a short chain of action tend to show also a low visibility of the Outside. Conversely, cases in whose textual accounts action proliferates in many directions do not assure for this sole fact a high degree of online visibility of the Outside.

Therefore, it could be affirmed that it is more feasible for digital communities to be represented as an Actor-Network when it comes to textual accounts, rather than when it comes to code. The field of the political constituted through software architecture tends to exert more resistance than

text to new elements that strive to enter the network, to the potential for change and, thus, innovation.

Apart from bringing some order to a widely variegated panorama, a system of classification based on the two *principia divisionis* mentioned so far shows three main advantages. First, a similar classification system is more abstract than those based on focus of interest, level of participation or type of technology used. For this reason, it is applicable to a wider range of cases and is likely to provide more data. It also allows to infer only four abstract types of 'digital community'.

Second, at least one of the two principles has been inferred from the detailed observation of the theories of action expressed by the accounts. The other principle has translated the first one in terms of regimes of access and visibility enabled by software architecture. These *principia* are thus more reliable than categorizations postulated *before* the beginning of the analysis.

Third, these *principia divisionis* might also turn out to be useful in a process of evaluation of the most innovative and progressive digital communities for competition purposes. The first *principium* explicitly suggests a criterion for evaluation. As Latour has pointed out, 'good' textual accounts are those where community is accounted for as an assemblage which is 'made to act by a large star-shaped web of mediators flowing in and out of it'.

As to the second principium, it could maybe supply a similar function: 'progressive' software architectures could be considered to be those that remain open to 'the potential for change and intervention', those that maintain the procedures whereby the community get assembled porous, those where the entities they are composed of 'could at any moment redefine their identity and mutual relationships in some new way and bring new elements into the network'. Nonetheless, it should be kept in mind that the second *principium divisionis* allows to identify online communities where the Outside is *digitally* visible or invisible. For projects whose websites are closed to guests, there are of course other non-digital ways to include the Other in the course of action, as The World Starts With Me's blended learning model demonstrates.

Chapter 5

Conclusions and Further Developments

This research started some pages ago with a question: can we be reasonably sure that when we talk about 'digital communities' we are all referring to the same thing?

At first sight that was a mundane question. However, it got more and more complicated as pages went by, since this research's intellectually radical approach has not escaped the scientific duty to open one by one the many black boxes that have been piled up around the concept of 'online community' over the years.

The first black box which this work has tried to open is that commonly named 'cyberculture'. With the help of authors from different disciplines, like Howard Rheingold, Manuel Castells, Patrice Flichy e Fred Turner, we have glimpsed the cyberculture's black box and pulled the umbilical cord that binds the techno-libertarian culture to 1960s' counterculture, on one side, and to 1990s' notion of 'online community', on the other side.

The second, huge black box is usually labelled 'digital revolution' and corresponds to the cybernetic vision of information technology as the source of a second industrial revolution bearing the promise of emancipation for the citizenry. By addressing the myths of the Internet as an intrinsically ungovernable and out of control machine, of the creative coalition between knowledge workers and Internet companies, and of the spontaneous online interactions of millions of individuals worldwide producing diffuse wealth, stronger participation to political processes, reduction of social inequalities, empowerment of disadvantaged sectors of population, this research has argued that in late 2000s many of the techno-libertarian culture's utopias have come to a crossroads. On one side of this crossroads there is the acknowledgment of the elements of counter-evidence and the exploration of new possibilities, on the other side there is the transformation of utopias into ideologies and the crystallization of identities, as we are going to discuss when we analyse the results for Task 3.

The third black box which this research has tried to look into is the object 'online community' itself. First, the research has dealt with social sciences scholars and media theorists who have argued that the utopia of an Internet rooted into communitarian harmony has left room to conflicts and competitions which are not very different from those affecting the brick-and-mortar world. On one hand, by coining the expression 'networked individualism' – a specific model of sociability rooted into the relationship between labour and networked enterprise proper to the Information Age, Manuel Castells and Barry Wellman call into question the same possibility to identify communitarian assemblages online. According to these influential social scientists, computer-mediated-communication has only supported the spread of individualized networks as the dominant form of sociability. Only once online networks get stabilized into social practices, they can build virtual communities; yet stable virtual communities are exceptions. On the other hand, Lovink and Rossiter's notion of 'organized networks' addresses the limits that virtual communities and tactical media have been unable to face: the fact that instability, conflict, heterogeneity, passivity are the norm, and collaboration, unity and cooperation are exceptions.

Second, the research has underlined how, while the cyberculture paradigm is showing its limits, other domains are taking over the notion of online community. This taking over enlightens the paradoxical weakness of this notion: while communal ties enabled by ICT are more and more invoked, the Internet is revealing itself as a much more bureaucratic and profit-oriented domain than ever. As a consequence, it is not clear anymore whether there exist ties that are specific enough to be called 'communitarian'. 'Online community' seems to be diluted everywhere and still nowhere in particular.

These uncertainties have thus led us to reject the widespread understanding of the digital community as a stabilized type of substance and to transitorily adopt the expression 'techno-social assemblage'. This latter is of some merit in not including any reference to communalistic rhetoric and in acknowledging the fleeting character of most social aggregates. Furthermore, using such an abstract term has allowed us to avoid the current distinction between first generation 'online communities' and more recent 'Web 2.0' platforms or 'social networking sites', thus enabling us to respect one of our few epistemological postulates according to which there are no best social aggregates to start an inquiry with. This choice has turned out to be successful, since it has allowed us to get rid of prior – often hype-generated – knowledge and to concentrate on social actors' viewpoints.

The fourth black box which this research has tried to look into is the notion of 'empowerment'. 'Empowerment' has been a key concept in the development of the digital communitarian perspective: it has acted as the missing ring in the relationship between information technologies and social ties. Since ICT have been leading the 'information revolution', the concept of 'empowerment' has commonly been conceived of as the element transporting the revolutionary effects from the technological domain to the social one. However, this concept brings with it a strongly deterministic understanding of the relationship between technology and society: access to digital media is supposed to *cause* marginalized individuals and communities to improve their conditions as far as economic growth, education or political relevance are concerned.

Conversely, we have repeatedly argued that a research dealing with fleeting techno-social assemblages and digital objects endowed with agency would rather need a theory of action that exceed the relationship of causality and that take into account a multiplicity of modes of action between technological artefacts and social ties. This is why, in order to investigate the empowering potential of ICT, we have followed a relativist, bottom-up approach and mapped social actors' own theories about what the communitarian is made of.

Once all these black boxes have been opened and called into question, a set of epistemological decisions have followed as a consequence. First, instead of arbitrarily postulating a substance corresponding to the expression 'digital community', those cases that had previously been recognized as occurrences of the concept 'digital community' by several 'expert' actors have been selected as sample. Second, the textual accounts submitted for the purpose of an award to the world's leading competition on digital culture, *Prix Ars Electronica*, have been used as data source. Third, *Prix Ars Electronica*'s competition itself has been seen as the place where networks hit representation, the moment in an unstable process of social innovation when a spokesperson emerges and – together with her – self-representations, identity and opponents.

On a methodological level, these epistemological choices have been translated into three tasks and several correspondent techniques of textual analysis. As to the first two tasks, since *Prix Ars Electronica*'s archive consists of almost one thousand entry forms, this research has had to face an obstacle which is well-known by on field sociological and media studies scholarship: it has had to devise reliable techniques to analyse vast sets made of qualitative data. Fortunately, today researchers can rely upon

refined software tools for textual analysis like the two we have been using – *Leximancer* and *InfoRapid Search and Replace*. They have allowed us to map the elements associated with ‘online community’ in the entry forms; to run a co-occurrence analysis for online communities, bounded groups and loose networks; to identify the most relevant issues emerging from the whole corpus as well as some contrasting narratives; to trace the variations in the projects’ conceptual map by year of participation.

However, these software-assisted techniques have shown some limits, as well. First, since one of the textual analysis applications used is proprietary and not open, the researcher has not been able to follow step by step all the passages that have brought to the final patterns of co-occurrence. As it is well-known, since software algorithms are methodological strategies in themselves, relying upon free and open source software for research purposes is a more and more critical need.

Second and above all, we have to acknowledge some major limits of textual analyses of vast data sets using star-like visualizations. Notably, in the map representing the relationships among the concepts extracted from the whole data set, the high number of cases and their homogeneity have made it extremely complicated to recognize the most significant semantic paths. In Figure 14, for instance, even after the changes in the software settings conducted by trial and error,²⁰⁸ each concept tends to be linked (that is, to co-occur) with many other concepts in the map. As a matter of fact, if *Leximancer* works very well with short texts or small data sets, its map is not fully profitable when it comes to vast data sets made of homogeneous entry forms. In order to highlight some significant trends, we have thus had to use other forms of representation of information than the map, like the co-occurrence lists.²⁰⁹

Therefore, a first further direction of inquiry that this work suggests deals with the development of textual analysis software that should exceed the traditional star-like model and introduce new visualizing tools whereby to jointly represent multiple textual variables (i.e. frequency, contextual similarity, co-occurrence, etc.). An interesting project on this regard is *TextArc* (<http://www.textarc.org/>), a visual representation software where an entire (single) text is arranged in an arc, stepping clockwise, starting at 12:00. Lines are drawn around the outside, words around the inside; words that appear more often are brighter. An averaging tool helps show the viewer

²⁰⁸ See paragraphs 2.5 and 2.6.

²⁰⁹ See paragraph 4.2.2.

where a word is used, while a curved line can connect the words in the order they appear in the text. Finally, a concordance tool shows how many times each word is used.

Actually, visualization software development constitutes a crucial strand in current social sciences and humanities research, with most applications designed for 'natively digital' web contents. Some examples are *Issue Crawler*,²¹⁰ developed by the *Govcom.org Foundation* (Amsterdam), *Issue Scraper* (<http://www.issuescraper.net/index.php?pageid=3>), *Observatoire présidentielle* (<http://www.observatoire-presidentielle.fr/>), developed by RTGI SAS. However, only few textual analysis applications combine the capability to analyse vast offline data sets at once with a FLOSS mission and the introduction of innovative visualizing tools.²¹¹

As far as the implications of the results obtained are concerned, Task 1, on one hand, has shown that most of the themes associated with online communities by early cyberculture are still present in the entry forms submitted to Prix Ars Electronica from 2004 to 2007, with the significant exceptions of references to cybernetics, to decentralized architectures and to technology seen as a full-blown domain on its own rather than as a mere set of 'tools'. That is, most themes are present, with the exception of that techno-cultural framework – cybernetics – that acted as the source of the digital utopia.

On the other hand, by running a Boolean search across Ars Electronica's archive on digital communities, Task 1 has found not only that the term 'group' co-occurs with 'online community' more often than how much 'network' does, but also that 'group' and 'network' are not mutually exclusive and that they occur very often together in the accounts elaborated by social actors directly involved in online assemblages. From these latter results we have drawn three considerations.

First, loose networks are not the exclusive form of sociability when it comes to communal ties online. Rather, they co-exist with other models of sociability that social actors label as 'groups'. It is likely that different models of sociability fulfil different functions and further research should investigate this hypothesis.

²¹⁰ See <http://www.issuecrawler.net>. Albeit this software adopted interesting visual and searching solutions, it could not be used in this work, since it is designed to crawl the Web – and not offline textual data sets – in search of controversies.

²¹¹ Two updated databases on visualization software and textual analysis software are available at <http://www.demoscience.org/resources/> and <http://www.textanalysis.info>.

Second, on an epistemological level the results show that social change cannot be linearly inferred from technological evolution. Rather than a situation where dominant forms of sociability (i.e. loose networks) progressively replace older ones (i.e. bounded groups), the results draw a scenario where co-existence has the better of exclusive dichotomies. A linear evolution paradigm could thus lead the researcher astray when trying to explain techno-social change. Conversely, avoiding sharp dichotomies that shrink the abundance of the social into predefined tracks might probably turn out to be more profitable for social scientists interested in understanding the many nuances of social life.

Third, from the comparison of well acquainted sociological positions with rich and multi-faceted accounts the need to level up social actors' own accounts to academic arguments emerges. The results should thus not be read as a further demonstration of the inability of social actors to understand the macro-structural trends at work in the world they inhabit. Conversely, these results suggest the need to jointly investigate macro-structural trends and perception, *episteme* and *doxa*.

As to Task 2, we have identified eleven recurring macro-themes. However, of these only four represent full-blown themes. Some others are aggregates of rarely co-occurring concepts whose closeness in the map is hardly significant. Here is another example of how the constraints ingrained in the qualitative analysis of vast data sets cannot always be overcome by means of software. The choice of looking for themes starting from contextual clusters, in fact, has not necessarily assured significant results.

However, the significance of the results has increased when co-occurrence lists were analysed. Starting from the four macro-themes that aggregate elements that co-occur with a certain regularity, the second part of Task 2 has, in fact, identified some contrasting narratives by browsing through the textual instances that correspond to frequent co-occurrence patterns. Actually, the combination of qualitative and quantitative techniques – namely the qualitative comparison of textual extracts sorted out because they match concepts whose strength in a co-occurrence list is relatively high – has turned out to be one of the most profitable methods of analysis.

We have thus come to understand what are the elements that distinguish the narratives associated to 'free software' from those associated to 'social software', the narratives associated to 'local information through ICT' from those associated to 'locative media', those associated to 'work as an economical activity' from those associated to 'work as a voluntary act', those associated to 'public space-based art' from those associated to

‘engaged art’ and ‘political art’. By so doing, we have witnessed how issues that are central to the digital communitarian heritage hit the ground in our sample of analysis in a much more multi-faceted way than that emerging from the theoretical perspectives reviewed in chapter 1.

Lastly, a further direction of inquiry has been provided by the temporal semantic trends that have been discovered in Task 2. On this regard, this research has explicitly refrained from providing explanations that would have required the introduction of some external force. We have argued, in fact, that explanations are not needed when description is self-standing. However, as discussed in note 161 at page 176, the comparison of the different explanations that diverse actors could give of those trends would be very intriguing.

As far as Task 3 is concerned, submitting textual accounts to an analysis sheet that uses rather abstract descriptive categories has proved to be successful. Not only this method has produced many data, but it has also provided some criteria for the classification of online communities.

Actually, we have concluded that this latter expression does not refer to a specific, homogeneous substance. We have, in fact, investigated the meanings associated to these two terms: ‘digital’ and ‘communities’. Both are commonly used as specific substances, but none of them is. Although it refers to a kind of binary information, the ‘digital’ can be associated to mobile devices as well as to the blow on an antelope horn. On its side, ‘community’ is definitely a much more complex entity than a type of social ties characterized by solidarity. At best, it is the temporary by-product of a relentless association and dissociation of actors and networks, the emerging stage of techno-social assemblages where the heterogeneous elements they are composed of can at any moment redefine their mutual relationships.

Even if this research has failed in identifying an ecumenical definition of online community, it has nonetheless succeeded in devising some *principia divisionis* which are useful to reduce the complexity of such heterogeneous assemblages. The ‘length of the chain of action’ and the ‘degree of visibility of the Outside’ criteria have, in fact, allowed us to distinguish four types of digital aggregates according to the porosity of their textual as well as digital boundaries.

Notably, the cases included in the upper-right and lower-left quadrants in Figure 31 could fit Paul Ricœur’s distinction between utopia and ideology. According to Ricœur (1997), utopia and ideology constitute the two extreme poles of the social *imaginaire*. While ideology tends to preserve the identity of a given social group, utopia aims at exploring new possibilities. Therefore,

ideology and utopia are involved in a continuous tension between stability and change.

The same tension that affects the techno-social aggregates we have been studying over these pages. In particular, the aggregates included in the lower-left quadrant could be considered as having reached the stage of ideologies. Their principal aim is to assure their same preservation: few mediators appear in their accounts and software establishes impermeable boundaries. On the contrary, the aggregates included in the upper-right quadrant might be seen as lingering at the stage of utopias. They keep including external elements as mediators and have not yet closed their digital boundaries to the Outside. If we take into account Latour's theoretical definition of innovation as a process where elements move from one aggregate to another, we may conclude that projects included in the upper-right quadrant are those that innovate, that is, those that not only remain open to welcome new elements, but that also face the risk of losing some of their own elements.

Therefore, the system of classification here proposed is of some merit in trying to trace innovation even when it comes to aggregates that have been 'crystallized' into standard submission forms for competition purposes. Innovation, in fact, is hardly traceable through traditional categorizations. Since traditional taxonomies based on focus of interest, online Vs. offline interaction, weak Vs. strong ties, profit Vs. non-profit business model require to postulate well-defined classes before starting the research on field, they are intrinsically unable to trace innovation. They are unable because innovation, as we have seen, is exactly about *contaminating* existing classes by adding, subtracting or mixing elements. The argument that conceives of weak ties and unbounded networks as the dominant form of contemporary sociability, for instance, hinders the observer from noticing the innovative potential of those aggregates wherein weak ties and strong ones coexist and fulfil different but complementary functions (see Lanzara and Morner 2005).

Furthermore, in this last part of the research we have found that – while cases whose entry forms follow deterministic explanations tend to develop websites where non-members have few or null opportunities to participate – projects whose entry forms number many mediators can develop both open or closed websites. That is, cases in whose textual accounts action proliferates in many directions do not assure for this sole reason a coherent degree of online visibility of the Outside.

In other words, in our sample it is more feasible that digital assemblages are represented as fluid Actors-Networks when it comes to

textual accounts, rather than when it comes to code. Further evidence could, of course, be brought to this result by extending the qualitative analysis carried on during Task 3 to a wider portion of the sample, besides the winning projects. If this further inquiry confirms that the field of the political constituted through software architecture tends to exert more resistance to change and innovation than that constituted through text, some noteworthy implications could be drawn.

Notably, the confirmation of these results would offer evidence to those arguments according to which current ICT developments represent the beginning of a phase of technological enclosure, rather than the beginning of a new phase of expansion (see Lovink 2007; O'Reilly 2005). As a matter of fact, if we label as 'progressive' those software architectures that remain open to the potential for change, that strive to maintain the procedures whereby the community get assembled porous, that do not a priori reject the potentiality for new elements to enter the assemblage, then we should conclude that in the 2000s ICT have witnessed a trend towards their conservative application. Far from allowing a higher degree of participation of the Outside, for instance, user-generated-content-based platforms have embedded into code the rules that non-members have to follow in order to become members, that is, those same rules that in mailing lists and forums were overtly negotiated among peer participants. The extreme example is represented by blogs: media designed in order to structurally exclude Otherness.

These latter results stimulate new pressing questions. First, what are the instruments at the disposal of social sciences when it comes to investigate the field of the political constituted through software architecture? Second, if we are really going to enter a cycle of technological enclosure, what are the challenges that Internet studies have to face?

As to the first question, in paragraph 1.1.3 we have reviewed David Silver's three-steps classification of Internet research. While critical Internet culture and media studies correspond to the third phase that focuses on the right to access the Internet, the 'political' aspects in the design of interfaces and other meta-issues, most sociological studies are included in the second stage, focused on virtual communities and online identity. This distinction is due to the understanding of the 'social' as a peculiar type of substance, so that sociological approaches have concentrated on the 'social aspects' of techno-social assemblages, leaving the 'technical aspects' to computer science.

However, now that Science and Technology Studies have defined the social not as a substance, but as a movement of association, it is time that social studies, too, develop techniques to trace how technological objects participate in the course of action whereby the social is reassembled. That is, it is time that sociology, media studies and humanities contaminate not only their objects of study, but also their epistemological insights. On one hand, sociology could lend media studies its attention towards the scientific reliability of on field research; on the other hand, it could benefit from humanities' – and in particular post-structuralism's – understanding of textual accounts as handles to objectively grasp reality (and not only to 'subjectively interpret' it). On another hand, media studies could provide social sciences and humanities with specific knowledge about each distinct medium. Finally, both media and social studies would benefit from cultural studies' suspicion towards (both technologically and socially) deterministic explanatory models and linear patterns of evolution.

