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THE HACKER ETHIC AND THE EFFECTIVE USE OF ICTS IN ALTERNATIVE ECONOMIC CULTURES: THE CASE OF IK' TA K'OP IN ABASOLO, CHIAPAS

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THE HACKER ETHIC AND THE EFFECTIVE USE OF ICTS IN ALTERNATIVE ECONOMIC CULTURES: THE CASE OF IK' TA K'OP IN ABASOLO, CHIAPAS

Tesis presentada por

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Declaro por este medio haber escrito yo mismo esta disertación y que presento exclusivamente mis investigaciones.

_____

Jacobo Castellanos Rivadeneira
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A mis padres que siguen pavimentando mi camino;

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Summary

The capitalist agency of mainstream ICTs is inherently at odds with alternative economic cultures. This idea suggests that it is not lack of access or the type of use that limits the opportunities posed by technology; the problem is technology itself–that is, the capitalist values that underscore their design, use and development.

Following extensive theoretical and empirical evidences, this thesis studies the Hacker Ethic as an alternative culture and value-system underpinning a series of ICTs –and people– that could serve as a basis for an effective use of technologies within alternative economic cultures. To that end, the case of Ik' ta K'op –a Maya-Tzeltal collective that offers telecommunication services– was analysed, for they explicitly and implicitly resort to this Hacker Ethic as a way to ensure the access and the use of ICTs within their community of Abasolo, in Ocosingo, Chiapas.

The results of this investigation suggest that there is a necessity for an alternative technological ecosystem that recognizes, reflects and fosters our cultural diversity as a basic foundation for an effective use of ICTs. More specifically, the ethical standpoint of the Hacker Ethic and the technical processes it promotes have been instrumental to Ik' ta K'op in five ways: 1. it has facilitated access to ICTs; 2. it has facilitated self-determination and governance; 3. it has fostered openness; 4. it allows for cooperative values to be replicated in the use of ICTs, and; 5. it has strengthened creativity and problem-solving skills.

Key words: Hacker Ethic, alternative economic cultures, effective use, ICTs

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Presentation

Not long after starting my bachelor's degree in Political Science, I began to be interested in various issues related to social economics. I was particularly drawn to the social and solidarity economy, to the point that, after graduating, I embarked on a journey through Latin America with the sole purpose of meeting and learning from the people that were driving the systems-change movement in the region. During that time, I also began to be interested in technology; I was particularly interested in the influence that technology could have in strengthening the initiatives that foster this economic transformation.

It seems obvious now, of course, but at the time it was an important revelation for me: technology poses risks, yes, but it may also extend our reach and multiply our possibilities. My thinking at the time was that if the social and solidarity economy was to have any significant impact in the future of our world, it needed to not only make use of new technologies, it needed to be a leader of their design, development and use. There were scattered initiatives that did already try to make this connection, with this same urgency, and even in these same terms, but the fact of the matter was that the social and solidarity economy movement was, and still is, failing to achieve an ideal level of syncretism with technology.

I began to wonder how I, if even a little, could add to the series of actions that edged this particular view of the world and of our economy closer to the centre of the technological stage. At the same time, I began to learn about ideas and initiatives that emerged directly from technological spheres that, inadvertently it would seem, reflected social and otherwise alternative economic values. These ideas and initiatives were primarily concerned with issues regarding privacy and freedom, and so the underlying economic values were often ignored, thereby limiting cooperation between the two movements. There were, however, more than enough precedents to suggest that a synergy between the two movements was viable, desirable, and on its way. To me, one of the more provocative evidences of this came from the

Personal Declaration of Richard Stallman and Euclides Mance (Annex 1), the former from the *Free Software Foundation* and the latter from *Solidarius*, a Social and Solidarity Economy organization based in Brazil. Amongst other things, they say:

> "We believe that the free software and solidarity economy movements should collaborate to make software solutions that are entirely free/libre, aiming to meet the needs of the solidarity economy. [...] The free software and solidarity economy movements should also collaborate to encourage self-managed enterprises that produce free software according to the ideas of solidarity economy. These will strengthen democracy in the economic and technical spheres, and will help the development of local communities integrated in collaborative networking." (2013, retrieved from: https://stallman.org/solidarity-economy.html)

By this time, in an effort to be more inclusive, I began to talk about alternative economic cultures, instead of 'just' the social and solidarity economy. With this in mind, and as my research progressed, I started to learn about many other ideas and initiatives that, in one way or another, aimed to connect these two movements. Despite all its nuances, the sharing economy could, under certain conditions, be an example of this; the same goes for platform cooperativism, the digital commons or the peer-to-peer economy. My initial intention was to study one of these examples, but I finally decided to go on slightly different direction: instead of focusing on particular movements or initiatives –such as those of the platform cooperativism, for example– I would focus on an alternative economic culture itself.