On this latter regard, a bridge over disciplines is built by the resemblance between sociologist Bruno Latour's use of the puppets metaphor to overcome deterministic explanations and media theorist Tetsuo Kogawa's use of the lines metaphor to distinguish interactive media from broadcasting ones. Despite the differences in language, both authors aim at going beyond those approaches according to which action proceeds one-way, transported from one point to another along 'strings' or 'lines' where nothing happens. Conversely, by affirming that 'something happens along the strings' or that 'lines are not always tight but loose', these authors argue for the necessity to think action (and inter-action) as a 'chain of encounters':

Given what [sociologists of the social, as opposed to sociologists of associations. *NoA*] meant by 'outside', namely the constraining power of context or the causal determination of nature, there was not the slightest chance for plug-ins to deposit anything *positive* inside the actor. Structural forces had to do most of the work – give or take a few small marginal adjustments by the individuals. In their fanciful theory of action, this was the only way sociologists [of the social] had imagined that the string of the puppeteer's hand could activate the puppet. But [...] the relationship between puppeteers and their puppets is much more interesting than that. [...] Something happens along the strings that allow the marionettes to move. [...] What was wrong with the metaphor of the marionettes was not their activation by the many strings firmly held in the hands of their puppeteers, but the implausible argument that domination was simply *transported* through them without translation. [...] The puppeteer still holds many strings in her hands, but each of her fingers is itching to move in a way *the marionette* indicates. (Latour 2005a, 214-6. *Emphasis in the text*)

The Internet and cable media depend on lines. Lines relate to binding, weaving, and streaming. They can bind audience up into a tightly integrated "network", a marionette-like circuit. However, *lines are not always tight but loose. Loose lines weave webs*. In the weaving-weaved web, the signal does not cast itself but streams by itself. Casting is an one-way process while streaming is interactive: streaming in and back. (Kogawa 1999, 104. *Author's emphasis*)

Actually, an increasing number of scholars is working to fill the gap between sociology, humanities and media studies. In this research we have reviewed Danah Boyd's work on social networking sites and their regimes of access and visibility. Furthermore, Carlo Formenti's last work is a theoretically thick contribution in this direction (Formenti 2008). From another perspective, Daniels (2002) traces the parallel histories of art and media from French Revolution to the present day. Thanks to its interdisciplinary approach, this work shows how most modern media, from telegraph to the Internet, have come to accomplish different functions that were previously fulfilled by art, and how art has worked as a stimulus in the development of communication technology. Not to forget Latour's own incursions into art (Latour 2005b; Latour and Weibel 2002). By translating ANT's insights into the domain of digital communities, for its very limited part, this research has tried to provide some minor contributions in this direction, as well.

As far as the second question is concerned, an answer requires to further widen our gaze. One could say that, originally, 'digital community' was one of the types of assemblages into which the Habermasian public sphere got embodied when – in late Modernity – the monopoly of (both physical and virtual) public spaces was taken away from the Nation-State and partitioned into multiple assemblies.

However, this partition has implied the fact that also non-democratically elected actors can set the procedures whereby people are legitimized or not to take part in those same assemblies. Saskia Sassen talks on this regard of the huge power merging into the hands of those non-democratic institutions that exert regulatory functions over global financial markets (Sassen 2006, 184-271). Similarly, Stefano Rodotà talks of a 'Lex Informatica' thanks to which private actors can decide the future of that commons that the Internet is by setting its standards.

Under this perspective, mapping the multiple meanings which over the 2000s the notion of 'online community' has been acquiring turns out to be a strategic task. If online community is one of the shapes that the public sphere has been taking at the end of XX century, then its progressive taking over by

business actors that look at it as a mere productive resource should reveal what is actually at stake in the clash between old and new languages.

It is no more a question of 'assuring the access' to digital media, in the name of 'empowerment', to those sectors of the global population that are excluded from them, nor a question of teaching disadvantaged people languages and skills that have been developed elsewhere, and not even a question of fostering voluntary labour in the name of 'freedom' or 'friendship'.

The challenge of a truly democratic and open knowledge society passes through making the multiple assemblies wherein the rules of the game are established as much accessible, public and transversal as possible. Visualization tools like *Issue Crawler* and, in general, the cartography of the social aim exactly at including the highest number of social actors into the arenas wherein controversies take place. Not only: they are instruments which do not remain in the exclusive hands of social scientists, but which can be used by social actors themselves, especially by those who encounter more obstacles in finding tools to understand and face complexity.

Therefore, the further developments of a research on contemporary digital communities cannot pass through anything else but the design of similar tools and their implementation on the battlefield of the global city.

Appendix

List of Boxes

Box 1 – The manifesto of the ‘No Screw Tube’ campaign numbering seven good reasons not to upload videos on YouTube-like Web 2.0 platforms.

Box 2 – Detailed explanation of Leximancer’s rationale

List of Documents

Document 1 – Model of entry form for the participation in the Prix Ars Electronica’s Digital Communities competition [see below]

Document 2 – Analysis sheet [see below]

Document 3 – *Akshaya* submission form [see below]

Document 4 – *Proyecto Cyberela – Radio Telecentros* submission form [see below]

Document 5 – *The World Starts With Me* submission form (extracts) [see below]

Document 6 – *canal*ACCESSIBLE* submission form [see below]

Document 7 – *Electronic Frontier Foundation* submission form [see below]

Document 8 – *Free Software Foundation* submission form [see below]

Document 9 – *Teletreet* submission form [see below]

Document 10 – *New Global Vision* submission form [see below]

Document 11 – *Overmundo* submission form (extracts) [see below]

Document 12 – *dotSUB* submission form [see below]

Document 13 – *Open Clothes* submission form [see below]

List of Figures

Figure 1 – Intensive classification

Figure 2 – Extensive classification

Figure 3 – Logical intersections between ‘online community’, ‘network’, ‘group’

Figure 4 – Comparison of concept distribution by year

Figure 5 – Leximancer’s Concept Statistics window

Figure 6 – Ars Electronica 1979. Festival opening with Robot SPA 12. Courtesy: Ars Electronica

Figure 7 – Festival Ars Electronica 2000, *Klones* exhibition by Dieter Huber (A). Author: Sabine Starmayr. Courtesy: Ars Electronica

Figure 8 – Front of the new Ars Electronica Center. Author: rubra. Courtesy: Ars Electronica

Figure 9 – Ars Electronica artistic director Gerfried Stocker presenting the second edition of the Digital Communities competition. Author: rubra. Courtesy: Ars Electronica

Figure 10 – Leximancer’s map for Task 1. Bird’s eye

Figure 11 – Task 1: more central concepts

Figure 12 – Co-occurrence pattern for the concept ‘online community’

Figure 13 – Task 2. More central concepts

Figure 14 – Leximancer’s map for Task 2. Bird’s eye

Figure 15 – Temporal trend for ‘art’

Figure 16– Temporal trend for ‘media’

Figure 17 – Temporal trend for ‘information’

Figure 18 – Temporal trend for ‘work’

Figure 19 – Temporal trend for ‘software’

Figure 20 – Temporal trend for ‘technology’

Figure 21 – Temporal trend for ‘research’

Figure 22 – Temporal trend for ‘radio’

Figure 23 – Temporal trend for ‘rural’

Figure 24 – Co-occurrence between ‘software’ and ‘free’/‘open’/‘social’

Figure 25 – Co-occurrence map for ‘information’

Figure 26 – Co-occurrence map for ‘city’

Figure 27 – Co-occurrence map for ‘work’

Figure 28 – Co-occurrence list for ‘work’

Figure 29 – Co-occurrence map and concept list for ‘art’

Figure 30 – Visualization of the Overmundo network of mediators

Figure 31 – Map of winning Digital Communities

List of Tables

Table 1 – Resume: from epistemological assumptions to techniques of data collection and analysis

Table 2 – Analytical techniques used for Task 1

Table 3 – Leximancer settings for Task 1

Table 4 – Techniques used for Task 2

Table 5 – Leximancer settings for Task 2 [see below]

Table 6 – Method for analysis sheet creation (Pozzato 2001)

Table 7 – Number of projects submitted in 2007 to Prix Ars Electronica by category [see below]

Appendix

Table 8 – Prix Ars Electronica's prize pursue by type of prize [see below]

Table 9 – Ranked Concept List for Task 1 [see below]

Table 10 – Co-occurrence list for 'online community' [see below]

Table 11 – InfoRapid Search & Replace's results for A = DIGCOM&group&!network (Hypothesis A < B) [see below]

Table 12 – InfoRapid Search & Replace's results for B= DIGCOM&network&!group (Hypothesis A < B) [see below]

Table 13 – InfoRapid Search & Replace's results for C = group&network (Hypothesis C = 0) [see below]

Table 14 – InfoRapid Search & Replace's results for C = group&network&DIGCOM (Hypothesis D = 0) [see below]

Table 15 – Ranked Concept List for Task 2 [see below]

Table 16 – *Proyecto Cyberela – Radio Telecentros*. Variations in the role of radio, ICT and gender concerns following the advent of digital media

Table 17 – Summary of the theories of action associated with 'empowerment'

Table 18 – Comparison among EFF, FSF, Telestreet/NGV

Table 19 – Classification of winning projects according to orientation to business, relationship between online and offline interaction, focus of interest, centralized/distributed technology used.

Table 20 – Analysis of the websites of the winning projects according to the degree of visibility of the Outside allowed by the technologies used

Material related to chapter 2

Document 1 – Model of entry form for the participation in the Prix Ars Electronica's Digital Communities competition

COMMUNITY PROJECT	
Name of Project:	
Web Address of the Project:	
Project Details	
	Objectives:
	Language and Context:

Tracing back Communities

	Project History:
	People involved in the project:
	Lessons learned:
Technical Information	
	Technological basis:
	Solutions:
	Implementations:
	Users:
	Licence:
Statement of reasons:	
Planned use of the prize money:	
Personal Information of Representative of the Project	
	Name:
	Address:
	Organization:
	Experiences:

Document 2 – Analysis sheet

Descriptive categories	Operative questions	Index
Project objective(s)		A
Goals	What is the goal(s) that the project aims at achieving?	A1
Source of boundaries	To what element does the entry form appeal in order to depict the community as a stable, taken for granted assemblage?	A2
Actors involved		B
Addresser	Is there any entity that designed/developed the project?	B1
Addressee	Is there any identifiable target of the action of the Addresser?	B2a
	Are Addresser and Addressee clearly distinguishable?	B2b
Anti-groups/anti-actants	Are there anti-actants that interfere with the course of action in a negative way?	B3
Actants as mediators Vs. intermediaries	Is there any entity that contributes with some competences to the course of action?	B4
	Does the actant trigger further actions/mediations?	B4a
	Does it activate new participants?	B4b
	Does it introduce a bifurcation in the course of action?	B4c
	Does it 'transport' (shift) or 'translate' (modify) what it is supposed to carry?	B4d
	Is the output predictable starting from the	

Appendix

	input? Does the actant determines some other event? How long is the chain of action? How many passages can be counted?	B4e B4f B4g
Professional mobilized	Are there professionals (journalists, social scientists, statisticians) quoted as part of what makes possible the durable definition of the community?	B5
Spokesperson	Do the spokespersons that speak for the group existence – namely, the author of the entry form – appear as agents in the account?	B6

Table 5 – Leximancer settings for Task 2

Leximancer settings			
Setting	Description	Value	Explanation
Pre-processing Phase			
Stop-word removal (yes/no)	Remove words in the predefined Stop List from the data	yes	
Edit stop-word list	It allows to check the words that were counted as stop-words and remove them from the Stop List	no additional changes in the stop-word list	
Make folder tags (do nothing/make folder tags/make folder and filename tags)	This parameter is very important when comparing different documents based on their conceptual content. It causes each part of the folder path to a file, and optionally the filename itself, to be inserted as a tag on each sentence in the file. These tags will be included as concepts in the map. Thus, inspecting the links formed with the other concepts can allow the comparison of the content of the various folders	make folder tags (folders named as year of submission from 2004 to 2007)	Since the task is about comparing the textual documents by the year of submission, this selection allows the generation of year-related tags that will appear in the map
Automatic Concept Identification			
Automatically Identify	Enable/disable the automatic generation of	yes	This selection enables the automatic generation

Tracing back Communities

Concepts (yes/no)	concepts. By disabling this option, only concepts defined by the researcher will be shown on the map		of concepts on the basis of frequency. This setting allows the researcher not to set any pre-defined concept in advance
Total concept number (automatic/1-1000)	The number of automatically selected concepts to be included in the map	automatic	
Number of names (automatic/1-1000)	Of the number of concepts chosen, what is the minimum number of concepts that should be forced to be names	automatic	'Automatic' allows a natural mixture by not forcing names into the list
Concept Editing			
TAB Auto Concepts	It allows to delete, merge and edit automatically extracted concepts	- Merge all plurals and derived morphological forms	
TAB Auto Tags	It allows to delete, merge and edit folder tags	year-related tags	
TAB User Defined Concepts	It allows to create, delete, merge and edit manually defined concepts	none	I do not set concepts in advance
TAB User defined tags	It allows to delete, merge and edit user defined tags	none	
Thesaurus Learning			
Learn Concept Thesaurus (yes/no)	Turning off the thesaurus learning will prevent Leximancer from adding additional items to the concept definitions	yes	Vast data se: need not only for simple keyword search, but also weighted accumulation of evidence
Learning Threshold (1-21)	This setting allows to control the generality of each learned concept. Increasing the level will increase the fuzziness of each concept definition by increasing the number of words that will be included in each concept	14 (normal)	
Sentences per Context Block (1-5)	This option allows to specify the sentences that appear in each	3	value for most circumstances

Appendix

	learning block		
Break at paragraph (ignore/break at paragraph)	This setting is to prevent context blocks from crossing paragraph boundaries	yes	
Learn Tag Classes (yes/no)	Turning it on will treat Tag classes as normal concepts, learning a thesaurus definition for each	no	
Concept Profiling			
Number to discover (0 - 1000)	It indicates how many extra concepts should be discovered	0 (feature disabled)	
Themed discovery (Concepts in ALL/ ANY/ EACH)	It selects how the discovered concepts should be related to the pre-defined concept set		
Classification and Indexing			
Entities	Entities are the concepts that are actually shown on the conceptual map, and represent the top-level of classification of the text	Concepts Tag classes	
Properties	Properties, in contrast to entities, are concepts that are checked for co-occurrence with the entities, but are not displayed on the cluster map		
Kill classes	Kill classes are concepts that if found in a classified block of text, cause all other classifications of that block to be suppressed		
Required classes	Required classes are classifications that must be found in blocks of text, or else the blocks are ignored		
Classification Settings			

Tracing back Communities

Sentences per context block (1 – 100)	Specify how many sentences per tagged text block	3 (default)	
Break at paragraph (yes/no)	Prevent tagged context blocks from crossing paragraph boundaries	yes	
Word Classification Threshold (0.1-4.9)	This threshold specifies how much cumulative evidence <i>per sentence</i> is needed for a classification to be assigned to a context block	2.4 (default)	
Name Classification Threshold (2.6-5)	This threshold specifies the minimum strength of the <i>maximally weighted</i> piece of evidence to trigger classification	4.5 (default)	
Blocks per Bucket (1-100)	A bucket contains one or more consecutive context blocks. If the sum of the evidence of a particular concept within the bucket is below a threshold, the specific concept tag is removed from all the sentences in the bucket	1	
Mapping and Statistic			
Conceptual Map			
Map Type (Linear/Gaussian)	The Gaussian map has a more circular symmetry and emphasises the similarity between the conceptual context in which the words appear. The linear map is more spread out, emphasising the co-occurrence between items	Linear	
Concept Statistics			
Attribute Variables	It allows to set attribute variables from the Concept List	'art', 'city', 'government', 'group', 'local', 'mobile',	

Appendix

		'network', 'open', 'political', 'public', 'web'	
Category Variables	It allows to set category variables from the Concept List	TG_2004_TG TG_2005_TG TG_2006_TG TG_2007_TG	

Material related to chapter 3

Table 7 – Number of projects submitted in 2007 to Prix Ars Electronica by category. Source: Ars Electronica press office

	Entries
Computer Animation / Film / VFX	509
Digital Communities	409
Digital Musics	591
Interactive Art	387
Hybrid Art	473
u19 – freestyle computing	891
[the next idea] Art and Technology Grant	69
Media.Art.Research Award	45
Total	3,374

Table 8 – Prix Ars Electronica's prize pursue by type of prize. Source: Ars Electronica press office

	Euros
5 x 1 Golden Nica (10,000 euros each)	50,000
1 x 1 Golden Nica (u19 freestyle computing)	5,000
5 x 2 Awards of Distinction (5,000 euros each)	50,000
2 Awards of Distinction in u19 (2,000 euros each)	4,000
2 Merchandise Prizes in u19 (500 euros each)	1,000
[the next idea] Art & Technology Grant	7,500
Media.Art.Research Award	5,000
TOTAL	122,500

Material related to chapter 4

Document 3 – Akshaya submission form

*URL of the work: * www.akshaya.net

Project Details

*Objectives: * I. Universal ICT Access

As a first step, a network of Akshaya e-centers is being set up across Kerala. Run by entrepreneurs, each centre will be a self-sustaining unit with the e-literacy programme assuring baseline revenue. Akshaya centres are being set up within 2 km of every household. 4500-6000 Akshaya Centers will be developed in the State with the objective of one centre for 1000 families. The Centres are being connected through broadband wireless technology. Development of these centres provide direct sustained employment to at least 25,000 people in the IT Sector. Each centre is equipped with 5-10 computers, printers, scanners, Webcam, other peripherals and necessary softwares to carry out various ICT based services. In addition, IP phones are also being made available in these centres.

II. E-Literacy

Akshaya e-centres provide training that not only familiarise people with the basics and scope of IT, but also ensures hands-on skill in operating a computer, using the internet and so on. Aimed at creating a 100% literate state, the programme aims at providing E-literacy to one person in each of the 64 lakh families in the State. A carefully designed content module designed in local language is for 15 hrs. for each person is a major highlights of the programme. The process of providing the skill sets shall lead to the creation of a long lasting relation between the Akshaya centres and the families in the catchment, which on a macrom level will generate a state wide data warehouse and repository; of relevant content for the families.

III. Creation of Micro ICT Enterprises.

The Akshaya e-centers are being set up under the sole initiatives of selected entrepreneurs, who have come forward from among the local community. These centres are set up as pure entrepreneurial ventures, with an investment of Rs. 3-4 lakhs per centre. The entrepreneur spirit has been fully utilised for developing the Micro enterprise in the ICT sector. As in the case of any conventional enterprise, these entrepreneurs display their skills and resources in ICT enabled sectors, content creation, fulfilling the communication needs of the community, e-enabling farmers, scholars, medical practitioners, in the community for total development. These entrepreneurs are fulfilling their social commitment to impart e-literacy to his community members.

IV. Creation of ICT Service Delivery Points

The Akshaya ICT access points are envisaged to provide G2C, G2G, C2C and G2B information interchange and dissemination. Akshaya centers shall function as decentralized information access hubs that cater to a range of citizen needs that has an inbuilt integrated front-end. Collection of utility bills and taxes now done through Friends centres is being integrated with Akshaya centres, thereby minimizing the transaction cost to the citizens

*Language and context: * Malayalam,Kerala,India,Asia country

*Project History: * Akshaya begins to bridge the Digital Divide. It inaugurated on 18th November 2002, by president of India. The akshaya centres set up by May 2003 and literacy campaign completed by January 2004. Board band connection provided by August 2004 and E-payments started

*People: * Chief Minister, Secretary-Information Technology, Director, Kerala State IT Mission, District Collector- Malappuram, Mission coordinator and Assistant Mission coordinator

*Lessons learned: * At present, the number of Akshaya centres per Panchayat is 5- and each centre has 1000-1500 families. The lesson learnt from the pilot is that the number of Akshaya centres can be limited to 2-4 per Panchayat and the number of families in the catchment can be thus 2000-2500 per centre. This would raise the sustainability of the centres.