In other words, my starting point would not be, as I explain in the third section of this thesis, "conscious projects of reinvention of life", but rather projects that merely act within their own cultural parameters, and in so doing, sometimes unwittingly, reinventing life, so to speak. Because of my personal and professional interests, I decided to focus in Latin America and its alternative economic cultures. As I later explain, I chose to analyse the case of Ik' ta K'op, which is a Maya-Tzeltal collective in Abasolo, Chiapas that offers communication services to their community and other surrounding villages.

In order to understand their relationship with information and communication technologies, I chose the Hacker Ethic as a conceptual framework considering its conspicuous, though always debatable, pertinence, as well as Ik' ta K'op's explicit affinity with the term. This is all explained in detail in the following section of this thesis. Finally, the concept of *effective use* was used as a reference to underpin the analysis of this relationship between the alternative economic culture in Ik' ta K'op, and the Hacker Ethic in the technology they used and developed. As such, the objective of my thesis is to study the Hacker Ethic based on the assumption that *it may serve as a technical and philosophical basis for the effective use of ICTs in the case of Ik' ta K'op*.

This *Presentation* aside, the remainder of my thesis is organised in seven main sections. The first of these is the *Introduction*, where I discuss the relevance of my topic, as well as the general academic sphere within which my thesis is located. In this section, there is a also a subsection titled *Subject and case study justification*, where I talk about the case study that is chosen and why it is a pertinent selection for this investigation. This section also serves to enclose the problem that my thesis hopes to address, which is essentially the homogenising imperative of capitalism, as evidenced in the design, use and development of ICTs.

The next three sections are my theoretical framework. I begin with a discussion on the theoretical parameters of alternative economic cultures, emphasising in particular all those elements that are relevant to this case study in particular. In the section after that I discuss the hacker ethic as a moral code, so that later I may propose the Hacker Ethic as a conceptual framework for my investigation. In the last section of my theoretical framework, I talk about the effective use of ICTs. This section also serves as a methodological and epistemological framework for my research.

The next three sections of my thesis are (in this order): *Methodology*, *Results*, and *Discussion*. On this note, it may only be important to note that the results of my thesis are

organised in three subsections. In the first of these I offer a general presentation of Ik' ta K'op and Abasolo; in the next subsection, I talk about Ik' ta K'op's use of ICTs and its concurrence with the Hacker Ethic, and finally, in the last subsection, I analyse to what extent the Hacker Ethic has served as a technical and philosophical basis for the effective use of ICTs. I then layout the references I used as well as the annexes that may help elucidate some aspects of this investigation.

Introduction

It could be said that the underlying problem that prompts this thesis is the cultural domination of capitalism and modern economic thought, for they establish and enforce a system of values that are ultimately aimed at maximizing the accumulation of capital. This invariably imposes a cultural uniformity that undermines our differences and limits our economic practices to those that generate exchange value. As a consequence, the prevalence of capitalism is unable to reflect, understand and deal with the enormous complexity and diversity that characterizes our reality. In this sense, this investigation falls under a broad spectrum of endeavours that recognize our social and environmental urgency, and that understand that, by overcoming the prevailing economic system, we may also find cause for hope and alleviation.

With that said, it is important to acknowledge that the cultural domination of capitalism is not an immanent feature of human nature (Harvey, 2005), for there "is no abstract, inevitable economic logic outside human practice, a metaphysical, a-historical logic to which humans should conform" (Castells, 2017, p. 2). Instead, this is a social and historical construct that derives from the preponderance of capitalist institutions (Sennet, 2006). It is true that capitalism is not the sole –nor always the most important– factor determining our social organization (Banet-Weiser, *et al*. 2017), but it is, undoubtedly, crucial in defining how we understand and shape our world. A notorious example of this may be found in our classrooms, where neoclassical economics still reigns undisputed (Earle, *et al.*, 2017). From there, its view of the world is only invigorated, as evidenced by Paul Samuelson's famous phrase: "I don't care who writes a nation's laws, if I can write its economics textbooks." (1990).

This thesis is especially concerned with how this cultural and institutionalized framework interacts in the network society, particularly vis-à-vis the new information and communication technologies (ICTs). Considering that, as Postman (1992) says, "...embedded

in every tool is an ideological bias, a predisposition to construct the world as one thing rather than another, to value one thing over another" (p.13), it follows then that these technologies would *tend* to reinforce and bolster the prevalent culture of our time. As a simplification of sorts, it could be said, in the ever-so pertinent words of Thoreau (1995), that "our inventions are but improved means to an unimproved end." The cultural uniformity imposed by capitalism is relevant in this case too, because it suggests that, even if alternative, or 'disruptive' technologies emerge, they would eventually be subdued by the imperative to accumulate capital. This is not to say that there have been no great achievements; some may still even be considered as 'disruptive' in the most profound sense of the word, but whether or not they could be essentially transformative is still uncertain.