Technical Information

*Technological Basis: *

infrastructure at Center-5 pc and peripherals, Wireless Radio

NOC- full fledged NOC

OS-various- Linux at NoC and some centers, Windows

Connectivity- WiFi-802.11 b

* Solutions: * E-payment software

rural e-commerce through net banking

* Implementations: * Kerala

*Users: * Citizen of Kerala

*License: *

*Statement of Reasons: * Akshaya was the most ambitious ICT programs ever attempted in a developing society. The project is expected to generate a network of 6000 information centres in the state, generate about

Appendix

50,000 employment opportunities and throw up investment opportunities to the tune of Rs.500 Crores, all within a time span of 3 years.

*Planned use of prize money: * For creating more content service delivery platforms in Agriculture, Health and Education

Document 4 – Proyecto Cyberela – Radio Telecentros submission form

*URL of the work: * www.cemina.org.br

Project Details

*Objectives: * La meta del proyecto es promocionar la sustentabilidad social y economica de los radio telecentros que fueron creados y ampliar el proyecto creando nuevos radio telecentros en otras comunidades para poder capacitar a cada vez mas mujeres en las TIC y beneficiar a toda la comunidad involucrada.

*Language and context: * El surgimiento de las tecnologías de comunicación y información (TIC) ha transformado las relaciones sociales, la educación, el trabajo, la economía y hasta el comportamiento. Lo mas interesante es que mismo las mujeres siendo la mayoría de la población en el mundo (y tambien en la población brasilena) el perfil del usuario de Internet ahùn es prioritariamente del hombre blanco que habla el idioma ingles, tiene cerca de 35 años, es de nivel universitario y de classe A e B. En Brasil, 72% de las mujeres nunca utilizo una computadora, 86% nunca tuvieron contato com Internet y 30% no sabe lo que es. Esos datos son para demostrar que, asi como se pasa con derechos y oportunidades (como educación, condiciones de trabajo, entre outras) – que las mujeres tambien en relación a las TIC necesitan buscar condiciones de igualdad.

Vale decir que hasta las Naciones Unidas ya reconocieron como estratégico el acceso de las mujeres a las TIC, y ese dato aparece en tercer lugar en orden de prioridade, después de la pobreza y la violencia.

Fue pensando en esa estrategia que el Proyecto Cyberela invistio en capacitación para mujeres en el uso de las TIC y en los

rádios-telecentros. La distancia de los grandes centros urbanos acentua la dificultad de acceso a recursos técnicos como la manutención de las máquinas y la reposición de los equipamientos.

La baja escolaridad entre mujeres y jovenes de esos municipios es alta, 30% de las mujeres son consideradas analfabetas funcionales. A causa del poco incentivo y de la poca oportunidad, los empleos son cada vez mas escasos. En ese sentido también la mejor calidad de los programas de radio es mui importante, ya que permite un desempeño activo de las personas que no son capaces de utilizar las herramientas digitales en corto y médio plazo.

Otra necesidad importante que el proyecto contempla es la capacitación para proyectos de generacion de ingresos, fomentando el emprendedorismo.

En 2000, el índice de emprendedorismo femenino en el país era de 29%; em 2003, ese número subio para 46%. En el Nordeste, region mas pobre, existe una amplia diversidad de actividades artesanaless desarrolladas por mujeres que pueden ser potencializadas por la geración de empleo e renda utilizando ferramentas digitais.

Las acciones propuestas em ese proyecto dirigen se específicamente a mujeres, que de acuerdo con todos los indicadores de desarrollo humano, son los segmentos que mas sufren los efectos de la pobreza y de la desigualdad y además enfrentan el desafío de vencer un prejuicio histórico de las mujeres que no fueron educadas para lidar con máquinas.

*Project History: * Fundado en 1990, Cemina apuesta en el desarrollo de liderazgos comunitarios femininos como agentes de transformación social. El medio rádio fue escogido para esa finalidad por ser el medio de comunicación mas simples y barato, y que atinge 98% de la población, siendo que las mujeres son las mayores oyentes. CEMINA elabora programas especiales e campanas que son distribuidas para emisoras de todo el país. Desde 1992, realizo mas de 300 capacitaciones para comunicadoras populares y liderazgos de mujeres que querian aprofundar el contenido de género de sus actividades radiofónicas. La Red de Mujeres de Rádio (RMR) nacio del deseo de las participantes de los cursos de Cemina de fortalecer sus actividades y cambiar experiencias. Son cerca de 400 comunicadoras de todas las regiones del país que atuan en las rádios comunitarias, educativas y comerciales. Después de diez años promoviendo los derechos de las mujeres a través de la rádio, el cenário impuesto por las nuevas tecnologías de información y comunicación (TIC) presento un grand desafío para Cemina: o las mujeres hacen parte de ese proceso o serian una vez mas excluidas de la participación igualitaria de la sociedad. Incluir las mujeres en el universo de la informática y de la internet, sin dejar de utilizar el medio radio, passo a ser prioridad para la institución. En 2002, el Programa Habla Mujer gano status de rádio en internet. A www.radiofalamulher.com ayudo a intensificar la estrategia de traer las mujeres para ese universo com la disponibilización de contenidos de radio con foco de género y derechos humanos en Internet. La estrategia seguinte fue la apertura de un concurso direcionado a la Red de Mujeres de Rádio con el objetivo de facilitar el acceso de las comunicadoras de rádio a las TIC. Vinte y nueve comunicadoras fueron seleccionadas a partir de su capacidad de movilización y servicios prestados a la comunidad a través de la actividad en las rádios, pero la ausencia de proveedores de acceso de internet en muchas ciudades impidio el suceso de todas.

Esas comunicadoras recibieron computadores con programas de edición de áudio, fueron capacitadas para utilizarlos, ganaron conexión de banda ancha y asistencia técnica por seis meses con el objetivo de mejorar la calidad de la producción de los programas de radio y facilitar el intercambio de áudios via internet, promoviendo asi la creación de una nueva red, la Red Cyberela. Esa iniciativa conto com el apoyo del Programa Infodev del Banco Mundial, de la Fundación Kellogg y de Unesco.

A seguir, Cemina empenzo a expandir la conexión de banda hancha para toda la comunidad a través los rádio-telecentros, que visan promover la capacitación para que todas las mulheres esten incluidas digitalmente, además

Tracing back Communities

de proporcionar acceso a recursos educativos y de generación de ingresos por Internet a la población de esas comunidades. Esas radio-telecentros creadas por Cemina también proporcionaron la mejora de la producción de radio, principalmente a nivel de investigación y de edición de los programas y campañas.

*People: * El equipo principal creador del proyecto:

.Thais Corral, coordinadora general de Cemina

.Madalena Guilhon, coordinadora de comunicación

.Silvana Lemos, coordinadora ejecutiva del Proyecto Cyberela

.Denise Viola, editora del site www.radiofalamulher.com y capacitadora

[...]

*Lessons learned: * A partir de la experiencia con los radio-telecentros que fueron creados por el proyecto, la sustentabilidad social es impactante debido a que las comunidades se apropiaron del nuevo conocimiento para su propio desarrollo.

La mayor dificultad encontrada hasta ahora es la sustentabilidad económica que depende de la situación económica de cada lugar y es la etapa en la cual estamos invirtiendo.

Technical Information

*Technological Basis: * Todos los radio-telecentros que ya están funcionando tienen 10 computadores usados, un servidor, una impresora multiuso, conexión a una antena banda ancha, softwares para edición de audio y toda la infraestructura necesaria para su funcionamiento.

* Solutions: *

* Implementations:*

*Users: *

*License: *

*Statement of Reasons: * Dentro de todos los proyectos conocidos de inclusión digital, el Proyecto Cyberela - Radio Telecentros, de Cemina es el único que incluye la perspectiva de género y el apoyo de órganos públicos y privados en su implementación asociados a una ONG. Tiene como objetivo no solo la inclusión digital pero también el fortalecimiento no solo el movimiento de las mujeres como de la comunidad local, Además, se preocupa con la capacitación técnica y la sustentabilidad de los radio-telecentros a largo plazo.

*Planned use of prize money: * El dinero del premio será usado para proporcionar más capacitación técnica y de contenido a las mujeres comunicadoras que ya están involucradas en el proyecto Cyberelas - Radio Telecentros.

Document 5 – *The World Starts With Me* submission form (extracts)

URL of the work: www.theworldstarts.org

Project Details

Objectives: Objectives are: - increase knowledge on the whole spectrum of sexual / reproductive health, - systematically promote positive attitudes, - coping with negative social and cultural norms and skills regarding a range of relevant sexual health topics By promoting self-esteem and gender equality and by empowering young people with information and skills regarding their (sexual and reproductive) rights the curriculum supports young people and in particular young women in helping them to safeguard and enjoy their own sexual and reproductive health. - learning basic computer skills Butterfly Works experienced that learning the computer is not only sexy to young people, it also is a necessity to be able to get any place in the formal economy and most of all it gives them an ego-boost. Especially designing on the computer stimulates curiosity to learn more. 'Working with the content' really helps to internalise information and stimulates young people to have a positive approach towards sexuality as a starting point in developing technical and social competencies (eg, negotiation skills, contraceptive use, the right to refuse sex). Common goal The common goal of WSWM is to improve the sexual health of young people in East Africa while providing skills relevant to the job market. To show the need: - the prevalence of HIV/AIDS in Uganda is extremely high - young people are disproportionately infected and affected by HIV - teenage pregnancy is high (over 50% of girls become mother before the age of 18) - abortion is practiced (although its illegal), often in unsafe conditions (a significant part by young people) - sexual activity starts at a young age, between 10 - 14 years old and is often forced - contraception and condom use is low and adequate sexual health knowledge and - skills are often missing - poverty leads often to offering sex in exchange for goods or money - sexual intimidation by teachers is common (the 2nd largest number of forced sex situations) Although Uganda started early in the AIDS epidemic with education, current education is mainly restricted to AIDS prevention and is information based. This not only led to an information fatigue, also other sexual health problems hardly get attention. Discussion and talking about sexuality are still taboo. Community interest Many people in African communities want access to relevant, detailed information on SRH issues and look for ways to deal with the SRH problems. Schools and teachers see their former students becoming infected with HIV and current students having problems and wish to reach as many students as possible with programs they feel comfortable with while taking into consideration that they are generally overworked and underpaid. Young people want relevant information, to be taken seriously, some badly want help, they are keen to be involved in new developments such as computers.

Language and context: Context of Uganda WSWM is developed for Uganda but with the idea of implementing the program in the whole of English speaking East Africa. During a test workshop (May 2003), 2 Kenyan peer educators estimated the adaptability of the program for urban Kenya. In April 2004 the Ugandan version will be piloted in Nairobi in Kenya, observed by local SRH experts. After the pilot further adjustment- and implementation

Appendix

plans for Kenya will be made. Tanzanian pilot partners are being looked into. Important for the context of Uganda and the whole of East Africa is the educational system: - methods used and lesson materials are old - groups are large (60/100 students in 1 class is common) - self-expression and own initiative is not encouraged The WSWM aims at behaviour change, which needs a more participatory and experiential learning approach (using experience and activities). Context of technology use The integration of ICT is in urban East-Africa is a fact. For most formal jobs, basic ICT skills are a necessity and the computer has even entered the informal job-market. Missing out on basic ICT-skills is not an option for talented and motivated youth. Providing relevant and youth friendly ICT training that attracts youth to experiment more with computers is therefore also a necessity. Schools and Telecenters with computers (see map of the current Telecenters in Uganda) provide computer training, which are mostly international basic courses with little match to the relevant context of the Ugandan youth. Besides, integrated computer training is rare. That leads to inefficient use of computers. The computers are often few, old and lack of good maintenance, the connection is unreliable. They are however available in schools and Telecenters. WSWM is developed in full awareness of the technical possibilities: - web based: cheap to spread and to update, light to download, burnable on cd-roms, flash player provided - non-computerised alternatives: exercises have a computerized and non-computerised version, can even be done using pencil/paper or natural available material (a methods manual based on locally available material is provided). - softcopy/hardcopy: if the group is larger than 4 times the number of pcs available, a hardcopy backup is provided to make sure a large number of students can participate

[...]

People: Core team There are five main groups involved in the project, they are; - The WSWM development and program teams; Butterfly Works and WPF, Netherlands - The individual schools, teachers and students who use / run the program in Uganda co-ordinated by SchoolNet Uganda - The SRH partners for knowledge and counselling back up; WIDE and FPA, Uganda - The SRH partner for online counselling; Straight Talk, Uganda - The NairobiBits project, who run the pilot in Nairobi, Kenya Butterfly Works www.butterfly-works.org is the group who developed the program together with various parties (see appendix for bio). BW develops and produces concepts which create opportunities and insight for young people in challenging circumstances, using multimedia. WPF is World Population Foundation www.wpf.org is a Dutch foundation which supports programs regarding sexual and reproductive health and rights in developing countries. School Net Uganda www.schoolnet.co.ug links and supports 52 schools and telecenters in Uganda with computers. WIDE is a small sexual and reproductive health and training office of young trainers in Uganda. FPA, Family Planning Association has offices and clinics all over Uganda supporting people in sexual and reproductive health issues. NairobiBits project Kenya www.nairobibits.com is a digital design school for young people from slum areas in Nairobi. (This school was founded by Butterfly Works in 2000). Users The users of the program are potentially all English speaking African youth. The current users are young people 12-19 yrs mainly in Uganda and secondly in Kenya. They are facilitated by their co-users of the program, school teachers and youth workers. Uganda The schools in Uganda are all part of the Schoolnet Uganda network. Each school has a computer lab with 10+ average to old pcs and a medium to fast internet connection. The teachers are highly motivated and youth friendly. Students are aged from 12-19 and selected by their peers to take part. They agree to inform their peers on what they learn as a pre-condition. Students from the pilot program assist the teachers with new students. Schools are from all over Uganda (see map). They are a mix of day, boarding, all girls, all boys, mixed, poorer, richer, urban and rural. Kenya The users in Kenya are members of slum area youth organisations in Nairobi co-ordinated by NairobiBits. They are both in and out of school youth ages 14 to 16. The trainers of the program at NairobiBits are themselves youth from the slums who have become web designers and teachers. They also have a history of peer education activities. The trainers in Kenya took part in the preparatory training in Uganda and due to their relatively advanced ICT skills will be involved after more SRH training in adapting the program for Kenya. In this way not only the program users but the making of the program will migrate to East Africa. Characteristics of users The users are young people and of course not a homogenous group. On the computer front they have mostly no previous computer experience. They can read and write and have followed at least some formal education. They speak English as a second language, schooling is in English. The education style followed in East Africa is denoted as 'Chalk and Talk' with the teachers as holder of knowledge which the students must copy exactly for good results. Thus students are happily surprised by the active role they get to play in the program. Young people are interested in youth culture such as reggae music, hip hop and gospel and current clothing fashions. Many users are Christians or Muslims and find their faith an important element in their lives. Young East Africans are often dogged by poverty and lack of opportunities either to get educated or work. In urban areas they have to work hard to avoid crime. In rural areas lack of information and sadly even food is a problem. The teachers and youth workers in the program are generally those who are interested in supporting the young people around them in difficult decisions and issues in their lives, getting to know young people better and interested in new and ICT teaching styles. See also the section on common goal on SRH issues. Restricted use Due to the sensitive nature of the topic and the embedded nature of the program, access is not so much restricted as supported. 'live' support is given to teachers and students who do the program. The teachers who run the program get a week long training in sexual and reproductive health and counseling issues and using e-learning in the classroom. They have regular on and offline contact with a local coordinator teacher who is also running the program in his school. They are backed up by WIDE trainers who are professional sexual and reproductive health trainers who they can call to or email for advice. The students are supported in that when they come forward with issues related to the course such as sexual abuse or the need for a HIV test they can be referred to the counselling services or medical centers of FPA (Family Planning Association). In Kenya where the program is being piloted the program is similarly supported. As the program grows the support procedures are being developed.

Document 6 – canal*ACCESSIBLE submission form

*URL of the work: * <http://www.zexe.net/barcelona>
Project Details

*Objectives: * El objetivo del canal*ACCESSIBLE consiste en trazar en Internet la cartografía de los puntos inaccesibles de la ciudad, a partir de las fotografías que 40 personas con distintas discapacidades físicas envían desde teléfonos móviles a la Web del proyecto.

Tracing back Communities

Barcelona es una ciudad orgullosa de su urbanismo y arquitectura pero un grupo de personas discapacitadas provistas de teléfonos móviles, nos demuestran que no todo es tan radiante como la ciudad nos quiere hacer creer.

Desde finales de diciembre 2005 los emisores han documentado y publicado en Internet 3.336 barreras arquitectónicas y otros casos de inaccesibilidad agrupados en las distintas categorías: escalones, escaleras, aceras, transporte, wc, incivismo y casos de mala adaptación. Cada caso enviado a la Web es geo-referenciado de manera que aparece la imagen junto al respectivo mapa local y su correspondiente comentario de audio o texto.

Los emisores se reúnen semanalmente en consejos de redacción asamblearios en los que se deciden las zonas de la ciudad a documentar, se analiza la evolución de los canales existentes y se votan las propuestas para la creación de nuevos canales. Un ejemplo de canal en emisión aceptado en una de estas reuniones es el canal*SI, donde los emisores publican casos de buena accesibilidad.

El proyecto canal*ACCESSIBLE se inició a finales de diciembre 2005 y las emisiones siguen hasta el fin de marzo. La asamblea de emisores ha decidido crear una asociación para la continuidad del proyecto después de esa fecha.

El proyecto ha conseguido movilizar a la comunidad de personas con discapacidad física y también sensibilizar a la opinión pública, gracias a la amplia difusión que ha tenido en los medios de comunicación tradicionales y en Internet. El ayuntamiento de Barcelona cuenta con información directa de los usuarios afectados para tomar las medidas necesarias para corregir los desajustes de accesibilidad de la ciudad.

*Language and context: * El proyecto canal*ACCESSIBLE se realiza en la ciudad de Barcelona y es bilingüe: catalán y castellano. El contexto específico es el de la problemática de accesibilidad con la que a diario se enfrentan las personas discapacitadas que habitan en Barcelona.

Hay 117.745 personas que sufren discapacidades físicas en Cataluña y 8.000.000 en la comunidad europea. A partir de la misma problemática, el contexto puede llegar a ser mucho más amplio.

*Project History: * El proyecto se basa en la posibilidad de dar voz y presencia en Internet a colectivos que sufren discriminación. Se trata de facilitar tecnología móvil de comunicación a estos grupos para que puedan expresarse en Internet, sin tener que esperar la visión que de ellos nos dan de los medios de comunicación preponderantes. Son los propios afectados quienes nos explican quienes son y cuales son sus expectativas.

Con un historial de investigación que arranca en 2003, se han realizado proyectos en <http://www.zexe.net> con los siguientes colectivos:

- 2004 Taxistas de la ciudad de México
- 2005 Jóvenes gitanos de Lérida y León, España
- 2005 Prostitutas de Madrid
- 2006 Personas discapacitadas de Barcelona

En la actualidad se preparan proyectos con otros colectivos de Manila(Filipinas) y Sao Paulo (Brasil)

*People: * Concepto y dirección del proyecto: Antoni Abad
Programación: Eugenio Tisselli
Coordinación: Mery Cuesta
Asistente de coordinación: Pilar Cruz

El proyecto canal*ACCESSIBLE cuenta con 40 emisores discapacitados que transmiten regularmente en Internet desde teléfonos móviles con cámara integrada.

El acceso como emisor esta restringido a los emisores registrados aunque la convocatoria es abierta a todas las personas con discapacidades físicas. El sitio Web del proyecto es de acceso público.