The case of blockchain is a paradigmatic example: in 2015, the report *Blockchain: Blueprint for a New Economy* was hailing the distributed ledger system as a source for radical transformation: "We may be at the dawn of a new revolution" –it began– for this disruptive technology would have the capacity to reconfigure "all aspects of society and its operations" (Swan, 2015). And indeed, there are strong arguments upholding its case. Swartz (2017) discusses 'radical' blockchain projects that are oriented towards "revolutionary social, economic, and political change", and more generally, to a "new techno-economic order". One example she mentions is Backfeed, a start-up that proposes to produce...

> "[a] distributed governance system for blockchain-based applications allowing for the collaborative creation and distribution of value in spontaneously emerging networks of peers as well as tools that enable large-scale, free and systematic cooperation between thousands of people without the coordination of any central authority" (Swartz citing Backfeed, p. 86).

Parallel to those 'radical' and 'revolutionary' initiatives, however, Swartz discusses "incorporative" blockchain projects, which are those that "[...] do not necessarily seek to change the underlying financial system from a political or social perspective; instead they seek to incorporate the blockchain into the existing system to make that system more

efficient". Now, these "incorporative" blockchain projects are bolstered by millions of dollars from the traditional financial sector as well as other tech companies such as Google. So, while the jury is still not out, the question that lingers is, following up on Thoreau's idea, if blockchain will help redefine our ends, or simply improve the means.

Like blockchain, there are other examples that should leave us wary. The sharing economy, for example, which began with the idea of strengthening peer-to-peer commerce eventually became the popular term to describe digital platforms that facilitate on-demand task work. Still, the most disconcerting example is that of the internet, which is at the heart of another potentially transformative movement: the digital commons. Tim Berners-Lee, inventor of the World Wide Web, famously said: "The original idea of the web was that it should be a collaborative space where you can communicate through sharing information." Now, it has become the bedrock over which enormous corporations such as Google, Facebook and Apple establish their digital monopolies. According to Kate Raworth (2017), "They are now effectively running the global social commons in the interest of their own commercial ventures, while aggressively arming themselves with patents to guard that privilege." (p. 192).

In the complex interaction of cultural, political, economic and technological factors that determine how a society evolves and transforms, capitalism is pervasive. And although our social organization results from disputing systems of beliefs, amongst which capitalism is not always predominant, our economy *is* capitalist. In other words, we do not necessarily live in a capitalist society, but we do have a predominantly capitalist economy (Banet-Weiser, 2017), and this affects every aspect of our lives in society, including how and to what end we create, use and distribute technologies. To recapitulate, then, the problem with the prevalence of capitalism is that it demands a cultural uniformity that does not reflect the complexity and diversity of our reality. Through its logic and processes, it actually insists on understanding

and shaping our world according to its limited framework, and, in so doing, exacerbating social injustices and aggravating the environmental crisis.

Subject and case study justification

Based on the previous discussion, it follows that any effort aimed at the transformation of our economic system should consider our cultural diversity. In this spirit, the next section of my thesis is dedicated to the presentation and the discussion of the concept of "alternative economic cultures". Because the name of the concept allows for an intuitive interpretation of its connotation, at this point, I would simply like to express that the case study selected for this thesis had to be an economic initiative that was based on an alternative economic culture. That was the first criterion for the selection of Ik' ta K'op. The second criterion for the selection of the case study was that the initiative incorporate digital technologies as a fundamental element of their operation, their services, and more generally, their *raison-d'être*.

With these two criteria guiding the selection process, the list of possibilities was still ample to say the least. I did intend on focusing on the Mexican experience, but even then, I could draw cases from a myriad of theoretical and empirical trends. Platform cooperativism offered a few great initiatives, for example; so did other commons-based projects. In the end, from the extensive pool of possibilities, the selection of Ik' ta K'op as the case study for my investigation was based on two main reasons. The first of these is that I have been personally and professionally interested in studying and advancing Latin American economic alternatives. This does not only mean that they be based in the region, but that they build upon local and regional cultures and life systems. The case of Ik' ta K'op was particularly interesting in this sense because its members are Tzeltal, and their economic practices reflect their indigenous worldview, which falls, at least in part, under the umbrella of *Lekil Kuxlejal*.

Lekil Kuxlejal may be roughly translated as 'well-living', or *Buen Vivir*, in Spanish. What is interesting is that other indigenous cultures in the region have similar concepts that

have also been translated as *Buen Vivir*. I discuss this in more detail in the next section, but as a manner of justification, I would like to point out that *Buen Vivir*, in its broader sense, has inspired much expectation in terms of the opportunities it may offer, not just to those who live by its ideals, but to societies in general, and especially to those who actively work for a fairer world system, whatever this may mean. In this sense, focusing on Ik' ta K'op would allow me to better understand the role that an ancestral life system, namely *Lekil Kuxlejal*, could play in the continued, yet dispersed efforts to transform our economic system at a time where digital technologies define how we interact with each other.

That is not the immediate objective of my research, though. As I mentioned in the previous section, I am ultimately interested in studying how the hacker ethic may serve as a philosophical and technical basis for the effective use of ICTs in an alternative economic culture. A hypothetical second step would be to analyse how the effective use of ICTs by alternative economic cultures could lead to an equipotential, cross-cultural dialogue that fosters a culturally inclusive economic system. In any case, regardless of the systemic potential of *Lekil Kuxlejal* and *Buen Vivir*, any attempt at further understanding these life systems is relevant insofar as it represents the worldview of millions of indigenous peoples in Latin America. Considering the digital world that we live in, it is especially important, I would argue, to understand their relationship with the new technologies that shape our world.

On a simpler note, the second reason that I had for choosing Ik' ta K'op was purely practical. After spending a week in another Tzeltal community, I began researching about community networks projects in Chiapas, and stumbled upon a journalistic article that covered Mariano's incident with the US consulate in Mexico City. After sending them a message, I realized that I was in a community that was about two hours away from Abasolo, so in my way back to San Cristobal de las Casas, I stopped at Mariano's house. After talking

to him for an hour, I was totally captivated by their work, and decided to stay with them and keep on learning about who they were, what they did, and what they aspired to.

Alternative Economic Cultures: conceptual proposal

Humanity is profoundly diverse. Whether it be in the way we talk, the way we dress, or even in the way that we satisfy our needs and desires, we find that human expressions and practices reflect a myriad of cultures; that is, countless of ways to think and live. Our economy, too, is culture, for it is made up of human practices framed by institutions that are embedded in specific cultures (Ostrom, 2005; Castells, *et al*., 2012, 2017; Zelizer, 2013). Consequently, since there are many cultures in our world, we must recognize that there are countless of economic practices –other than contemporary financial capitalism– that may define how we organize our livelihoods.

This idea is irreconcilable with the ontological dogma of neoclassical theory and the essentialism of neoliberal ideology, both of which have served to legitimize capitalism and to strengthen and propagate its hegemonic control. Therefore, recognizing that economy is culture is already a step beyond the traditional framework that still prevails in our time. This is not just any small step, however, because it necessarily means admitting, as mentioned previously, that our economic practices may therefore be as diverse as the myriad of ways of being and thinking that are embodied by billions of people around the world.

Unfortunately, while the economic expressions of our cultures are different, there is an underlying paradigm that tends to homogenise our economic practices and neglects our cultural diversity. In this globalized world, our values are transversally determined by the dominant systems of thought and their institutions, and considering that the global economy is capitalist, then it follows that the accumulation of capital is the predominant value in our economy (B-W, 2017; Castells, 2017). This does not mean that we have forfeited our differences, it means that we have constrained them:

> "There are as many economic practices as there are cultures. If standardized forms of capitalism appear to provide uniformity to economic practices it is only because of the cultural domination of capitalism, of

> the different forms of capitalism, enforced by institutions whose rules result from power struggle institutionalised in the law – always in flux." (Castells, M., 2017)

It is in this scenario that the idea of *alternative economic cultures* gains relevance and sense. As its name implies, there is no single element that links all these cultures together other than the fact that they are 'alternative' to the dominant system of beliefs of our time. Castells, Caraca, *et. al*. (2012) further distinguish these alternative cultures by differentiating those that are "survivors of pre-capitalist cultures", those that are "conscious projects of reinvention of life", and those that merely adapt "to the uncertain contours of existing capitalism". Table 4.1 (*Types of Alternative Economic Cultures*) summarizes and discusses the three different types of alternative economic cultures. To make it a little clearer, perhaps, I propose using the concepts of 'disruptive cultures' and 'excluded cultures' as variations of 'conscious projects of reinvention of life' and 'adaptive cultures', respectively.

This taxonomy –of sorts– of the different types of alternative economic cultures is very revealing and pertinent. It allows for a fairly clear depiction of what an alternative economic culture may be. Nonetheless, it should be said that it does not fully reflect the motivations and the intentions of the myriad of cultures that fall under the scope of what is deemed 'alternative'. The Social and Solidarity Economy, for example, which is herein categorized as an 'excluded economy', may also be manifest in pre-capitalist cultures and disruptive cultures (Pastore, 2006; Razeto, 1999). It is also worth noting that these cultures are not just economically alternative, but holistically so. Pre-capitalist cultures such as *Lekil Kuxlejal*, for example, don't just differ from capitalism in the value-system that guides their economic practices, but in every or most other aspects too. However, this investigation is concerned with the economic condition of these alternative cultures for it is inserted within the broader movement that aims to transform the prevailing economic system.