*Lessons learned: * Por las anteriores experiencias con taxistas mexicanos, jóvenes gitanos españoles y prostitutas de Madrid, cuando un colectivo discriminado que no esta acostumbrado a ser escuchado, obtiene la posibilidad de expresarse en Internet mediante teléfonos móviles, lo primero que sucede es que no encuentra que contenidos comunicar. Pero paulatinamente cada colectivo ha ido encontrando los temas que mas le afectan y también se ha organizado en grupos emisores dedicados a cada canal consensuado en las reuniones periódicas. Al final siempre han conseguido articular y publicar canales temáticos específicos del colectivo y a menudo constituir un reflejo de la sociedad que les envuelve.

A menudo ha habido que programar especialmente para adaptar el dispositivo a las necesidades comunicativas específicas de cada colectivo, como es el caso del canal*ACCESSIBLE, que incluye los planos locales de cada caso de inaccesibilidad publicado.

Technical Information

*Technological Basis: * La base tecnológica del dispositivo consiste en el envío desde teléfonos móviles con cámara integrada, de mensajes multimedia a direcciones específicas de email, que corresponden cada una a un determinado canal temático de los publicados en la página Web del canal*ACCESSIBLE.

El dispositivo en el servidor Linux consiste en una base de datos mSQL-php que gestiona los contenidos enviados a cada uno de los canales publicados.

* Solutions: * El dispositivo del canal*ACCESSIBLE utiliza el software de envío de mensajes multimedia (mms) presente en los teléfonos con cámara integrada.

La interpretación de estos envíos en la base de datos del servidor consigue ordenar los contenidos en canales temáticos públicos en Internet.

El dispositivo cuenta también con la posibilidad de edición en línea de los contenidos publicados: eliminación de mensajes, cambio de posición de mensajes y edición de texto.

* Implementations:* El dispositivo ha sido utilizado por los siguientes colectivos:

- 2004 Taxistas de México DF

Appendix

2005 Jóvenes gitanos de Leída y de León (España)
2005 Prostitutas de Madrid

En la actualidad esta siendo utilizado por 40 personas discapacitadas de la ciudad de Barcelona.
Se preparan nuevos proyectos en Manila (Filipinas) y en Sao Paulo (Brasil)

*Users: * Los usuarios potenciales del dispositivo son colectivos o comunidades victimas de discriminación que de esta manera consiguen expresarse en total libertad, sin tener que esperar las opiniones que de ellos vierten los medios de comunicación preponderantes.

*License: * Se planea realizar una distribución pública del dispositivo cuando esté más desarrollado.

*Statement of Reasons: * Porque a partir de tecnología móvil e Internet abre la posibilidad de que colectivos o comunidades discriminados puedan expresarse por si mismos y en total libertad.

*Planned use of prize money: * 1/3 Investigación de necesidades de comunicación distintos colectivos y diseño de las interfaces resultantes. 1/3 Programación de base de datos e implementación de nuevas funcionalidades. 1/3 Gastos de viaje y estancia para la preparación de nuevos proyectos en Manila (Filipinas) y en Sao Paulo (Brasil).

Document 7 – Electronic Frontier Foundation submission form

*Description of project: * The Electronic Frontier Foundation digital community -- begun in 1990 and growing until the present day -- champions freedom in our networked world. EFF works through our website, blog posts and podcasts, online video projects, "action alerts" that encourage personal political involvement, our email newsletter, the promotion of debates and other interactive events, and online guides and other information for writers and artists who want to express themselves digitally.

The people involved in this project include EFF staff, more than 13,000 EFF members around the globe, more than 46,000 subscribers to our newsletter, and more than 68,000 users of our Action Center.

We address those who create and communicate in the electronic world -- through digital art, blogs and other online composition, computer code, or other means -- as well as those who are interested in technology policy covering free expression, innovation, and privacy.

*URL of the work: * <http://www.eff.org/>
Project Details

*Objectives: * From the Internet to the iPod, technologies are transforming our society and empowering us as speakers, citizens, creators and consumers. When freedoms in this vibrant new electronic environment come under attack, the Electronic Frontier Foundation is the first line of defense for the public interest -- getting people informed and involved in protecting expression and innovation on the electronic frontier. Our website and other resources are used to identify, discuss, and then act on the critical digital freedom issues as they develop in cyberspace.

*Language and context: * EFF's communications are primary in English, with parts of our website translated into Spanish. Our multi-national staff has assisted groups from Peru to Russia, and regularly tour and speak internationally. Our headquarters and legal arm are in San Francisco, with additional offices in Brussels, Toronto, and Washington, D.C. EFF staff also attends meetings of the World Intellectual Property Organization in Geneva in order to fight for the public interest in digital rights on a global level. EFF has inspired companion organizations in Finland (Electronic Frontier Finland), Australia (Electronic Frontiers Australia), Canada (Electronic Frontier Canada); our Blue Ribbon Internet Freedom campaign inspired sister campaigns in Australia, Belgium, Canada, France, Portugal, the United Kingdom and South Korea.

*Project History: * The Electronic Frontier Foundation was founded in July of 1990 in response to a basic threat to free expression. As part of an investigation into "hackers," the United States Secret Service seized all electronic equipment and copies of an upcoming book from a games book publisher named Steve Jackson Games, even though the business had no connection to the "hacking." When the computers were finally returned, employees noticed that all of the electronic mail that had been stored on the company's electronic bulletin board computer had been individually accessed and deleted.

In an electronic community called the Whole Earth 'Lectronic Link (now WELL.com) several informed technologists understood exactly what freedom of expression issues were involved. Mitch Kapor, former president of Lotus Development Corporation, John Perry Barlow, Wyoming cattle rancher and lyricist for the Grateful Dead, and John Gilmore, an early employee of Sun Microsystems, decided to do something about it. They formed an organization to work on digital freedom issues raised by new technologies.

As EFF's lawyers began to work through the U.S. courts, other staffers began building an international community. In October of 1990, EFF opened a forum on CompuServe, an early online computer service. In 1991, EFF began publishing its online newsletter EFFector. Also in 1991, we sent out our first "Action Alert," asking U.S. citizens to contact their senators to oppose new restrictions on encryption. In 1994, EFF took its electronic community to the World Wide Web, creating a website which became the hub of our activism and education work. A year later, EFF started creating off-line educational forums and organizing opportunities for supporters. EFF was the first organization to hire an "online activist", and pioneered many of the techniques that political and civic society groups use on the Net today. EFF continues to spearhead new projects in both the physical and digital world, but the website remains the home base for coordinating and disseminating information to our community.

Tracing back Communities

*People: * EFF's staff of 27 is the core team -- including activists, technologists, artists, policy analysts, attorneys, and event coordinators. EFF has more than 13,000 members around the globe, as well as more than 46,000 subscribers to our newsletter, and more than 68,000 users of our Action Center. All sorts of people participate in our community: artists and writers concerned about freedom of expression in their digital work, innovators creating new ways to communicate and connect through technology, activists who want to work with their local or national governments to change policy, journalists looking for insight into important developments in the digital world, and dissidents concerned with the role of technology in oppressive regimes. While the EFF staff creates or edits most of the content on the public EFF website, we are constantly soliciting input and advice from the community, and web posts are as likely to point outward to others' work as they are to point inward to EFF's projects. Everyone is encouraged to use the work on EFF.org as part of their own activism and art, and the site is published under a Creative Commons license.

*Lessons learned: * We have learned that a community of educated people can help influence technology policy on the electronic frontier and make the digital world safe for free expression and innovation. For example, in 1996, thousands of websites turned their sites black and linked back to EFF to protest a U.S. Internet censorship law. Later that same year, EFF launched the Blue Ribbon Campaign so web users could signal their opposition to online censorship. Much of the U.S. law was overturned, and the Blue Ribbon Campaign is still running strong. In 2004, EFF supported the development of Tor, technology that facilitates anonymous communication. Tor now has hundreds of thousands of users who are making the system more robust, and protecting whistleblowers, dissidents, and other activists who need to communicate electronically in a safe and private way. This year, we have also learned the power of using YouTube, MySpace, and other social networking sites to increase the reach of our community. Last summer, we posted an animated video we created about restrictive intellectual property proposals to YouTube, and so far it has had more than 1 million views.

We've also learned that the power of the Net can trump the power of vested politics. For a short period of time, EFF attempted to lobby the American Congress to take digital freedom seriously. Our experience of the restrictions of traditional engagement with established powers -- and the political possibilities of empowering an online community free from those compromises -- brought us back to online activism and the virtual world.

Technical Information

*Technological Basis: * The Electronic Frontier Foundation tries wherever possible to use open source (libre) software. We have been firm advocates of the free software approach to development, and have supported open source projects such as Tor (<http://tor.eff.org/>) and MythTV/GNU Radio (we represented them in deliberations at the European DVB organization).

*Statement of Reasons: * For more than 16 years, the Electronic Frontier Foundation online community has been building and evolving to serve our ever-changing electronic environment and to protect our digital rights. The stakes have grown higher every year, as more people around the world depend on digital communication for artistic and personal expression, companionship, activism, and political change. EFF has served -- and will continue to serve -- as a supporter and enabler of this global digital community.

*Planned use of prize money: * EFF would use the prize money to continue our activism and education work on our website and around the world.

Document 8 – *Free Software Foundation* submission form

*Description of project: *

*URL of the work: * <http://www.fsf.org>, <http://www.gnu.org>

Project Details

*Objectives: * Our main objective is to achieve software freedom for everyone. The FSF is dedicated to promoting computer users' rights to use, copy, study, modify, and redistribute computer programs. We promote the development and use of free software, particularly the GNU operating system, used widely today in its GNU/Linux variant; and free documentation. FSF and GNU Web sites and discussion mailing lists are places where people can come to coordinate their efforts toward these goals. All of these efforts improve the ability of people to share knowledge with each other and build communities around that knowledge.

*Language and context: * The FSF itself is based in the United States, but the free software movement we organize is truly international. FSF President and founder Richard Stallman speaks all over the world on behalf of the cause, and delivers his speeches in English, French and Spanish. As of this writing in March 2005, he has visited Belgium, Bolivia, Chile, Colombia, Iceland, India, Italy, Norway, and Syria --- since the beginning of the year. Around 30% of FSF donating associate members live outside the United States.

Free software development today is global; the version of GNU/Linux that we recommend is developed in Argentina. Free software usage today is also global. GNU/Linux is used in cluster supercomputers and in cheap computers for the masses, used to run much of the Internet, used for advanced research, used by the World Social Forum and by large brokerage companies, and used in the Telecenters of Sao Paulo that provide computer access to poor neighborhoods. It has been adopted for state schools in parts of Spain and India.

*Project History: * FSF's founder, Richard Stallman, had participated in the cooperating community of the 70s while working at MIT. When this community collapsed under pressure for commercialization, he decided to build a new community of cooperation.

Appendix

However, with the proprietary software that had become the norm in the 80s, cooperation was illegal or impossible. To redistribute the software verbatim is illegal; to improve it without a copy of the source code is impossible. To have a community would require replacing that proprietary software with "free software"-----software that users are free to change and redistribute (and run). So Stallman set out to develop a free software operating system, called GNU. Most operating systems are developed for technical or commercial reasons; GNU is the only operating system ever developed specifically for the sake of giving computer users the freedom to cooperate.

Development of GNU started in January 1984. The FSF was founded in

October 1985 to raise funds for GNU development, and for promoting users' freedom to share and change software. Over the years, thousands of developers on several continents have joined in developing GNU. As part of developing GNU, we also developed the concept of "copyleft", a way of using copyright law to defend everyone's freedom instead of to take it away. This is implemented in the GNU General Public License (GNU GPL), whose first version was released in January 1989.

In 1992, the kernel Linux was released as free software under the GNU GPL. As GNU was then missing only a kernel, GNU and Linux together made a complete operating system, which now has tens of millions of users. This was an early example of a new form of growth: other projects developing software and releasing it as free software, inspired by the community that we built.

***People:** * Richard Stallman, the founder of the FSF and free software in general, remains the head of the Foundation and the conscience and soul of the movement. There are now hundreds of GNU programs, each with its own core team of developers. Thousands of volunteers around the globe contribute. Any free software user can contribute to a project, regardless of that user's educational background, socioeconomic status, or geographical location. All that matters is the ability to write code or documentation and the willingness to share the result and what was learned in its creation. Volunteers who don't write code or documentation help by engaging in political activism and telling other people about free software, using the structures and campaigns run by the FSF as their focus.

***Lessons learned:** * We have realized how hard people are willing to work for a cause they believe in. We have learned that, when given a chance and something to study, many different kinds of people can and will become programmers and make useful contributions to the free software knowledge base. What has been difficult, once free software reached the point of being functionally superior to proprietary software, and began to attract users and developers who sought practical benefits alone, is keeping attention focused on the importance of freedom to cooperate. That is currently our highest priority.

Technical Information

***Technological Basis:** * The GNU/Linux operating system consists of the GNU system plus the Linux kernel. Of the many programs we developed for GNU (called "GNU programs"), the most commonly used are Emacs, gcc, gdb, make, and mailman. Other free software programs that have grown in response to the GNU Project include Apache, Perl, Python, MySQL, and PHP.

*** Solutions:** * Proprietary software is a social problem: it is distributed in a scheme to keep users divided and helpless. Users of proprietary software must take what is handed to them, and pay license fees for that privilege. The source code that would tell them how the software works is usually a secret; sometimes they get a copy of it for a large payment, but they are not allowed to tell anyone else what they have learned from it.

Free software solves this problem by giving users the freedom to redistribute the software, to study the source code, to change it, and to publish their changes. They are also free to use and pass on all that they have learned from reading the source code. Users of free software pay no license fees, and can modify the software to suit their needs. With the source code they are better equipped to handle problems that may arise. In handling them, they create and share knowledge that will help other people as well.

*** Implementations:** * The GNU Project developer tools (the Emacs text editor, the gcc C compiler, the debugging tool gdb, and the build tools make and autoconf, among many others) are used worldwide among software developers. GNU Project packages, as well as much other free software, are widely used in academia in general and academic research in particular. The Internet runs largely on free software: the Apache server, the MySQL database, and the Perl, Python, and PHP scripting languages run a huge number of Web sites. The vast majority of free software is licensed under the GNU General Public License. Many of the technological projects nominated for this award have surely used our licenses or been inspired by the community we built.

***Users:** * Software developers benefit by improving their software, through feedback and contributions from user/developers all over the world.

Schools and non-profits that are hard-pressed financially can get quality software that they can customize to fit their needs exactly without paying licensing fees.

Talented youth with access to a PC running GNU/Linux can learn the art of software development in the most effective way: by reading large programs, and making improvements in them. In the past, only the best universities offered the opportunity to learn this way.

Commercial users that value support and are ready to pay for it can get better support for their money with free software. This is because support for proprietary software is usually a monopoly, but support for free software is a free market. Programmers in all regions can benefit from the opportunity to provide support for free software, since that is not monopolized by a rich foreign corporation.

End users benefit by being able to use software that has been vetted and improved by users around the world, not just the team of one company. They also benefit from the fact that free software develops under the control of its users, rather than under the control of one developer. Of course, only programmers know how to write changes, but everyone can then use them, and all participate in choosing which directions of development are generally adopted. Because free software rejects the "priesthood of technology" by inviting everyone to read the program's "sacred

Tracing back Communities

text"—its source code—users are encouraged rather than forbidden to learn whatever amount of programming knowledge they might wish to acquire.

Society as a whole benefits by eliminating the power of software developers over the users of that software, and by avoiding the concentration of wealth that proprietary software brings.

The precedent for knowledge-sharing set by the free software movement is now inspiring sharing and cooperation in other areas, such as reference works, academic publishing, music, and the arts. Wikipedia is one example.

*License: * The FSF developed the two major licenses that free software is released under: the GNU General Public License (GNU GPL) and the GNU Lesser General Public License (GNU LGPL). Thousands of programs have been released under these licenses. Both of these licenses guarantee the freedom to copy, modify, and distribute the software released under them. As a measure of how widely it has been adopted, roughly 90% of the almost 4,000 packages in the FSF's Directory of free software (which includes programs licensed under a number of free software licenses) are under the GPL or LGPL. The FSF also wrote the GNU Free Documentation License (GFDL) for free manuals and reference works. For many GNU programs, contributors also assign copyright for their work to the FSF. This means that the FSF serves not only as author of the licenses under which most free software is distributed, but also as trusted holder of the copyrights on many community-generated works. This role is vital, as it empowers the FSF to use its resources to act as legal enforcer of the freedoms individuals in the community want protected as their work is distributed.

It is hard to know how many users there are, since everyone can redistribute free software and with no obligation to inform us. Estimates of the number of computers running GNU/Linux range up to 100 million.

*Statement of Reasons: * The GNU Project, through developing a free software operating system and the GNU General Public License, built the free software community as we know it today. Just think about all of the various communities on the Web—most, if not all, were made possible by the ethical and practical idea of free software and the freedom to cooperate. Wikipedia, last year's winner of this prize, is licensed under the GFDL. MediaWiki, the software it runs on, is released under the GPL.

These projects, like many others, draw their contributors to a large extent from the free software community. We cannot claim credit for all of the projects out there and all of the work that went into them, but our role in intentionally building this community, in writing the licenses that these projects predominantly use, and in providing the space for this amazing growth to continue, made it possible to do them.

*Planned use of prize money: * Our newest project is a organizing a community database on the fsf.org Web site recording which models of hardware devices fully support free software. This will pressure hardware manufacturers to cooperate with free software by directing users to manufacturers that do.

We will continue all of our work in organizing the efforts of the international free software community. Specific plans in this area include maintaining our Free Software Directory, which indexes thousands of free software programs so people can locate software appropriate for their needs; creating a comprehensive list of innovations made by free software programmers; and organizing a collection of testimonials from individuals and organizations who have used free software for their work.

Another important project in our future is releasing version 3 of the GNU GPL. The new version will improve the ability of free software to spread in a context that has changed technologically a great deal since version 2 of the license was written in 1991. Finishing the new version will entail organizing a process for obtaining community feedback. We will also continue enhancing our Web site as a focal point for community discussions, protecting the integrity of the licenses and meeting the infrastructure requirements of the free software community as it continues its astounding growth.

Document 9 – *Telestreet* submission form

*Description of project: *

*URL of the work: * www.telestreet.it

Project Details

*Objectives: * Since its birth, the Orfeotv-Telestreet project has aimed at sharing knowledge and technology, giving everyone the means to practice freedom of expression by setting up citizens open editorial staffs around the street televisions or enabling people to create their own street TV. In particular, the project considers the right to access communication channels a fundamental issue for every citizen as much as the right to health care and instruction. Indeed, open access to communication channels is an expression of such freedom of information, enabling people to take advantage of their rights. The community finds its common ground above all in the discovery of multiple points of view to portray the reality surrounding it, but also in the sharing of the produced video material through the web and the broadcasting. Telestreet is a bottom-up convergence project where neighbourhood-based micro-antennas are connected each other by the broadband to share knowledge. The ultimate aim is creating relational networks and active citizenship through an integrated use of communication means, from the most traditional and common-people oriented ones to digital technology. Everyone can easily set up his own street TV and every street TV can rely on consociated-televisions collaboration. Thus, what matters is not how many people watch television but how many people communicate and speak out. Making television is the opposite of suffering it. This is what a bottom-up convergence is about: i.e. when communication re-establishes its relationship with reality. By thinking globally and acting locally, Telestreet tactically partakes reality, and by so doing every citizen reaches the opportunity to turn from passive viewer into active subject of an utterance.

Appendix

Actually, Telestreet's approach to communication induces non-professional people to experiment and create new spaces of community, in the neighbourhood as on the web. Indeed, it is the precondition that the relevant technologies are widely accessible that allows the *do-it-yourself* concept spread and hundreds micro TVs raise up.

*Language and context: * At the moment the project is being developed in Italy, Argentina, Spain. The choice of a *traditional* broadcasting channel such as air * although in combination with broadband web and satellite television * was influenced by Italy's peculiar context for communication. As a matter of fact, over 60% of Italians access information exclusively through two mainstream broadcasting networks (Rai and Mediaset), which, as a consequence, have the power to mould people's imaginary. At the same time, reading rates for newspapers and books reaches among the lowest in Europe. Thus, within such flattening of the General Intellect, mainstream television rules unchallenged.