Table 1: Types of Alternative Economic Cultures

Alternative Economic Culture	Alternative concept	Description	Examples
Pre-capitalist cultures	*same concept*	Cultural systems that pre-date capitalism	Lekil Kuxlejal, Ubuntu, Sumak Kawsay
Conscious projects of reinvention life	Disruptive cultures	Cultural movements that actively seek to transform the economic system	Platform cooperativism, Sharing Economy, P2P
Adaptive cultures	Excluded cultures	Cultural systems that are excluded from capitalist structures, and that have created alternative ways to survive as "others"	Popular Economy, Social and Solidarity Economy

Adapted from *Aftermath: The Cultures of the Economic Crisis* (2012)

So, the 'alternative' part of the concept is fairly straightforward, but the extent to which they constitute 'cultures', and moreover 'economic cultures' may seem a little more confusing. For present purposes, 'culture' may be understood as the set of values and beliefs orienting behaviour (Ostrom, 2005); 'economic culture', then, refers to the values that define and guide the set of practices in the processes of production, consumption and exchange within a particular context. In other words, I adopt a broad, substantivist understanding of 'economy', as opposed to the neoclassical approach, which fails to acknowledge the social, political and cultural structures in which the economic interactions take place (Plattner, 1989). By doing this, I may concentrate my analysis on the ways that a group of people operating under an alternative culture satisfy their needs and desires. Hence, "alternative economic cultures".

From the distinction proposed by Castells, Caraca, *et al*, it is evident that the first category of "alternative economic cultures" refers to, well, cultures. It's in its name: pre-capitalist *cultures*. It is less obvious with the remaining two, for they are reflections of, or reactions to, the prevailing system. As such, recognizing their alternative economic practices may be self-evident, but the culture behind them –the economic value-system– is not as easily discernible. However, alternative economic practices may only be 'alternative' so long as they

are underpinned by an alternative economic culture. Otherwise, they would simply be innovations, or 'disruptions', in the same sense that the mainstream practices of the sharing economy have turned out to be.

This is the argument sustained by Castells (2012) when he suggests, that, considering the hegemonic character of capitalism, "any substantial socio-economic restructuring of global capitalism implies the formation of a new economic culture"; or of Peter Nolan when he argues that, "[...] only when and if a fundamental cultural change takes place, will new forms of economic organization and institutions emerge, ensuring the sustainability of the evolution of the economic system" (2009). It is for this reason that this investigation is focused on alternative economic cultures, and not their practices. The demand for an economic system that allows for diversity is thus sustained on principle, because we *are* different, but also on pragmatic grounds: alternative economic cultures may offer an alternative way forward, one that is potentially more just and more aware of our ecological boundaries.

Buen Vivir as alternative economic cultures

The alternative culture chosen as a case study for this thesis is the Tzeltal worldview, which may be argued to fall under the notion of *Lekil Kuxlejal*. For now, it is worth discussing the broader concept of *Buen Vivir*, or *Vivir Bien* (well-living), which simultaneously serves as *a* translation of *Lekil Kuxlejal*[1], and other ancestral worldviews. This is important because the ultimate ideal that this thesis hopes to bolster is that of an economic transformation, which, as it has also been argued, should rely on the cultural diversity that reflects humanity. In other words, the results of this thesis should hopefully, in one way or another, be of use to other alternative economic cultures, and perhaps especially so to pre-capitalist cultures.

[1] This translation is not literal, and it may be argued against it.

Although the concept of *Buen Vivir* has only recently begun to be broadly discussed and studied, the idea has ancestral roots in various indigenous traditions. Besides the Mayans, who speak of *lekil kuxelajl*, there are also the Aymaras, who speak of *suma qamaña*, or *kume mogen* of the Mapuche, *teko pora* of the Guaraní, and *balu wala* of the Kunas. But the most recognized of these indigenous traditions is perhaps *sumak kawsay*, of the Kichwas, since it was introduced into the national political scenario of Ecuador and Bolivia at some point during the first years of the millennium (Acosta, 2017). While a more specific connotation of *Buen Vivir* varies amongst these various cultures, they may all be consistently understood as an ethos that is guided by principles very different from those that prevail in the world that we live in today. The Ecuadorian economist, Alberto Acosta, proposes the following description:

> "*Buen Vivir* represents the philosophical visions of indigenous peoples that in no way correspond with Western ideas. They are philosophies that are alive, though not through professional philosophers; they are practices without theory. Above all, they are community experiences and collective memories. More than rigid concepts, they are day-to-day experiences." (2017, p. 213)

It should be noted from these descriptions that the discussion on *Buen Vivir* cannot be exhaustive, not only because it is presently unnecessary, but also, as it will be discussed in the following section, because it may not be possible without a profound intellectual decolonization (Ngũgĩ, 1986; Quijano, 2014). What's more, even from a decolonized perspective, *Buen Vivir* is not –and cannot be– a discernible, detailed or undisputed proposal. As such, it should only be taken as a reference to, and as a complementary note on, the case study of this investigation as well as the general objectives that guide it. In the simplest of terms, *Buen Vivir* is but an idea(s) by which many people in Latin America, particularly certain indigenous communities, hope to live by. That, in and of itself, is enough justification for its consideration, but what makes it interesting for the purposes presently outlined is its presumably inherent potential to bring about change.