The Telestreet circuit de-structures and re-sematises exactly the popular means par excellence, so that whoever has so far been passive has the chance to overcome such condition by turning into an active subject of communication. The result is the birth of a citizenship that becomes active as soon as it takes over the most passive-making communicative tool, the one where political and symbolic strategies of Power are greatly at stake in Italy.

*Project History: * A group of eight (intellectuals, students, filmmakers, workers) got the project going because they felt disillusioned with the Italian mediascape because of the current monopoly over television communication. Orfeotv was born on June 21st 2002, and on February 20th 2003 ' after a d-day with over 20 street televisions ' the Telestreet network was initiated.

Nowadays, there are more than 250 street TVs in Italy. Some of them are communitarian televisions, born out of some public administrators' will to implement the Telestreet project by involving their community members. Every street TV can rely on consociated-televisions collaboration as far as its legal position, technical issues, artistic and linguistic matters are concerned.

Orfeotv and Telestreet have gained great attention from people and from mainstream communication, not only in Italy. Tiny Orfeotv stimulated creativity of people coming from widely different social classes all around Italy: they have the possibility to experiment how to produce a television, rather than being overwhelmed by it.

Besides, Telestreet is acting from a 'glocal' point of view. It was part of the No War Tv project, a satellite television born during the Iraqi war and made by Italian independent journalists and media-activists. A lot of Telestreet productions on rallies were transmitted during the war by this television in order to produce different and Europe-visible information.

Moreover, it is necessary to mention that the Orfeotv-Telestreet project is illegal according to Italian laws. However, it is constitutional according to article 21 of the Italian Constitution. In October 2003 some MPs placed an item on the Italian parliament's agenda in order to allow the Telestreets some freedom at least until the phenomenon has been properly regulated.

Finally, Dutch project Next Five Minutes has recently announced the will to realise the Telestreet experience in the Netherlands. Reproducing the hybrid air/web-broadcasting model, it is going to start with the Proxvision experience.

*People: * Orfeotv's editorial staff members are 15, though a larger number of people gravitating around it. There are students willing to learn how to use new digital technologies, independent videomakers, people from the neighbourhood who recur to Orfeotv to denounce problems or to have their interviews broadcasted. Italy harbours about 250 street televisions with 10 to 15 people working around each one. Participation in the street television project takes place under the fulfilment of only three principles: anti-racism, anti-sexism and anti-fascism. Everyone is welcome to participate, without any limitation and technology is placed into everyone's hands. But above all, everyone can set up a street television, as happened with the existing ones. Orfeotv offers theoretical and technical free advice via web site as well as 'face to face'.

*Lessons learned: * One of the main achievements is the creation of an editorial staff that infused the project with new energy and a plurality of points of view. Orfeotv editorial staff produces documentaries, videos and interviews strictly linked to the area, to life in the

neighbourhood and to the city (Bologna). At the same time, it is constantly connected with the other members of the Telestreet network with whom it shares video works, information and digital technology know-how. The network also organises various events (demonstrations, audio-visual productions, meetings) of which live air broadcasting and streaming is often co-realised.

Still, there came a time when the need to belong to Orfeotv's editorial staff was felt by all participants, since, due to a generation gap, the younger had problems squaring up to the elders, as well as women to men. The issue has been solved by giving everyone the opportunity to access the technology to realise videos and to broadcast, so that everyone may transmit auto-produced material (especially young video makers), shoot and edit videos, invent formats and so on. Actually, technology ' far from being a tool for exclusion ' has become a mean to bridge the Digital Divide regarding age as well as gender.

Technical Information

*Technological Basis: * - Video. The project consists of a very simple and cheap transmitter-modulator-air signal amplifier transmitting images by means of an antenna. It takes only 0,07 watts and covers a 300 meters-wide area. We have looked for a very simple technology because we want it to be accessible for as many people and groups as possible. Therefore, it is possible to set up a street television with common instruments anyone may have at home - a digital video camera, a PC, a video recorder. Furthermore, it is also possible to use a small mixer for live directing.

- Web. The Telestreet network is setting up an Internet database, developed in xml, for all street televisions' productions, where anyone can upload their works and download the ones made by the others. The archive is a very important tool for achieving video material for the programming of each television. Thus, a web site (www.telestreet.it) has been realised using free software. It is developed in php language by means of CMS, in

Tracing back Communities

particular MD Pro. The site is an open-access tool for all the people taking part in the Telestreet project and for whoever (individuals, groups, institutions) decides to set up a street television for the first time.

- Satellite. The possibility to set up a satellite channel (or terrestrial digital channel when such technology will be the norm in Italy) is being considered. Every single independent street television will be able to broadcast its productions through this channel. The result would be a nation-wide broadcaster with fully horizontal public and democratic access, where everyone could book his or her daily airing time via the web.

* Solutions: * From a technical point of view, Telestreet does not occupy other television's channels, but uses what we call 'shadow cones', frequencies granted to commercial networks but unusable because of territorial obstacles. This means that - although not having a regular frequency - the circuit doesn't damage other televisions owning regular transmitting concessions. By so doing, Telestreet shows how raising up an antenna and broadcasting whatever you cannot watch on commercial television as well as accessing means of 'emergent democracy', is possible, cheap and easy.

* Implementations: * At the moment, Telestreet's web site presents some sections: news (where everyone can publish information regarding the mediascape, the Telestreet network, '), forum (where users can discuss about legal, technical, political, creative and organisational issues), events calendar, street TVs' database, legal and technical schedules, FAQ, Telestreet open mailing list.

Moreover, some new utilities are being implemented: self-moderated discussion area and web site for every street TV (blog), integrated system for video files upload and sharing, video play list for the TVs programming, xml-developed syndication with other news portals on media-activism (Italian and international, as well), convergence between forum and mailing list, creation of local mailing lists, database for collecting and sharing videos coming from independent areas.

*Users: * Street televisions' users are the neighbourhood's inhabitants, whereas those who use the web site and the video database are the televisions' editorial staffs, citizens, cultural associations, media-activists, people interested in setting up a street television, researchers studying the Telestreet phenomenon.

*License: * gpl, Creative Commons

*Statement of Reasons: * Television experiences transmitting with low costs have already taken place in the last years (in the Netherlands and Germany, for example). However, what is new with Telestreet concerns mainly the fact that it is a grassroots circuit implementing the convergence between a powerful socialising tool like television and a democratic, horizontal channel like the Internet. It is just combining these two means that it is possible to create social networks. We have chosen the 'Digital Communities' category because the project Orfeotv-Telestreet is creating social networks fundamental for the sharing of knowledge and for community communication projects diminishing the Digital Divide and nurturing emergent democracy. Starting with an integrated system for grassroots communication (through an air signal, the web and the broad band) citizens are able to access communication channels and become experienced with ICT. Thus, this newly gained freedom to produce communication is the necessary condition for the development of an active, critic and conscious way of being a citizen. Indeed, our aims concern the possibility to enable people to recognise their rights by means of digital and common technologies. From a theoretical point of view, the questions relates to tactical relationships between old and new media. Although it is clear that Telestreet begins as television, the centrality of social and technical networks in its development makes it a far more interesting hybrid. Television must be considered a new prosthesis and an extension of the net: but to avoid another media alternative "ghetto", the horizontality of the net must meet the "socialising" power of television. It is a truism that in our society power is more likely to exercise itself through exclusion than exploitation. Telestreet has identified the weak points in one of the main institutions that govern the process of exclusion. Tactical media are practices based on the recognition that the most powerful institutions governing exclusion are never just social but socio-technical. Telestreet has positioned itself critically at the interface connecting the social to the technological. All this takes place without any help from public institutions or private enterprises and suffers the limitations imposed on the project by Italian legislation which denies public access to communication means.

For this reason, an award would mean above all the recognition of the merits for an extremely challenging and visionary project, where the burden is born exclusively by common citizens ' since neither the Italian government nor its parliament seem to be interested in creating the right conditions to implement the freedom of expression typical of a democratic society based on ICT. An award would therefore signal a strong support for the extended right to self-expression, knowledge and public access to communication means.

*Planned use of prize money: * improvement of the broadcasting technology and of the web site's functionality. Development of the open satellite channel project (or terrestrial digital). Payment of management expenses (neither Orfeotv nor Telestreet receive any kind of funding and they mainly collect money in order to survive). Initiatives to involve neighbourhood people. Continuity to the productive routine.

Document 10 – *New Global Vision* submission form

*Description of project: *

*URL of the work: * <http://www.ngvision.org>

Project Details

*Objectives: * To create an historical archive of independent videos –To organize a distribution network through peer-to-peer, ftp servers, RSS/RDF feed - To establish a producer and distributor community which agrees on the use of the Creative Commons licenses and keep track of their activities through ad hoc blogs - To develop a publishing, archiving and distribution set of software which is available for other communities to use:

Appendix

<http://devel.ngvision.org/index> -To be a useful tools for independent television which need to share and retrieve contents (see the telestreet network)

*Language and context: * NewGlobalVision is rooted in the Italian context and is mostly in Italian but it is increasingly moving toward a European and transcontinental space.

*Project History: * NewGlobalVision was born in 2001 in a very Italian context and strongly connected with global struggles. It was born immediately after the tragic days of the G8 demonstrations in Genoa (July 2001). Those days were characterised by a clear mystification of reality by global power and a shameful censorship of information by official media. The Italian community of media-activists immediately felt the need to create a new tool to publish and share all the video materials that has been produced after those terrible days, video and images which tells other stories from mainstream media, as well as documentaries which has been censored by official TV broadcasts. From July 2001 up to now (march 2004), the project has been increasing the number of videomakers which use it to distribute their own productions. The project developed an awareness of questions connected to independent distribution, especially that of licences, proposing the Creative Commons as a possible solution. The numbers of downloads increase in a very significant way as does the variety of contents. NGV became a tool in the hands of the new born Telestreet network (terrestrial low frequency Italian pirate TVs). NGV opened itself to European and international communities, it develops RSS/RDF feed to be a tool for international video projects in a decentralized way (<http://oceania.indymedia.org/newsreal.php>). It becomes available on different peer-to-peer networks (from edonkey to bittorrent), it increases the number of ftp serves available, it develops an automatic upload system (<http://upload.ngvision.org>) which is also becoming an useful editorial tools. Last but not least, Ngvision is addressing the importance of Blogs for producers and it releases a monthly newsletter to all the users. NGV created a mailing list for the producers community, to share points of view on creation and techniques. Some data: 2002 -> 6395 visits / 106330 hits; 2003 -> 72709 visits / 1520892 hits; 2004 -> 21590 visits / 404561 hits.

*People: * Together all over Italy using a mailing list as the main mean of discussion together with internet relay chat and physical meetings. About 20 groups are involved as members and users, between them there is the ECN community which technicals resources are used by NewGlobalVision. All the individuals and groups involved have different attitudes and approaches; there are hackers and technicians who take care of the servers and develop the software paying particular attention to accessibility and videomakers and artists that are more interested in promoting the tools and creating a community as an alternative to the official media. All the people involved in the project are strongly driven by a desire for the autonomy and independence of communication, and of sharing knowledges. Because of these reasons access to the project is open and promoted through workshops and laboratories.

*Lessons learned: * The objective was to have space and bandwidth to archive and distribute independent video productions. We also had to address the problems related to downloading: how to have enough bandwidth to let many users download the same video file? The problem was solved setting up a network of ftp servers that are automatically updated. A file is named `ngv_place_language_date_name.avi/mov` so that it is easy to find on peer-to-peer networks (edonkey, bittorrent). This system is actually working, but not in all its possibilities. The culture of peer to peer is still to be disseminated amongst ngv users.

Technical Information

*Technological Basis: * New Global Vision is based on a set of software developed in a unix system environment and it can be used by any other archiving and distributing project. FTP servers and peer-to-peer technologies (edonkey- bittorrent) are used to distribute the files. Data mining tools are also used and a distributed database system is to be implemented.

*Users: * The users and beneficiaries of NGV are the coming communities of independent producers, not only Italian but international and European. Amongst its users are also all those who love to download and watch good documentaries or movies from the Internet or to access a good source of direct information. It is important to remember that the beneficiaries are also the media networks such as the Italian Telestreet network and satellite TVs all over the world, as long as they can access NGV as a source for their programs.

*License: * The set of software of Ngvision is released under the GPL licenses, while Creative Commons licenses are applied to all the video inserted in the NGV archive

*Statement of Reasons: * NGV is a young project but in 4 years it has grown really fast with up to 300 videos uploaded?. - NGV is a pioneer in video archiving and distributing communities and up to now is one of the few really functioning systems - NGV is a decentralized tool which works for everyone who wants to create a digital community around video sharing (see oceania newsreal which uses ngv RSS/RDF feed) - Due to actual political situation NGV is a crucial tool for the Italian independent media community - NGV is not static but keeps developing, especially for giving tools to producers to exchange information – NGV helps in the process of transforming the user into the producer - NGV is not only a digital community but reaches into the non-digital as it is a tool to create a common space of information which are broadcasted on terrestrial frequencies or screened in cinemas.

*Planned use of prize money: * The money will be used to pay for hardware implementations, hard disks and a new server which will be used for live streaming and streaming of a cycle of the last five uploaded videos. The streaming will be done in mpeg4 using a Darwin server. The streaming will be automatically broadcast by any independent television who wants to connect.. NGV already experimented with the streaming but we need a dedicated server to do so. The money will be also used to organize series of workshops and laboratories all over Europe to share the necessary skills to be part of the NGV community. To promote sharing of skills is a very important thing that helps the network of independent pirate tv (telestreet) and alternative media to connect to one other. Ngv is also preparing a catalogue with all the available videos. We would like to use the money to print and distribute the catalogue to promote screenings in different venues.

Tracing back Communities

Document 11 – *Overmundo* submission form (extracts)

*Description of project: * Overmundo is at the same time a community and a software tool. Its goal is to promote the emergence of the Brazilian culture, in all its complexity and geographical diversity. Overmundo was created by a group of four people, who coordinated the efforts of other 35 collaborators. Overmundo is open to anyone at large.

Overmundo today consists of the largest community of people in Brazil aimed at promoting a big and never-ending conversation about the Brazilian culture. Using "web 2.0" tools, individuals and groups from all over the country write articles, post pictures, films, music, texts, describing their own places and communities, and creating national visibility for cultural events and scenes all over the country. Before Overmundo was created, these possibilities seemed almost unimaginable. A quick glance at one single article at the website demonstrates the diversity and comprehensiveness of the conversations taking place on it. It is easy to perceive the multiple diversities brought together by Overmundo: diversities of age, gender, race, geography, and above all, worldviews.

*URL of the work: * www.overmundo.com.br

[...]

*Project History: * The origin of Overmundo goes back to 2003, when the anthropologist Hermano Vianna was invited by Minister of Culture Gilberto Gil to think of a project that would integrate cultural movements and scenes from all over Brazil. Hermano then created the project Movimento (Movement), that would count with the help of collaborators spread all over Brazil, creating a network of individuals and institutions dealing with cultural production.

The project was then modified by the Ministry of Culture, and eventually became the general framework for the Pontos de Cultura ('Cultural Hotspots') project successfully developed by the Minister.

Nevertheless, the total potential of the Movimento project remained yet unexplored. In 2005, Petrobras, the largest oil company in Latin America, and the most important financier of the arts in Brazil (every year Petrobras invests more than US\$120 million in financing cultural projects in Brazil) invited Hermano Vianna to help solving a problem.

The problem was that Petrobras was financing a broad range of cultural productions in Brazil, but the majority of those productions were simply being lost, or quickly becoming unavailable to the public. For instance, Petrobras was financing the recording of CDs by numerous artists, music compilations from indigenous communities, documentaries, short-films, books, plays and all sorts of cultural manifestations. These cultural artifacts were in general printed in limited issues (sometimes only a few cds were printed, or a few books). Quickly the cds were distributed, very few copies were left, and the majority of the public still had permanent point of access to those cultural productions. Accordingly, Petrobras realized that its huge investments in culture, such as recording an album, or restoring a compilation of traditional music, were becoming ineffective. There was virtually no use of digital technology or the Internet as a distribution channel or for archiving.

Hermano Vianna was then invited by Petrobras to develop a project to build a 'digital magazine', a website who would compile and store all the cultural production sponsored by Petrobras. Hermano then invited a team of three other collaborators to discuss the invitation. The team came to the conclusion that they would have no interest in developing this 'digital magazine'.

Accordingly, the team decided to make a counter proposal to Petrobras. They would create a website where Petrobras could include its sponsored cultural products. However, that should not be the focus. Instead, the group said it was interested in trying to solve a bigger problem of the Brazilian cultural context. The group would only accept the invitation if the website was entirely collaborative, and open to any one in the country to contribute with articles, and any other sort of cultural productions. In other words, the group proposed to use the tools of the so-called 'web 2.0', but mixing them up in order to solve the particular goals they had in mind.

After a couple of weeks, Petrobras agreed to give complete and absolute freedom for the group to develop the website.

The strategy proposed by the group (named as 'Group of Ideas Movimento') creating the best possible environment for collaboration and participation. Nevertheless, Movimento had it clear that the challenge was not only technological, but also of community-building. How to build a community in a country with more than 186 million people, and with vast geographical diversity?

The strategy devised for building the community was as follows. Movimento would hire one contributor in each of the Brazilian states (27 in total). These contributors would be responsible for writing periodically to the website for a period of 18 months, about the culture of their own states. The contributors would also be responsible for 'agitating' and 'energizing' other contributors in their own states to start contributing to the website as well. The contributors of this group were called 'Overmanos' and 'Overminas' (meaning 'Overbros' and 'Oversistas').

The assumption of Movimento was that after 18 months Overmundo would have been able to achieve enough content and momentum to continue the task by itself, only with the support of a decentralized community, built with the original help of the Overmanos and Overminas. To achieve that, the budget for the project would cover the payment of all Overmanos and Overminas, 28 in total, one for each state of Brazil and two for the state of Sao Paulo. The total budget of the project, including technological development and sustainability of the community of collaborators for 18 months was of US\$1 million.

The technological development of the site started in June 2005. A national meeting with the selected Overmanos and Overminas was made in October 2005 (a weblog reporting the meeting can be found at www.overmundo.blogspot.com.br). After the meeting, the group of 28 overmanos and overminas were hired in November 2005, to start producing the initial content for the website. A temporary website was posted online, based on a wordpress platform. The website would publish 1 single article everyday, until the official launch of the website, programmed to March 2006.

Accordingly, for more than 4 months, one article was published per day at the Overmundo website, at the time, a conventional weblog. That helped calling a little attention to the project, and gave the Movimento Group time to work on the technological tools that would be used in the final website.

Appendix

On March 2006, the official Overmundo website was launched, with all its collaborative tools, making it possible to receive decentralized contribution of anyone. Also, the editorial board of the website was also collaborative: the community itself was responsible for deciding what to publish or not at the website, and also what should have more visibility and make the headlines of the website.

Three months after the launch, the Overmundo model and strategy proved to be extremely successful. The success was so surprising, that the original group of paid overmanos and overminas proved to be no longer necessary: almost 100% of the content of the website at that time started to be produced by decentralized contributions. Nevertheless, the overmanos and overminas were kept for other additional 3 months, but changing completely their role. Instead of producing content to the website, the overmanos and overminas became exclusively 'agitators', disseminating the idea of collaboration and bringing people interested in creating visibility to their cultural activities to contribute to the website.

The community was then built, and it was a very comprehensive one. Not only there was a huge demand for dissemination of culture (almost as if culture always wanted to emerge, but did not have the means for doing that), but also people started quickly to realize that by posting contributions at Overmundo they were opening a channel for cooperation, for visibility, for building alliances, and for receiving commentary and help from people from all over the country.