While *Buen Vivir* should of course not be considered as a panacea of any sort, there are reasons to condone the hope it inspires. As far as this endeavour is concerned, some of the more relevant discussions on this topic come from the realization that the conventional understanding of "development" –which, in itself, is a broad spectrum, ranging from those that equate it with economic growth, to those that speak of sustainable development– have failed theoretically and empirically, leading to what various scholars deem as a "Maldevelopment" (Amin, 1990; Sachs, 1992; Unceta, 2018; Acosta, 2015). To elaborate on this concept, Tortosa (2009) offers the following explanation:

> "It [maldevelopment] refers, first, to the failure of program of "development" and, second, to the "Bad Living" that can be observed in the functioning of the global system and its components, from nation States to local communities. If "development" implies a normative element (desirable), "maldevelopment" contains a empirical component (observable) or even critical (undesirable)."

These discussions are generally framed within the post-development theoretical trend, which often see in *Buen Vivir* a viable alternative to the cultural domination of capitalism. Giraldo (2014) goes so far as to suggest that it is "the most appealing alternative to capitalist modernity" (*own translation*; p. 16), while others believe that it is –at least– one of the key components for a "Great Transformation" (Beling, Vamhulst, *et al.*, 2018). Catherine Walsh (2010) proposes considering *Buen Vivir*, not just as a basis for post-development research, but as development itself. She argues that, "'development' has always signalled more than just material progress and economic growth; it has marked a western model of judgement and control over life itself." (p. 15). In this scenario, the notion of *Buen Vivir* as a new regimen of development is not just an attempt to address socio economic injustices and environmental abuse, but also to assert the claim of other cultural life systems.

Grounding this theory is extremely difficult for, as it has already been mentioned, *Buen Vivir* is not –and cannot be– a discernible, detailed or undisputed proposal. The evidences

gathered from the Ecuadorian and Bolivian experiences may serve as case studies for future endeavours, but it is safe to say that its political and economic possibilities and repercussions remain practically unknown. As the case study for this thesis, what is important, however, is that it be recognized as an alternative economic culture with alternative economic practices. Because of its conspicuity, everything else said hitherto is merely the justification for the selection of this case study in general. To recapitulate: *Buen Vivir* is a recognized alternative that originates from indigenous cultures that predate modern society, and that are scattered throughout the American continent.

The Hacker Ethic

Elias Ladopoulos (1990), alias Acid Phreak, suggested that, "There is no one hacker ethic. Everyone has his own. To say that we all think that same way is preposterous." And so, granted, any generalization of a complex concept such as this may be misleading. On this note, Coleman (2013) also notes that most of the academic work on hackers has whitewashed their heterogeneity. Thus far, she adds, the literature on hackers has limited their moral standing to a binary framework that either denounces them or applauds them (p. 256). In this binary framework, the first group denounces hacking for it associates it with computer crime, network intrusion and even cyberterrorism. Under this conception, hackers are considered as "...one of the more pernicious problems faced by societies which are becoming increasingly dependent on new media and digital information systems." (Gunkel, 2005).

The second group has emphasized on promoting a positive connotation of what it means to be a hacker, highlighting, amongst other things, their inquisitive attitude, their creativity, their unwavering determination for upholding freedom and their critical stance on the iron cage of capitalism (Levy, 2001; Himanen, 2001; Wark, 2004; Graham, 2011). This dichotomy is present, not just in academic papers, but in society in general. The former view is often seen in newspaper reports, where the word "hackers" is used to describe the people who commit some sort of digital crime. The latter is fairly visible too; it is less common, perhaps, but variations of the word "hacker" are used to refer to people, activities and projects that aim to offer creative solutions to particular problems.

To overcome this limited, dichotomous view, Coleman and Golub propose acknowledging that the "hacker morality in fact exists as multiple, overlapping genres that converge with broader prevailing political and cultural processes" (2008, p. 256). They distinguish three moral expressions of hackers based on three modes of hacker practice: cryptofreedom, free and open source software, and the hacker underground. For present

intents and purposes, this proposal may be taken to suggest that there are three types of hackers: Cryptofreedom hackers, Free/libre Software hackers, and Underground hackers (Table 2: *Moral expressions of hackers* summarizes their main components).

Table 2: *Moral expressions of hackers*

Moral expressions	Mode of hacker practice	Description
Cryptofreedom Hacker	Cryptofreedom	It combines liberal concerns (of freedom and self-reliance) with advances in cryptography to develop technically informed understandings of privacy. (p. 259)
Free and Open Source Software hacker (F/OSS)	Free/libre and Open Source Software	It too draws from liberal culture, but it's focused on creating a free ecosystem – "as in free speech, not as in free beer" (p. 262)
Underground Hacker	Underground	Asserts that liberal values are unattainable ideals, and so adopts a realist perspective that celebrates the "return of power": "the practice of the hacker underground represents merely a radicalization, rather than a complete break from, the moral claims of liberalism." (263)

Based on information from Coleman, G., and Golub, A. (2008)

So, like with any other cultural group, hackers cannot be presumed to operate within one ethical code. As Coleman states, "Although hacker ethical principles may have a common core—one might even say a general ethos—ethnographic inquiry soon demonstrates that similar to any cultural sphere, we can easily identify great variance, ambiguity, and even serious points of contention." (2013; p. 13). Despite everything said, however, I will be using the concept of Hacker Ethic to describe the *prototypical* cultural *parameters*/*conventions* that guide the group of people (hackers) that align with the "positive" view of hackers. In other words, I do not mean to imply that there is one distinct ethical code guiding all hackers; I am proposing to use the *concept* of "Hacker Ethic" to describe the cultural underpinnings of the

people (and the technology) who fall under the positive definition of what a hacker is, as proposed by the authors previously mentioned.

The inspiration for using the Hacker Ethic as *the* guiding concept first came from reading Pekka Himanen's book, *The Hacker Ethic and the Spirit of the Information Age*, where he suggests the following:

> "What if we looked at hackers from a wider perspective? What does their challenge then mean? Looking at the hacker ethic in this way, it becomes a name for a general passionate relationship to work that is developing in our information age. From this perspective, the hacker ethic is a new work ethic that challenges the attitude toward work that has held us in its thrall for so long, the Protestant work ethic, as explicated in Max Weber's classic The Protestant Ethic and the Spirit of Capitalism." (2001, p. IX).

So again, in this investigation, the Hacker Ethic –as a concept, and not as the alleged moral code transversely guiding all hackers– is understood in the 'positive' way that others have before. But before introducing the concept, the next section will focus on discussing the 'general ethos' that guides the hacker movement. The section after that will then be dedicated to a specific formulation of the concept of the Hacker Ethic, so that this may later serve as the scheme through which the collected data will be conveyed and processed. It should be noted that this conceptualization is not based on an ethnographic analysis, but in the collection and analysis of theoretical evidences. Most importantly, this conceptual proposal aims to reflect the cultural portrayal of hackers by some of its main cultural exponents.

The general ethos of hackers

The first connection between the word "hack" and the use of computers may be traced back to the M.I.T. Tech Model Railroad Club, which in 1955 added this note to its minutes: "Mr. Eccles requests that anyone working or hacking on the electrical system turn the power off to avoid fuse blowing." From there, the word evolved to take on many other and more convoluted senses, but its earlier uses, in any case, do seem to suggest a rather "benign sense

of ‘working on’ a tech problem in a different, presumably more creative way than what’s outlined in an instruction manual.” (Ben Yagoda citing lexicographer Jesse Sheidlower, 2014). This early connotation of what it meant to hack is still, in one way or another, present in the ‘genetic code’, so to speak, of all hackers, whether they be crypto, F/OSS or underground, as hinted in *Table 2: Moral expressions of hackers*.

The ethos guiding hackers does derive its culture from those earlier expressions of the term: the ‘creativity’ component mentioned by Sheidlower is still an intrinsic element of what constitutes a hacker. Lakhani and Wolf (2005) found in their research that enjoyment-based intrinsic motivation – “namely how creative a person feels when working on the project”– was the “strongest and most pervasive driver” for participating in F/OSS projects. This idea is echoed, one way or another, by many recognized hackers: Linus Torvalds, for example, argues that “entertainment” –or, “the mental gymnastics involved in trying to explain the universe” (p. xv)– is the third category that explains hackers’ motivation, while Paul Graham takes it a step further, equating hacking with various artistic expressions:

> “What hackers and painters have in common is that they're both makers. Along with composers, architects, and writers, what hackers and painters are trying to do is make good things. They're not doing research per se, though if in the course of trying to make good things they discover some new technique, so much the better.” (2004, p. 21).

But besides this rather abstract sense of working creatively on a ‘tech problem”, there are other elements that seem to be shared by most, if not all, who consider themselves as hackers. Coleman discusses the liberal values that permeate the hacker culture; she says: “To be sure, hackers can be grasped by their similarities. They tend to value a set of liberal principles: freedom, privacy, and access.” (2013, p. 17). This too is manifest in most theoretical –and empirical, for that matter– accounts; Eric Raymond (2008), for example, begins his description of the hacker attitude by saying that hackers “...believe in freedom and

voluntary mutual help", while McKenzie Wark, in his *Hacker Manifesto*, argues that: "Hackers are not joiners. We're not often willing to submerge our singularity. What the times call for is a collective hack that realizes a class interest based on an alignment of differences rather than a coercive unity." (2004)