As a result, the US\$1 million budget predicted to fund the overmanos and overminas was no longer necessary in its totality. Only a portion of it had been used after 6 months of the project, and the project was already clearly successful. Petrobras was so happy with the results that they actually inquired Overmundo whether it would like to receive more funding for the full year of 2007 (since the original budget covered the website activities only until July 2007). Unanimously, the group refused to receive more money, and instead, extended the duration of the project until the current budget allows it to continue.

Finally, the development of Overmundo was divided in three phases:

- 1) technological development and launch of the website
- 2) building the community and expanding its outreach and collaboration among its members
- 3) finding ways of self-sustainability for Overmundo

Phases (1) and (2) have been successfully completed. The challenge ahead of Overmundo is now how to achieve its own self-sustainability, becoming independent from any external financiers. The Movimento Group is currently focused on this task.

[...]

*Solutions: * At Overmundo, the community is king. It produces all the content, and it also decides what content to publish, and what content should gain more visibility.

For achieving this goal, Overmundo incorporated a broad range of 'web 2.0' tools.

As mentioned above, the goal was that 100% of the content was produced by the community and edited by the community. But then, how to achieve a quality control system?

The strategy for that was primarily inspired by the Kuro5hin (www.kuro5hin.org). Every item that is contributed to Overmundo goes first to the 'Editing Line' (Fila de Edição). For 48 hours, the item remains on it 'quarantined'. During this period, any user can make suggestions and comments. The author decides whether the item should be modified or not according to the suggestions. Only the author can modify the item (different from the Wiki model).

After the 48-hour period, the item goes to the 'Voting Line' (Fila de Votação). During this period, users of the website can vote whether they liked the article. The voting system is similar to Digg (www.digg.com). However, there is an important difference. At Digg, the order of the items does not correspond to the order of the votes (if one goes to the Digg page, there will be articles with less votes on top of articles with more votes). The reason for that is that the algorithm used by Digg is not open - only the website knows the true 'points' that an article needs to be on the top. Overmundo adopts a system of 'Overpoints', that is, each vote gives the article a certain number of overpoints. And the position of the article at the website is determined according to the number of Overpoints. Accordingly, the algorithm is clear.

In order to be finally published at the website, the article has to receive a minimum amount of Overpoints. Once the minimum amount of points is achieved, the item is published at an intermediary position. From that position, the article can continue to be voted, moving to the top and eventually achieving the headline of the website. If the item is not voted, time takes its Overpoints away, and the article is brought down.

Overmundo also uses a system of 'karma', by which users can earn reputation points at the website. Users with higher 'karmas' will have more Overpoints than users with smaller karmas, and therefore, more editorial powers. Accordingly, the karma system is helping Overmundo to build a decentralized governance model for the website site. The 30 users with the highest karmas are now being invited to a separate discussion list. Our goal is that in the near future, the whole governance of the website will rely on these 30 users, which will be renewed periodically, according to their karma variations along time.

In order to view all the other websites considered by Overmundo in its design, it is worth checking the credits webpage of the website at the following address:

<http://www.overmundo.com.br/estaticas/creditos.php>

Document 12 – *dotSUB* submission form

*Type of project: * browser based tool enabling any film or video to be subtitled into any language without any downloads or training, in an open source wiki type of way. The final video, with all languages, is viewable and embeddable from any website in all languages.

*Description of project: * VISION

Tracing back Communities

dotSUB provides tools that change language barriers into cultural bridges. By putting seamless video subtitling technology into the hands of individuals, dotSUB tools make stories from every culture accessible to every culture, fostering intercultural experience, communication, and connection.

MISSION

As a result of the Internet's ability to connect us to our most distant neighbors, we are now able to share our collective creative output as never before. With words, images, music, and video moving across the globe in a matter of seconds, we collectively possess a new innovative power for cross-cultural communication.

The emergence of relatively inexpensive digital video technologies and low cost storage and bandwidth have radically democratized our ability to tell compelling stories. We are limited only by our imaginations and our neighbors' capacity to understand the language that weaves the images together.

We believe that video is a universal language and the world's appetite is increasing as viewing and showcasing technologies continue to evolve. Until now however, the ability to seamlessly subtitle videos in multiple languages has curbed the opportunities for creators and viewers to maximize the potential of the medium.

As educators, governments, NGOs, and corporations increasingly create, utilize and rely on moving images as crucial communication tools, we believe that there is a tremendous opportunity for a new technology tool that increases the potential of digital video. Additionally, as traditional media companies exercise more control over distribution of content, dotSUB provides an alternative approach for new media models to make content available to more people.

RATIONALE

Regardless of whether one is a professional filmmaker, a corporate trainer, a teacher with a new curricular idea, a student with a burning passion, or an organization with a specific message, video has become the creative medium of choice. It is transformative and unique. It encourages a kind of creative energy that fosters new thought and new creativity and new pathways for identifying and solving problems.

Using the dotSUB tools, filmmakers and owners of film content have the ability to see their work subtitled in multiple languages and thus made available to much larger global viewing audiences. Even when distribution agreements are in place, films are not often translated into more than a small handful of languages. Rather, they are made available in languages with easily recognized market audiences.

*URL of the work: * dotsub.com

Project Details

*Objectives: * TO FACILITATE CROSS CULTURAL COMMUNICATION THROUGH VIDEO AND FILM, IN ANY LANGUAGE, USING A RADICAL NEW BROWSER BASED TOOL

*Language and context: * THERE IS NO GEOGRAPHICAL LOCALE FOR THIS PROJECT, AS IT IS LANGUAGE NEUTRAL. IT ENABLES VIDEO OR FILM FROM ANY LANGUAGE TO BE SUBTITLED INTO ANY OTHER LANGUAGE ? ALL GENRES, SUBJECTS, LENGTHS, FORMATS, ETC.

*Project History: * THE PROJECT WAS BORN OUT OF MY FRUSTRATION WITH THE DIRECTION THE WORLD WAS GOING IN THE PAST 5 ? 10 YEARS. AS DIGITAL TECHNOLOGY WAS ENABLING QUICKER, CHEAPER AND FASTER GLOBAL COMMUNICATION, THE WORLD WAS GROWING FURTHER AND FURTHER APART. I WANTED TO CREATE AN ELOQUENTLY SIMPLE TOOL TO ENABLE ANYONE, IN ANY COUNTRY, SPEAKING ANY LANGUAGE, ASSUMING WE HAD THE PERMISSION OF THE RIGHTS HOLDER, TO BE ABLE TO SUBTITLE ANY FILM OR VIDEO FROM ONE LANGUAGE INTO ANY OTHER LANGUAGE WITH OUT ANY DOWNLOADS OR TRAINING.

IT STARTED IN 2004, TOOK 2-1/2 YEARS TO DEVELOP THE TECHNOLOGY, AND WE HAVE BEEN EXPERIMENTING WITH ITS POSSIBLE APPLICATIONS AND USES FOR THE PAST 8 MONTHS.

*People: * 3 PEOPLE ON THE CORE TEAM ? MICHAEL SMOLENS ? CHAIRMAN AND CEO, LAURIE RACINE ? PRESIDENT, AND THOR SIGVALDASON ? CTO. THE PROJECT IS TOTALLY OPEN.

*Lessons learned: * OUR PROJECT IS A DOUBLE PARADIGM SHIFT IN THINKING FOR MOST PEOPLE, AS THE ABILITY TO EASILY, QUICKLY AND INEXPENSIVELY (MOSTLY FREE) ABILITY TO SUBTITLE VIDEO INTO OTHER LANGUAGES HAS NEVER EVEN BEEN A REMOTE DREAM. AS MORE AND MORE ORGANIZATIONS/COMPANIES BEGIN TO UNDERSTAND ITS POTENTIAL, THE VARIETY OF USES FOR OUR TOOL IS INCREASING WEEKLY.

Technical Information

*Technological Basis: * A BROWSER BASED TOOL, REQUIRING NO DOWNLOADS. HUMAN BEINGS ENTER TEXT INTO THEIR BROWSER (SEE DEMO AT <http://dotsub.com/demo/>) - AND THE TEXT IS STORED IN A DATA BASE ON DOTSUB SERVERS. THE VIDEO FILE CAN RESIDE ANYWHERE, AND THE VIDEO PLAYER AND FUNCTIONALITY ARE EMBEDDABLE. WHEN A SPECIFIC LANGUAGE IS CHOSEN, IT SELECTS THAT TEXT AND RENDERS IT ON TOP OF THE VIDEO AS IT IS PLAYING.

*Solutions: * ALREADY ANSWERED ABOVE

*Implementations: * VIDEO PODCASTS, NON PROFITS, NGO'S, CORPORATIONS

*Users: * ANYONE WHO USES VIDEO AS A TOOL OF COMMUNICATION, EITHER IN EDUCATION, HEALTHCARE, MEDIA, ENTERTAINMENT, LAW, POLITICS, ETC.

Appendix

*License: * IT IS AVAILABLE GENERALLY AS A FREE TO USE, FREE TO EMBED API, AS LONG AS THE CONTENT OWNER HAS NO COMMERCIAL APPLICATIONS FOR THEIR CONTENT. IF THE CONTENT OWNER HAS PLANS TO MONETIZE THEIR CONTENT IN ANY LANGUAGE MADE POSSIBLE USING OUR TOOL, WE WILL WORK EITHER ON A REVENUE SHARE, LICENSE FEE PER STREAM, OR WORK FOR HIRE ? DEPENDING ON THE NEEDS, DESIRES AND BUDGETS OF EACH CLIENT.

*Statement of Reasons: * AS THE WORLD BECOMES MORE WIRED, AND BANDWIDTH COSTS DECREASE, WITH VIDEO ENABLED PCS, MOBILE DEVICES, AND OTHER VIEWING SCREENS BECOME UBIQUITOUS, IT BECOMES MORE AND MORE IMPORTANT TO BE ABLE TO VIEW AND UNDERSTAND THE FEELINGS AND PASSIONS AND FEARS OF PEOPLE IN ALL CULTURES. TRADITIONAL MEDIA, AND EXISTING SUPPLY CHAIN TECHNOLOGIES, ESPECIALLY TOUGHER AND TOUGHER COPYRIGHT RULES MAKE THIS NEARLY IMPOSSIBLE FOR ALL BUT THE BEST FUNDED FILMS. DOTSUB HOPES TO BE ABLE TO MAKE ANY VIDEO OR FILM AVAILABLE IN ALL LANGUAGES ? AN EFFORT THAT COULD HAVE PROFOUND IMPACT ON THE WORLD.

*Planned use of prize money: * FURTHER ENABLE WORTHY NON PROFITS AND OTHER EFFORTS WHO NEED HELP COMMUNICATING ACROSS CULTURES.

Document 13 – *Open Clothes* submission form

Description of project: "Open-Clothes.com" is a community on the Internet for who makes clothes, for who wants clothes, and for everybody who likes clothes. In which community, anyone can participate for free on the theme of "making the clothes of 'I' size". "Those who make" can enjoy making clothes, at their own pace conveniently. "Those who wear" can enjoy making clothes which matched liking and the body exactly. "Open-Clothes.com" community is compared to a tree. First, wooden "trunk" is the making-clothes network of "those who make." The function of community is substantial from information exchange to work sale as if annual rings may be piled up. The network which supports activity from beginners to experts in connection with making dress as an individual is formed. Then, it is a "branch" bears fruits, the works born from the network of "those who make". "Those who wear" gathers in quest of "clothes with stories." The micro demands of "how it is made", "wanting such dress fits me", etc. which are difficult to respond on a ready-made, are realized, together with "those who make." It is the common manufacture system of "those who wear", and "those who make." Moreover, a "root" is required to suck up nutrition and send to a trunk. The cooperation with the professional contractor who become a foundation supporting activity of "those who make" is indispensable to making clothes. Then, in Open-Clothes.com, the common production system of "those who make", and "the contractors who make" is built. [1] Individuals with the energy of making a thing gather and build "society". [2] The new "culture" is produced, which finds out the value in the produced work which is different from ready-mades. [3] The "industry" will be cherished, which supports making the thing, value added and can respond to a market. Healthy tree may attach rich leaves and rich fruits on a trunk, and returned to the ground as nutritive substance. They may be taken in from the root and may send out to a trunk and the growth may be continued. Like the tree, culture, and industry and a social system cooperation is realized according to the power of the community and the continuation of making dress. We "Open-Clothes.com" think such expansive circulation will be produced.

URL of the work: <http://www.open-clothes.com/>

Project Details

Objectives: Open-Clothes carries out the help which finds such "making the clothes of 'I' size" out of communication. People who participate "Open-Clothes" can have much possibility. * Who "Wants to make" can - cancel questions and troubles with information exchange. - present her / his works and hear opinions and evaluations about them. - sell works. - perform manufacture management. - find business partners. - share sale / advertisement channels. - produce with a few lot. - harness her / his knowledge and technology. * Who "Wants to wear" can - buy clothes, looking at the background of manufacture. - make the clothes suitable for size or liking from "JOINT MADE", which means make together with those who make. - study happily and be a person "who makes." We will realize the "clothes" environment opened by knowledge and technology of all people in connection with clothes -- that is, -- "Open-Clothes." Clothes are the themes in connection with all people. We think optimal "clothes" environment will be required for people with the style which is different in each. Through construction, management of "Open-Clothes.com" which is community computing environment, we will discover and solve subjects in connection with clothes. We aim at the following gradual results. - Offer of a choice called new production / circulation in a fashion field. - Offer of the place where we can find the partner based on a style. - Opportunity creation of a work and a volunteer. - Construction of the knowledge database about clothes. - Edit and offer of teaching materials about clothes. - Construction of a clothes database. - Secondary use as resources of common products, and protection of a right. - One to one production. - Development and improvement in clothes related technology. - Energy curtailment by cooperation of apparel systems. - Realization of the high quality human service on the Internet. - Activation of production. - The proposal of the sustainable and expansive management technique of community energy.

Language and context: From now on we are active only in Japan. We are affected by the diversity of Japanese fashion. There is no class in Japanese fashion. And the passion for fashion is very strong in Japan. There is the student with full of the motivation in "I want to study making dress", the young designer who asks for the place of the further activity with her / his brand, the fashion professional which are engaged in making dress as an occupation, the housewife and "the fine elderly people" as a former pro desires works and volunteers to harness knowledge and technology after retirement, the person who enjoys making dress at their pace as a hobby. Although the production shift to China, consumption depression, etc. pose a serious problem in the apparel industry, such people with full of the energy in Japan are striving for making clothes in quest of the place of activity still more. We perform making the "place" where such people construct a networks and can take various communications through the knowledge and

Tracing back Communities

the work. In the Future, We will connect all people who in connection with clothes. For example, you make clothes of 'I' size, designing with American and making pattern of clothes with Italian, using japanese textile which Indians yarned and dyed, sewing or knitting by your partner in your country who you found in "Open-Clothes.com"

Project History: When we, core members, were university students, we studied about fashion industry, and make and sell clothes by ourselves. But it was difficult to circulate making and selling our works. Furthermore, we felt sorry for being unable to meet expectations of friends "Please make my clothes". From the reflection, we worries earnestly about "the good relation" between clothes and the Internet, at last. We heard the episode that the man with six fingers said "My life is happy if it removes that there is no glove fits me." We thought it should be that there is the glove fits him too, and that everybody can get favorite and suited things. What it did not realize was the negligence of those who were engaged in the fashion industry. Then the project started in March, 2000 with 4 friends. The community site started in May, 2001. We managed the community as we bring up our baby. The community expanded little by little, by word of mouth. From early time, we also started real meetings where members of the community can meet and communicate each other. We have held about 30 events, such as exchange meetings, study meetings, factory inspection meetings, the exhibitions of clothes, and so on. Moreover, we started Open-Clothes Expo as compilation of our vision last year. The Expo is held two times a year.

People: 4 core staffs and about 40 volunteers carry the project. The project team takes very open style. Everybody who is interested in the project, can participate in it and taste feeling of fullness and contribution. About 4,500 people are the members of the community where everybody can participate for free with no regulation. About 50 companies and schools support the community.

Lessons learned: * WORKED (not perfectly) - Human network community - Knowledge database - Individual empowerment - Digital archive of works - Common production / circulation / selling system - Matching of a hobby and taste * NOT WORKED - Tools for design - e-learning - Protection of designs and copyrights - 3-dimensional measurement of a human body - 3-dimensional modeling / pattern making - Wearable computing - Old-clothes recycling system - Low energy production - Realization of the quality of life

Technical Information

Technological Basis: Web based tools as infrastructure. Tools and platform for communication, design, presentation, business, knowledge and fashion life itself.

Solutions: N/A

Implementations: N/A

Users: Everybody can watch the site [about 400,000 people accessed since 2001/3]. More function for submitted Users [4,500 users till now] for free. From 5 to 10 persons a day submit as users. Composition of submitted members. - The level of 10 years old (30%), 20 (30%), 30 (15%), 40(10%), 50 (10%), over 60 (5%). - Students (30%), professionals (40%), housewives (20%), other (10%). - Japan (Tokyo 70%, other 25%), Other (5%). The number of beneficiaries will be up to "6-billions", every people all over the world.

License: N/A

































Statement of Reasons: We offer new way of community and society and industry in fashion. Although limited field, there is the various life activity itself. The members do not only gather and speak, but produce values. They Co-municate, Co-design, Co-laborate, Co-product to make clothes they want. That is to say, "Open-Clothes" is new community mixing virtual and real, and producing values.

Planned use of prize money: We want to start new service to bring up young designers which connect to industries. The service was very difficult to start because of lack of money. We think once the service started, the energy of young people drive not only "Open-Clothes" community but also japanese industry itself to a good direction.

Table 9 – Ranked Concept List for Task 1

Concept	Absolute Count	Relative Count	
<u>community</u>	3446	100%	<div style="width: 100%;"></div>
<u>development</u>	818	23.7%	<div style="width: 23.7%;"></div>
<u>world</u>	627	18.1%	<div style="width: 18.1%;"></div>
<u>local</u>	573	16.6%	<div style="width: 16.6%;"></div>
<u>social</u>	491	14.2%	<div style="width: 14.2%;"></div>
<u>creating</u>	490	14.2%	<div style="width: 14.2%;"></div>
<u>members</u>	466	13.5%	<div style="width: 13.5%;"></div>
<u>support</u>	441	12.7%	<div style="width: 12.7%;"></div>
<u>digital</u>	436	12.6%	<div style="width: 12.6%;"></div>

Appendix

<u>tool</u>	435	12.6%	
<u>cultural</u>	370	10.7%	
<u>training</u>	333	9.6%	
<u>sharing</u>	331	9.6%	
<u>resources</u>	326	9.4%	
<u>rural</u>	288	8.3%	
<u>collaborative</u>	283	8.2%	
<u>education</u>	279	8%	
<u>build</u>	267	7.7%	
<u>help</u>	258	7.4%	
<u>learning</u>	228	6.6%	
<u>youth</u>	219	6.3%	
<u>global</u>	198	5.7%	
<u>organizations</u>	189	5.4%	
<u>groups</u>	183	5.3%	
<u>international</u>	163	4.7%	
<u>include</u>	161	4.6%	
<u>interest</u>	160	4.6%	
<u>model</u>	159	4.6%	
<u>environment</u>	157	4.5%	
<u>real</u>	152	4.4%	
<u>networks</u>	149	4.3%	
<u>physical</u>	147	4.2%	
<u>discussion</u>	139	4%	
<u>individuals</u>	138	4%	
<u>unique</u>	137	3.9%	
<u>form</u>	127	3.6%	
<u>participation</u>	123	3.5%	
<u>change</u>	115	3.3%	
<u>leaders</u>	111	3.2%	
<u>offline</u>	77	2.2%	
<u>active</u>	76	2.2%	

Tracing back Communities

Table 10 – Co-occurrence list for ‘online community’

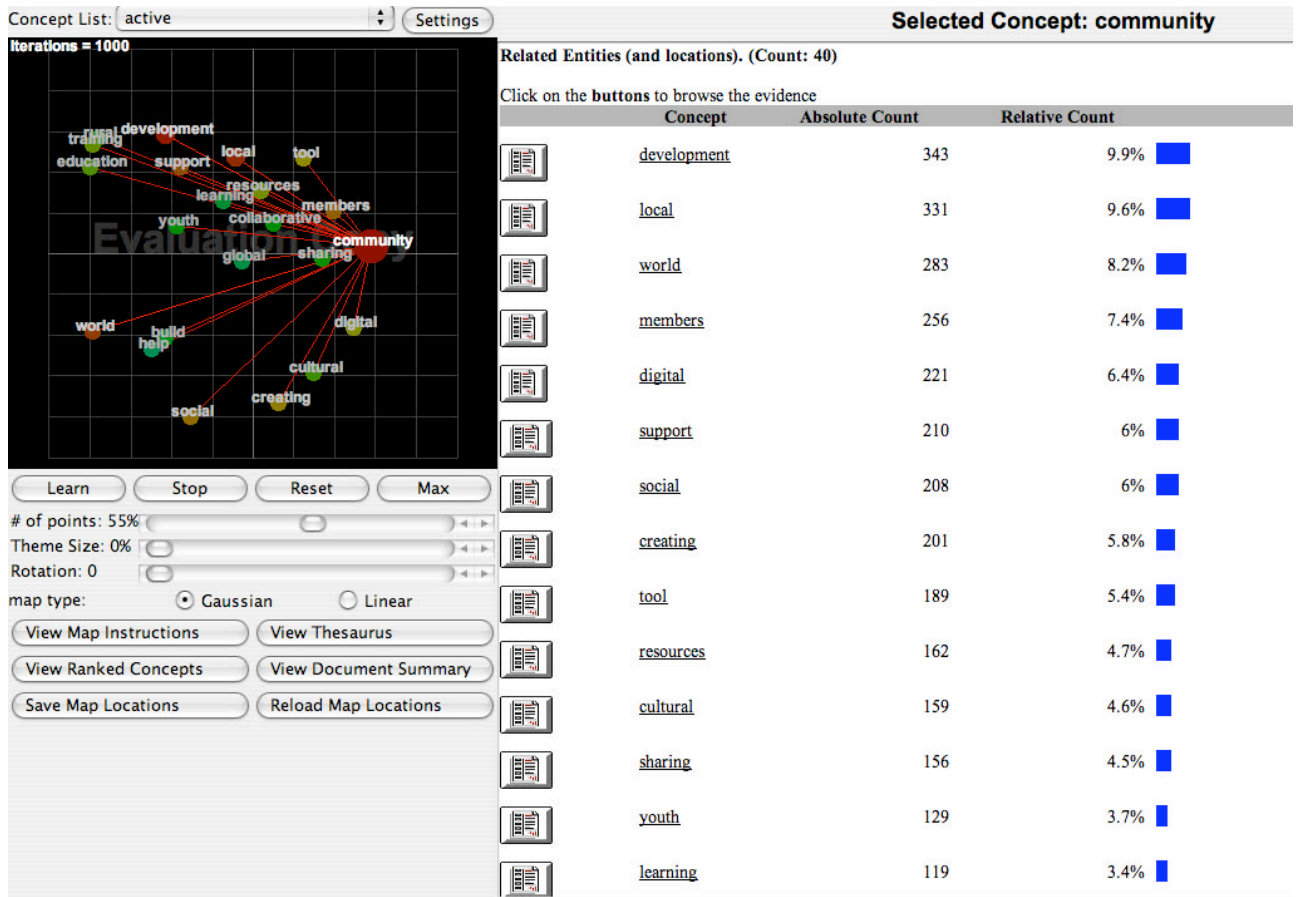


Table 11 – InfoRapid Search & Replace's results for A = DIGCOM&group&!network (Hypothesis A < B)

Searched for	DIGCOM&group&!network		
In Files	*.txt		
In Directories +	C:\Documents and Settings\Anna\Desktop\Dissertation 3.3\dati txt TOTALE 920\English		
Search Options	Pattern matching Match whole words Use internal converters		
Matches found	401	Files found / total	62 / 742

Table 12 – InfoRapid Search & Replace's results for B= DIGCOM&network&!group (Hypothesis A < B)

Searched for	DIGCOM&network&!group		
In Files	*.txt		
In Directories +	C:\Documents and Settings\Anna\Desktop\Dissertation 3.3\dati txt TOTALE 920\English		
Search Options	Pattern matching Match whole words Use internal converters		
Matches found	208	Files found / total	33 / 742

Appendix

Table 13 – InfoRapid Search & Replace's results for C = group&network (Hypothesis C = 0)

<i>Searched for</i>	group&network		
<i>In Files</i>	*.txt		
<i>In Directories +</i>	C:\Documents and Settings\Anna\Desktop\Dissertation 3.3\dati txt TOTALE 920\English		
<i>Search Options</i>	Pattern matching Match whole words Use internal converters		
<i>Matches found</i>	3117	<i>Files found / total</i>	301 / 742

Table 14 – InfoRapid Search & Replace's results for C = group&network&DIGCOM (Hypothesis D = 0)

<i>Searched for</i>	group&network&DIGCOM		
<i>In Files</i>	*.txt		
<i>In Directories +</i>	C:\Documents and Settings\Anna\Desktop\Dissertation 3.3\dati txt TOTALE 920\English		
<i>Search Options</i>	Pattern matching Match whole words Use internal converters		
<i>Matches found</i>	2144	<i>Files found / total</i>	157 / 742

Table 15 – Ranked Concept List for Task 2

Concept	Absolute Count	Relative Count	
TG_2004_TG	3223	100%	<div style="width: 100%;"></div>
TG_2007_TG	2554	79.2%	<div style="width: 79.2%;"></div>
TG 2005 TG	1880	58.3%	<div style="width: 58.3%;"></div>
TG_2006_TG	1638	50.8%	<div style="width: 50.8%;"></div>
<u>site</u>	720	22.3%	<div style="width: 22.3%;"></div>
<u>art</u>	608	18.8%	<div style="width: 18.8%;"></div>
<u>work</u>	537	16.6%	<div style="width: 16.6%;"></div>
<u>information</u>	457	14.1%	<div style="width: 14.1%;"></div>
<u>software</u>	451	13.9%	<div style="width: 13.9%;"></div>
<u>media</u>	375	11.6%	<div style="width: 11.6%;"></div>
<u>development</u>	298	9.2%	<div style="width: 9.2%;"></div>
<u>local</u>	277	8.5%	<div style="width: 8.5%;"></div>
<u>system</u>	259	8%	<div style="width: 8%;"></div>
<u>mobile</u>	237	7.3%	<div style="width: 7.3%;"></div>
<u>cultural</u>	235	7.2%	<div style="width: 7.2%;"></div>
<u>social</u>	226	7%	<div style="width: 7%;"></div>
<u>open</u>	218	6.7%	<div style="width: 6.7%;"></div>
<u>technology</u>	211	6.5%	<div style="width: 6.5%;"></div>
<u>world</u>	189	5.8%	<div style="width: 5.8%;"></div>
<u>online</u>	187	5.8%	<div style="width: 5.8%;"></div>
<u>video</u>	173	5.3%	<div style="width: 5.3%;"></div>
<u>members</u>	172	5.3%	<div style="width: 5.3%;"></div>

Tracing back Communities

<u>network</u>	149	4.6%	
<u>org</u>	144	4.4%	
<u>group</u>	133	4.1%	
<u>free</u>	133	4.1%	
<u>digital</u>	127	3.9%	
<u>money</u>	125	3.8%	
<u>services</u>	114	3.5%	
<u>public</u>	114	3.5%	
<u>students</u>	102	3.1%	
<u>support</u>	101	3.1%	
<u>research</u>	96	2.9%	
<u>rural</u>	95	2.9%	
<u>web</u>	95	2.9%	
<u>health</u>	92	2.8%	
<u>learned</u>	87	2.6%	
<u>time</u>	80	2.4%	
<u>radio</u>	76	2.3%	
<u>political</u>	72	2.2%	
<u>program</u>	71	2.2%	
<u>space</u>	68	2.1%	
<u>music</u>	64	1.9%	
<u>design</u>	63	1.9%	
<u>government</u>	63	1.9%	
<u>city</u>	62	1.9%	
<u>youth</u>	62	1.9%	
<u>including</u>	61	1.8%	
<u>school</u>	43	1.3%	
<u>countries</u>	43	1.3%	
<u>team</u>	42	1.3%	
<u>server</u>	39	1.2%	
<u>text</u>	33	1%	
<u>internet</u>	32	0.9%	
<u>human</u>	31	0.9%	
<u>global</u>	30	0.9%	
<u>international</u>	27	0.8%	
<u>created</u>	25	0.7%	
<u>life</u>	21	0.6%	
<u>map</u>	15	0.4%	
<u>database</u>	14	0.4%	
<u>collaboration</u>	14	0.4%	
<u>concept</u>	13	0.4%	
<u>collective</u>	10	0.3%	
<u>environment</u>	10	0.3%	

References

- Akrich, M. (1992), 'Des réseaux vidéocom aux réseaux électriques: machines, gestion, marchés', in *Centre de Sociologie de l'Innovation, Ces réseaux que la raison ignore*. (Paris: L'Harmattan).
- Amin, A. and Thrift, N. (2001), *Cities. Reimagining the urban*. (Cambridge: Polity Press).
- Anderson, C. (2006), *The Long Tail: Why The Future of Business in Selling Less of More*. (New York: Hyperion).
- Aronowitz, S. (2006), *Post-Work. Per la fine del lavoro senza fine*. (Roma: DeriveApprodi).
- Bartle, P. (2005), *The Sociology of Communities*. (Victoria, Canada: Camosun Imaging).
- Bazzichelli, T. (2006a), *Networking: la rete come arte*. (Milano: Costa & Nolan).
- (2006b), 'Stalder: il Futuro delle Digital Communities', *Digimag*, 14, May.
- Beck, U. (1996), *The Reinvention of Politics: Rethinking Modernity in the Global Social Order*. (London: Polity Press).
- Benedikt, M. (Eds.) (1991), *Cyberspace: First Steps*. (Cambridge, Mass.: MIT Press).

- Benkler, Y. (2006), *The Wealth of Networks: How Social Production Transforms Market and Freedom*. (New Haven, CT: Yale University Press).
- Berardi, F. (2004), *Il sapiente, il mercante, il guerriero*. (Roma: DeriveApprodi).
- Bey, H. (1992), *Temporary Autonomous Zones*. (Brooklyn: Autonomedia).
- Bloor, D. (1976), *Knowledge and Social Imagery*. (Chicago: Chicago University Press).
- Bolter, J. D. and Grusin, R. (1999), *Remediation: Understanding New Media*. (Cambridge, Mass.: MIT Press).
- Bourdieu, P. (1997), *Méditations pascaliennes. Éléments pour une philosophie négative*, (Paris: Seuil).
- Bowker, G.C. and Star, S.L. (1999), *Sorting Things Out. Classification and Its Consequences*. (Cambridge, Mass: MIT Press).
- Boyd, D. M. and Ellison, N. B. (2007), 'Social network sites: Definition, history, and scholarship', *Journal of Computer-Mediated Communication*, 13 (1). Available at <http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html>, accessed 30 July 2008.
- Bradshaw, T. and Garrahan, M. (2008), 'Rival forecast to catch YouTube', *Financial Times*, 16 November.
- Broeckmann, A. (2004), 'Public Spheres and Network Interfaces', in Graham, S. (Ed.) *The Cybercities Reader*. (London: Routledge).
- Bruner, J. S., (1990), *Acts of Meaning*. (Cambridge, Mass.: Harvard University Press).

References

- Callon, M. (1989), 'Society in the Making: The Study of Technology as a Tool for Sociological Analysis', in Bijker, W. E., Hughes, T. P. and Pinch, T. (Eds.) *The Social Construction of Technological Systems*. (Cambridge, Mass.: MIT Press).
- Castells, M. (1972), *The Urban Question*. (London: Edward Arnold).
- (1996), *The Rise of The Network Society, Volume I: The Information Age*. (Oxford: Blackwell).
- (1997), *The Power of Identity, Volume II: The Information Age*. (Oxford: Blackwell).
- (1998), *The End of Millennium, Volume III: The Information Age*. (Oxford: Blackwell).
- (2001), *Internet Galaxy*. (Oxford: Oxford University Press).
- (2004), 'Space of Flows, Space of Places: Materials for a Theory of Urbanism in the Information Age', in Graham, S. (Ed.) *The Cybercities Reader*. (London: Routledge).
- Choi, J. H. (2006), 'Living in Cyworld: Contextualising Cy-Ties in South Korea'. In Bruns, A. and Jacobs, J. (Eds.), *Use of Blogs (Digital Formations)*. (New York: Peter Lang).
- Christensen, W. and Suess, R. (1978), 'Hobbyist Computerized Bulletin Boards', *Byte*, November issue.
- Coquet, J. C. (1997), *La quête du sens. Le langage en question*. (Paris: PUF)
- d'Aniello, C., Pelizza, A., Trocchi, A. (2005), 'Shattered glances from the Italian mediascape', in Leopoldseder, H., Schopf, C. and Stocker, G. (Eds.), *CyberArts 2005. International Compendium Prix Ars Electronica 2005*. (Ostfildern: Hatje Cantz Verlag).

- Daniels, D. (2002), *Kunst als Sendung: Von der Telegrafie zum Internet* (München: Beck Verlag).
- Della Porta, D. *et al.* (2006), 'Searching the Net: An Analysis of the Democratic Use of Internet by 266 Social Movement Organizations. WP 2', *Democracy in Europe and the Mobilization of Society Research Project*. Press release available at <http://demos.iue.it/Reports.shtml>, accessed 23 June 2007.
- Deseriis, M. and Marano, G. (2003), *Net.Art. L'arte della connessione*. (Milano: Shake Edizioni).
- DiBona, C., Ockam, S. and Stone, M. (1999), *Open Sources: Voices from the Open Source Revolution*. (Sebastopol: O'Reilly Publishing).
- Dick, P. K. (1964), *The Simulacra*. (New York: Ace Books).
- Donath, J. and Boyd, D. M. (2004), 'Public displays of connection', *BT Technology Journal*, 22 (4), 71-82.
- Downes, L. and Mui, c. (1998), *Unleashing the Killer App: Digital Strategies for Market Dominance* (Boston, Mass.: Harvard Business School Press).
- Drew, J. (2005), 'From the Gulf War to the Battle of Seattle: Building an International Alternative Media Network', in Chandler, A. and Neumark, N. (Eds.), *At a Distance: Precursors to Art and Activism on the Internet*. (Cambridge, Mass: MIT Press).
- Flichy, P. (2001), *L'imaginaire d'Internet*. (Paris: La Découverte).
- Florida, R. (2002), *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. (New York: Basic Books).

References

- Formenti, C. (2002), *Mercanti di Futuro*. (Torino: Einaudi).
- (2005), 'Composizione di classe, tecnologie di rete e post-democrazia', in Di Corinto, A. (Ed.), *L'innovazione necessaria*. (Milano: RGB – Area 51).
- (2008), *Cybersoviet. Utopie postdemocratiche e nuovi media*. (Milano: Raffaello Cortina Editore).
- Gardner, H. (1983), *Frames of Mind: the Theory of Multiple Intelligences*. (New York: Basic Books).
- Gasperoni, G. and Marradi, A. (1996), 'Metodo e tecniche nelle scienze sociali', in *Enciclopedia delle Scienze Sociali*, vol. V. (Roma: Istituto della Enciclopedia Italiana).
- Gibson, J. J. (1986), *The Ecological Approach to Visual Perception*. (London: Hillsdale).
- Giddens, A. (1991), *Modernity and Self-Identity: Self and Society in the Late Modern Age*. (London: Polity Press).
- Goldsmith, J. and Wu, T. (2006), *Who Controls the Internet? Illusions of a Borderless World*. (New York: Oxford University Press).
- Graham, S. (2004), 'Introduction: Cities, Warfare, and States of Emergency', in Graham, S. (Ed.), *Cities, War and Terrorism. Towards an Urban Geopolitics*. (Malden, Mass.: Blackwell Publishing).
- (2005), 'Software-sorted geographies', *Progress in Human Geography*, 29: 5, 1-19.
- Grassmuck, V. (2007), 'Copyright Instead of Data Protection', in Stocker, G. and Schöpf, C. (Eds.), *Goodbye Privacy. Ars Electronica 2007*. (Ostfildern: Hatje Cantz Verlag).

- Greimas, A. J. and Courtés, J. (1979), *Sémiotique. Dictionnaire raisonné de la théorie du langage*. (Paris: Hachette). Italian edition, *Semiotica. Dizionario ragionato della teoria del linguaggio*. (Milano: La Casa Usher). 1986.
- Grossman, L. (2006), 'Time's Person of the Year: You', *Time*, 13 December 2006.
- Hacking, I. (1999), *The Social Construction of What?*. (Cambridge, Mass: Harvard University Press).
- Hafner, K. and Lyon, M. (1996), *Where Wizards Stay Up Late: The Origins of The Internet*. (New York: Simon & Schuster).
- Hagel, J. and Armstrong, A. G. (1997), *Net Gain: Expanding Markets Through Virtual Communities*. (Boston, Mass.: Harvard Business School Press).
- Halleck, D. D. (2002), 'Una tempesta coinvolgente. Il cyber-forum aperto Indymedia', in Pasquinelli, M. (Ed.), *Media Activism. Strategie e pratiche della comunicazione indipendente*. (Roma: DeriveApprodi).
- Harvey, D. (1989), *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. (Oxford: Blackwell).
- Hayles, K. (1999), *How We Become Posthuman*. (Chicago: University of Chicago Press).
- Himanen, P. (2001), *The Hacker Ethic and the Spirit of the Information Age*. (New York: Random House).
- Hirsch, A. (2003), 'Prix Ars Electronica 2004 – Diskussionsgrundlage'. (Internal document, sent by the Author).

References

- (2006) (Ed.), 'Putting the Tools into the Hands of the People', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2006. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- Hirsch, A. and Stocker, G. (2004), 'Digital Communities on the Move', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2004. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- Hodgkinson, T. (2008), 'With friends like these...', *The Guardian*, 14 January.
- Ippolita collective (2007), *Luci e ombre di Google*. (Milano: Feltrinelli).
- Ito, J. (2005) (Ed.), 'A Voice to Everyone on Earth', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2005. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- Jacobs, J. (1961), *The Death and Life of Great American Cities*. (New York: Random House).
- Jacobson, R. (1962), *Selected Writings*. (Mouton: La Haye).
- Janko, S. (2004), 'The Spirit of Linz', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *1979-2004. Ars Electronica: The Network for Art, Technology and Society. The First 25 Years*. (Ostfildern: Hatje Cantz Verlag).
- Jenkins, H. (2006), *Convergence Culture: Where Old and New Media Collide*. (New York-London: New York University Press).
- Jones, G. S. (1995), *Cybersociety*. (Thousand Oaks, Ca.: Sage Publications).
- (1998), *Cybersociety 2.0: Revisiting Computer-Mediated Communication and Community*. (Thousand Oaks, Cal.: Sage Publications).

- Kelly, K. (2002), 'The Web Runs on Love, not Greed', *The Wall Street Journal*, 4 January.
- Kelty, C. M. (2008), *Two Bits: The Cultural Significance of Free Software*. (Durham and London: Duke University Press). Downloadable version at <http://twobits.net/>
- Kim, A. J. (2000), *Community Building on the Web: Secret Strategies for Successful Online Communities*. (London: Addison Wesley).
- Kittler, F.A. (1997), *Literature, Media, Information Systems*. (London: Routledge).
- Kogawa, T. (1999), 'Minima Memoranda: a note on streaming media', in Waag Society for Old and New Media (Ed.), *Next Five Minutes 3 Workbook*. (Amsterdam: De Waag).
- Kopomaa, T. (2000), *City in Your Pocket: Birth of the Mobile Information Society*. (Helsinki: Gaudeamus).
- Krumpak, G. (2007), *Austria. Information Technology Industry*. (Vienna: Austrian Business Agency).
- Landowski, E. (1989), *La société réfléchie*. (Paris: Seuil).
- Lanzara, G.F. and Morner, M. (2005), 'Artifacts rule! How Organizing Happens in Open Source Software Projects', in Czarniawska, B. and Hernes, T. (Eds.), *Actor Network Theory and Organizing*. (Copenhagen: Liber).
- Lash, S. and Urry, J. (1987), *The End of Organized Capitalism*. (Madison: University of Wisconsin Press).
- Latham, R. and Sassen, S. (2005), 'Digital Formations: Constructing an Object of Study', in Latham, R. and Sassen, S. (Eds.), *Digital*

References

- Formations. IT and New Architectures in the Global Realm.* (Princeton: Princeton University Press).
- Latour, B. (1987), *Science in Action. How to Follow Scientists and Engineers through Society.* (Cambridge, Mass: Harvard University Press).
- (1993), *We Have Never Been Modern.* (Cambridge, Mass: Harvard University Press).
- (1999), *Pandora's Hope. Essays on the Reality of Science Studies* (Cambridge, Mass: Harvard University Press).
- (2004a), 'On using ANT for Studying Information Systems: a (somewhat) Socratic Dialogue', in Avgerou, C., Ciborra, C. and Land, F.F. (Eds.), *The Social Study of Information and Communication Study.* (Oxford: Oxford University Press).
- (2004b), 'How to Talk About the Body? The Normative Dimension of Science Studies, in *Body & Society*, 10 (2–3).
- (2005a), *Reassembling the Social. An Introduction to Actor-Network-Theory.* (Oxford: Oxford University Press).
- (2005b), 'From Realpolitik to Dingpolitik. Or How to Make Things Public', in Latour, B. and Weibel, P. (Eds.), *Making Things Public: Atmospheres of Democracy.* (Cambridge, Mass.: MIT Press).
- Latour, B. and Weibel, P. (Eds.) (2002), *Iconoclash. Beyond the Image Wars in Science, Religion, and Art.* (Cambridge, Mass.: MIT Press).
- Leopoldseder, H. (2004), 'Media Culture as a Trademark. 25 Years of Ars Electronica in Linz', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2004. International Compendium Prix Ars Electronica.* (Ostfildern: Hatje Cantz Verlag).

- Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.) (2004a), *1979-2004. Ars Electronica: The Network for Art, Technology and Society. The First 25 Years*. (Ostfildern: Hatje Cantz Verlag).
- (Eds.) (2004b), *CyberArts 2004. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- (Eds.) (2005), *CyberArts 2005. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- (Eds.) (2006), *CyberArts 2006. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- (Eds.) (2007), *CyberArts 2007. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- Lessig, L. (1999), *Code and Other Laws of Cyberspace*. (New York: Basic Books).
- (2001), *The Future of Ideas: The Fate of the Commons in a Connected World*. (New York: Random House).
- Levy, S. (1985), *Hackers. Heroes of the Computer Revolution*. (New York: Dell Book).
- Linzer Veranstaltungsgesellschaft (Ed.) (1979), 'Ars Electronica 1979', in *Rahmen des Internationalen Brucknerfestes 79*. (Linz).
- Lovink, G. (2002), *Dark Fiber*. (Cambridge, Mass: MIT Press).
- (2003), *My First Recession: Critical Internet Culture in Transition*. (Rotterdam: V2_/NAi Publishers). Italian edition *Internet non è il paradiso: reti sociali e critica della cibercultura*. (Milano: Apogeo). 2004.
- (2007), *Zero comments*. (New York: Routledge). Italian edition *Zero Comments. Teoria critica di Internet*. (Milano: Bruno Mondadori). 2007.

References

- Lunenfeld, P. (Eds.) (1999), *The Digital Dialectic: New Essays in New Media*. (Cambridge, Mass.: MIT Press).
- Lyon, D. (2002) *Surveillance as Social Sorting: Privacy, Risk and Automated Discrimination*. (London: Routledge).
- Manovich, L. (2000), *The Language of New Media*. (Cambridge, Mass.: MIT Press).
- Masanès, J. (2007), 'Context in a Networked Environment. Some considerations before starting thinking about contextualisation of online contents'. Proceedings of the *Online Archives of Media Art* conference. *re:place 2007. On the Histories of Media, Art, Science and Technology* conference, Berlin, 14-18 November 2007.
- Mascio, L. (2003), 'Le comunità virtuali *text-based*', *Versus*, numero monografico sulla semiotica dei nuovi media.
- Mattelart, A. (2001), *Histoire de la société de l'information*. (Paris: La Découverte).
- Mauss, M. and Halls, W. D. (1990), *The Gift: The Form and Reason for Exchange in Archaic Societies*. (New York: Norton).
- Meikle, G. (2002), *Future Active*. (Sydney: Pluto Press Australia).
- Neumark, N. (2005), 'Art/Activism', in Chandler, A. and Neumark, N. (Eds.), *At a Distance: Precursors to Art and Activism on the Internet*. (Cambridge, Mass: MIT Press).
- Nielsen, J. (1999), *Designing Web Usability*. (Indianapolis: New Riders).
- Nissenbaum, H. (2007), 'Privacy in Context', in Stocker, G. and Schöpf, C. (Eds.), *Goodbye Privacy. Ars Electronica 2007*. (Ostfildern: Hatje Cantz Verlag).

- Norman, D. A. (1988), *The Psychology of Everyday Things* (New York: Basic Books).
- Oldenburg, R. (1991), *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts, and How They Get You through the Day*. (New York: Paragon House).
- Paccagnella, L. (2000), *La comunicazione al computer: Sociologia delle reti telematiche*. (Bologna: Il Mulino).
- Papert, S. (1980), *Mindstorms: children, computers, and powerful ideas*. (New York: Basic Books).
- (1993), *The children's machine: rethinking school in the age of the computer*. (New York: Basic Books).
- Pasquinelli, M. (Ed.) (2002), *Media Activism. Strategie e pratiche della comunicazione indipendente*. (Roma: DeriveApprodi).
- (2008), *Animal Spirit. A Bestiary of the Commons* (Rotterdam: NAI Publishers).
- Pelizza, A. (2005), 'Dall'Auditel al General Intellect. Un modello evolutivo del pubblico televisivo', in Adamoli, P. and Marinelli, M. (Eds.), *Comunicazione, media e società. Premio Baskerville 'Mauro Wolf' 2004*. (Bologna: Baskerville).
- (2006), 'Comunicare l'immediatezza. Una televisione dal basso a Rotterdam', *Inchieste*, 2.
- (2008), 'Stretching the Line into a Borderland of Potentiality. Communication technologies between security tactics and cultural practices', in Aurigi, A. and De Cindio, F. (Eds.), *Augmented Urban*

References

- Spaces. Articulating the Physical and Electronic City.* (Aldershot: Ashgate).
- Pozzato, M.P. (2001), *Semiotica del testo. Metodi, autori, esempi.* (Roma: Carrocci).
- Putnam, R. (2000), *Bowling Alone: The Collapse and Revival of American Community.* (New York: Simon and Schuster).
- Quéré, L. (1997), 'La cognition comme action incarné', in Borzeix, A., Bouvier, A. and Pharo, P. (Eds.), *Sociologie et connaissance.* (Paris: CNRS Editions).
- Raymond, E. (1999), *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary.* (Sebastopol, Cal.: O'Reilly).
- Rheingold, H. (1993/2000), *The Virtual Community: Homesteading on the Electronic Frontier.* (Reading, Mass.: Addison-Wesley).
- (2002), *Smart Mobs: the Next Social Revolution.* (New York: Basic Books).
- (2004) (Ed.), 'Care about Each Other – A Web of Relationships', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2004. International Compendium Prix Ars Electronica.* (Ostfildern: Hatje Cantz Verlag).
- Ricoeur, P. (1997), *L'Idéologie et l'Utopie.* (Paris: Le Seuil).
- Rifkin, J. (2000), *The Age of Access: the New Culture of Hypercapitalism, Where All of Life is A Paid-For Experience.* (New York: J. P. Tarcher/Putnam).
- Rodotà, S. (1997), *Tecnopolitica.* (Roma-Bari: Laterza).

- Rogers, S. (2003) (Ed.), 'Galvanizing the Engagement of Society', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2003. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- (2007) (Ed.), 'Communities in Transformation', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *CyberArts 2007. International Compendium Prix Ars Electronica*. (Ostfildern: Hatje Cantz Verlag).
- Rossiter, N. (2004), 'Creative Industries, Comparative Media Theory, and the Limits of Critique from Within', *Topia: A Canadian Journal of Cultural Studies*, 11.
- Rössler, B. (2005), *The Value of Privacy*. (London: Polity Press).
- Rullani, E. (2008), 'Immaterial work and the society of knowledge', *Paradigmi*, 1.
- Sacco, P. (2003), 'Linz: dall'acciaio alla cultura', in *L'impresa*, 1(6).
- Sassen, S. (2006), *Territory, Authority, Rights: from medieval to global assemblages*. (Princeton: Princeton University Press).
- Saxenian, A. (1994), *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. (Cambridge, Mass.: Harvard University Press).
- Scott, A. J. (1988), *Metropolis*. (Los Angeles: University of California Press).
- Shannon, C. and Weaver, W. (1949), *A Mathematical Theory of Communication*. (Urbana-Champaign, Ill.: University of Illinois Press).
- Silver, D. (2000), 'Looking Backwards, Looking Forwards: Cyberculture Studies, 1990-2000', in Gaunlett, D. (Ed.), *Web.Studies*. (London: Arnold Publishers).

References

- Smith, M. and Kollock, P. (1999), *Communities in Cyberspace*. (New York: Routledge).
- Stocker, G. (2004), 'An Idea Moves on...', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *1979-2004. Ars Electronica: The Network for Art, Technology and Society. The First 25 Years*. (Ostfildern: Hatje Cantz Verlag).
- Stone, A. R. (1995), *The War of Desire and Technology, at the Close of the Mechanical Age*. (Cambridge, Mass.: MIT Press).
- Storper, M. (1997), *The Regional World*. (New York: Guilford Press).
- Strangelove, M. (1993), 'Free-Nets: community computing systems and the rise of the electronic citizen', *Online Access*, Spring issue.
- Strum, S. C. (1994), 'Un société complexe sans culture matérielle: Le cas des babbouins', in Latour, B. and Lemonnier, P. *De la préhistoire aux missiles balistiques*. (Paris: La Découverte).
- Taylor, M. (1987), *The Possibility of Cooperation*. (Cambridge: Cambridge University Press).
- The Digital Future Report (2007), *Surveying the Digital Future. Year Six*. (University of Southern California: Annenberg School Center or the Digital Future). *Digital copy sent to the Author for research purposes*.
- Tracey, K. and Anderson, B. (2001), 'The significance of lifestage and lifestyle transitions in the use and disuse of Internet applications and services', *American Behavioral Scientist*, 45.
- Turner, F. (2006), *From Counterculture to Cyberculture. Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism*. (Chicago and London: The University of Chicago Press).

- Venturini, T. (2008), 'Diving in Magma', *Public Understanding of Science*.
- Visciola, M. (2000), *Usabilità dei siti web*. (Milano: Apogeo).
- Wark, M. (2004), *A Hacker Manifesto*. (Cambridge, Mass.: Harvard University Press).
- Weber, R.P. (1990), *Basic Content Analysis*. (Newbury Park, Calif.: Sage Publications).
- Wellman, B. (1979), 'The Community Question: the Intimate Networks of East Yorkers', *American Journal of Sociology*, 84: 1201-31.
- (1988), 'Structural analysis: from method and metaphor to theory and substance', in Wellman, B. and Berkowitz, S. D. (Eds.), *Social Structures: A Network Approach*. (Cambridge: Cambridge University Press).
- (2001), 'Physical place and cyberplace: The rise of personalized networking', *International Journal of Urban and Regional Research*, vol. 25, no. 2, pp. 227-252.
- Wellman, B., Carrington, P. J. and Hall, A. (1988), 'Networks as personal communities', in Wellman B. and Berkowitz S. D. (Eds.), *Social structures: A network approach*. (Cambridge, Mass.: Cambridge University Press).
- Wellman, B. and Gulia, M. (1999), 'Netsurfers don't ride alone: virtual communities as communities, in Wellman, B. (Ed.), *Networks in the Global Village*. (Boulder, Col.: Westview Press).
- Wellman, B. and Haythornthwaite, C. (Eds.) (2002), *The Internet in Everyday Life*. (Oxford: Blackwell).

References

- Wellman, B. and Leighton, B. (1979), 'Networks, Neighborhoods and Communities. Approaches to the Study of the Community Question', *Urban Affairs Quarterly*, 14: 363-90.
- Whitfield, S. J. (1996), *The Culture of the Cold War*. (Baltimore: John Hopkins University Press).
- Wiener, N. (1948), *Cybernetics: Or Control and Communication in the Animal and the Machine*. (Paris: Hermann & Cie).
- Winkler, W. and Lehner, W. (2004), 'Linzer Klangwolke', in Leopoldseder, H., Schöpf, C., Stocker, G. (Eds.), *1979-2004. Ars Electronica: The Network for Art, Technology and Society. The First 25 Years*. (Ostfildern: Hatje Cantz Verlag).
- Wittgenstein, L. (1975), 'Blue Book', in Id., *The Blue and Brown Books*. (Oxford: Blackwell). Italian edition 'Libro blu', in Id., *Libro blu e Libro marrone*. (Torino: Einaudi). 1983.
- Zielinski, S. (1999), *Audiovisions Cinema and Television as Entr'actes in History*. (Amsterdam: Amsterdam University Press).

Web resources

- Barlow, J. P. (1996), 'A Declaration of the Independence of Cyberspace'. Available at <http://homes.eff.org/~barlow/Declaration-Final.html>, accessed 31 October 2008.
- Barnes, S. (2006), 'A privacy paradox: Social networking in the United States', *First Monday*, 11 (9). Available at http://www.firstmonday.org/issues/issue11_9/barnes/index.html, accessed 30 July 2008.

- Beer, D. and Burrows, R. (2007), 'Sociology and, of and in Web 2.0: Some Initial Considerations', *Sociological Research Online*, vol. 12, Issue 5. Available at <http://www.socresonline.org.uk/12/5/17.html> , accessed 13 June 2008.
- Bell, D. (2004), 'Communitarianism', *Stanford Encyclopedia of Philosophy*. Available at <http://plato.stanford.edu/entries/communitarianism/>, accessed 31 October 2008.
- Boorstin, J. (2008), 'Facebook's New Ad Play In a Down Economy', *CNBC.com*. Available at <http://www.cnbc.com/id/27682302>, accessed 13 November 2008.
- Boyd, D. M. (2006), 'Friends, Friendsters, and MySpace Top 8: Writing community into being on social network sites', *First Monday*, 11 (12). Available at http://www.firstmonday.org/issues/issue11_12/boyd/, accessed 30 July 2008.
- Broeckmann, A. (1996), 'Towards an Aesthetics of Heterogenesis'. Available at <http://isp2.srv.v2.nl/~andreas/texts/1996/aestheticsofheterogenesis.html> , accessed 30 October 2008.
- Caronia, A. (2008), 'AHACamping. Le Trappole del Social Networking', *Digimag*, 38, October issue. Available at [http://isole.ecn.org/aha/camper/doku.php?id=antonio_caronia -_ahacamping_le_trappole_del_social_networking](http://isole.ecn.org/aha/camper/doku.php?id=antonio_caronia_-_ahacamping_le_trappole_del_social_networking), accessed 29 October 2008.
- Carr, N. (2005a), 'The Amoral of Web 2.0', *Rough Type*, 3 October. Available at

References

- http://www.roughype.com/archives/2005/10/the_amorality_o.php,
accessed 30 October 2008.
- (2005b), 'Hypermediation 2.0', Rough Type, 28 November. Available at
<http://www.roughype.com/archives/2005/11/hypermediation.php>,
accessed 30 October 2008.
- Fuster i Morell, M. (2007) , 'New questions for research: the new web
communities and political culture', in VV.AA., *Networked Politics Basic
Reader. Rethinking political organisation in an age of movements and
networks*. Proceedings of the Networked Politics Seminar, Berlin, June
2007. Available at
<http://217.72.98.112:8080/test/NetworkedpoliticsinBerlinReader.pdf>,
accessed 22 June 2008.
- Graham, P. (2005), 'Web 2.0'. Available at
<http://www.paulgraham.com/web20.html>, accessed 20 October 2008.
- Hobijn, E. and Broeckmann, A. (1996), 'Techno-parasites: bringing the
machinic unconscious to life'. Available at
<http://framework.v2.nl/archive/archive/node/text/.xslt/nodenr-142567>,
accessed 30 October 2008.
- Hornik, D. (2005), 'Where's the Money in the Long Tail?', *Venture Blog*, 13
December. Available at
http://ventureblog.com/articles/2005/12/wheres_the_mone.php,
accessed 30 October 2008.
- Jennings, T. (1985), 'Fidonet History and Operation'. Available at
<http://www.rxn.com/~net282/fidonet.jennings.history.1.txt> , accessed 31
October 2008.

- Latour, B. and Hermant, E. (2004), *Paris ville invisible*. (Paris: La Découverte-Les Emphêcheurs de penser en rond). Flash animation available at <http://www.bruno-latour.fr/virtual/index.html>, accessed 31 October 2008.
- Lovink, G. and Rossiter, N. (2005), 'Dawn of the Organised Networks', *Fibreculture Journal*, 5. Available at http://journal.fibreculture.org/issue5/lovink_rossiter_print.html, accessed 31 October 2008.
- McCarty, D. (1997), 'Nettime: the legend and the myth'. Available at <http://www.medialounge.net/lounge/workspace/nettime/DOCS/1/info3.html>, accessed 30 October 2008.
- Nielsen, J. (2006), 'Participation Inequality: Encouraging More Users to Contribute'. Available at http://www.useit.com/alertbox/participation_inequality.html, accessed 27 October 2008.
- O'Reilly, T. (2005), 'What Is Web 2.0. Design Patterns and Business Models for the Next Generation of Software'. Available at <http://www.oreillynet.com/lpt/a/6228>, accessed 30 October 2008.
- (2006), 'Web 2.0 Compact Definition: Trying Again'. Available at <http://radar.oreilly.com/archives/2006/12/web-20-compact.html>, accessed 30 October 2008.
- Shirky, C. (2003), 'Social Software and the Politics of Groups', first published on the *Networks, Economics, and Culture* mailing list. Now available at http://shirky.com/writings/group_politics.html , accessed 10 October 2008.

References

Smith, M. (1992), *Voices from the WELL: The Logic of the Virtual Commons*.

Unpublished thesis available at

<http://www.sscnet.ucla.edu/soc/csoc/papers/voices/Voices.htm>,

accessed 17 October 2008.

Swisher, K. (2008), 'Chatty Zuckerberg Tells All About Facebook Finances',

All Things Digital. Available at

<http://kara.allthingsd.com/20080131/chatty-zuckerberg-tells-all-about-facebook-finances/>, accessed 31 October 2008.

Weber, T. (2007), 'YouTubers to get ad money share', *BBC News*, 27

January. Available at <http://news.bbc.co.uk/2/hi/business/6305957.stm>,

accessed 30 October 2008.

<http://dotsub.com>

<http://media.lbg.ac.at>

<http://www.aec.at>

<http://www.akshaya.net>

<http://www.cemina.org.br>

<http://www.demoscience.org>

<http://www.eff.org>

<http://www.fsf.org>

<http://www.gnu.org>

<http://www.wissuecrawler.net>

<http://www.linz.at>

<http://www.mulonga.net>

<http://www.nettime.org>

<http://ngvision.org>

<http://www.open-clothes.com>

<http://www.overmundo.com.br>

<http://www.proinno-europe.eu>

<http://www.telestreet.it>

<http://www.textanalysis.info>

<http://www.textarc.org>

<http://theworldstarts.org>

<http://www.zexe.net/barcelona>