These liberal values are not unquestioned, however. This is most evident, perhaps, with the discussion on property rights, a pillar of liberal principles, and a point of tension for hackers and anyone else trying to make sense of their legal and moral standing. By any standard, hackers do not seem to be inciting the abolition of private property, and yet they – free/libre software hackers, mostly– do vehemently defend the notion that knowledge (intellectual property) should be free and open. It turns out that there is not necessarily a contradiction between one and the other; technological advancements require questioning precepts that were hitherto ignored. In this sense, Eric Raymond asks: "What does 'ownership' mean when property is infinitely replicable, highly malleable, and the surrounding culture has neither coercive power relationships nor material scarcity economics?" (p. 38). Again, Coleman and Golub, referencing a number of different authors, offer an illustrative explanation:

> "...free and open source software licenses enable new regimes in which the autonomy of the self is still connected with the use and enjoyment of property, but in these regimes the property is intellectual and the use and enjoyment is enabled through sharing, rather than through a form of 'possessive individualism' (Macpherson, 1962). Free and open source software practice thus not only questions current regimes of copyright and patents but also provides an alternative template for the rearticulation of long-standing ideals of liberal freedom, such as free speech, but in a technocultural mode distinct from previous property regimes (Chopra and Dexter, 2007; Coleman, 2004; Kelty, 2005, 2008; Weber, 2005)." (2008, p. 268).

From an economic perspective, the liberal legacy that encompasses hackers, as it were, leads to questions regarding their standpoint vis-à-vis capitalism; after all, property, in

Marxian economics, is the cornerstone of its economic system. In this respect, there is even more discordance, and trying to funnel their heterogeneity into a 'general ethos' cannot happen without neglecting important sectors of the hacker class. In an effort to make sense of the varying views, Raymond proposes categorizing hackers according to their opinion on commercial software, or "the companies perceived to dominate the commercial software market" (p. 54). He divides them into three groups: those that are "very anticommercial", those that are "moderately anticommercial", and those that are "un-anticommercial". Table 3: *Hackers on commercial software* summarizes Raymond's theory.

Table 3: *Hackers on commercial software*

	Description
very anticommercial	"Commercial software is theft and hoarding. I write free software to end this evil"
moderately anticommercial	"Commercial software in general is okay because programmers deserve to get paid, but companies that coast on shoddy products and throw their weight around are evil"
un-anticommercial	"Commercial software is fine, as long as I get the source, or it does what I want it to do."

Based on information from Raymond, E. (2008)

Another unifying element amongst hackers is their awkward relationship with the legal system. As mentioned before, as technology changes social and economic dynamics, our legal parameters seem more and more insufficient. Naturally, in this scenario, hackers are among the first to face these limitations: "Hacker actions or their artefacts are usually either in legally dubious waters or at the cusp of new legal meaning. Hence, they make visible emerging or contentious dilemmas." (Coleman, 2013, p. 19). This could be one of the reasons as to why the word 'hackers' has also gained a negative connotation – hackers do not necessarily need to break rules to stir trouble and create discomfort.

The Hacker Ethic: conceptual proposal

There is a general ethos that binds a hacker class together, as discussed in the previous section. Besides these –almost– transversal traits, however, there are other, less generalising elements that create what could be technically described as a subculture of hackers. To some, this subculture of hackers is *the* culture of hackers. For this thesis, the Hacker Ethic reflects this particular understanding of this culture. This understanding of hackers generally shines a positive light over them; to use Coleman and Golub's categorization of the moral expression of hackers, the concept of the Hacker Ethic used in this investigation is closest to that of the free/libre software hackers. As such, it is analogous to other concepts and ideas, like, of course, free/libre software, but also the –digital– commons, crypto-commonism, peer-to-peer, the maker movement, *et al.*

Despite the negative connotation that the concept later developed, in the computer world, where the term naturally evolves, hackers are still closer to being "adventurers, visionaries, risk-takers, artists...", rather than "nerdy social outcasts" (Levy, 2001). In an effort to make sense of the 'common philosophy' amongst these "digital explorers", Steven Levy, in his book, *Hackers: heroes of the computer revolution*, defines a hacker as anyone that believes that "essential lessons can be learned about the systems—about the world—from taking things apart, seeing how they work, and using this knowledge to create new and even more interesting things." (2001, p. 40). Under this definition, hacking becomes more difficult to understand since it goes beyond the realm of computers; it has actually become a word that helps describe any activity that is essentially different from the norm. 'Hacking' could describe anything from picking a lock to the design of furniture.

Strictly speaking though, to a programmer, a hacker is an expert: "someone who can make a computer do what he wants—whether the computer wants to or not." (Graham, 2011, p. 49) However, the essence of a hacker, in ethical terms, is not what he or she can do, but

how it is done. Now, because there is no formal organisation of a Hacker Ethic, there is no specific code or manual to adhere to. Notwithstanding, there is an ethic of sorts, perhaps best portrayed by a series of criteria that are typically recognized as underlying principles. Based on his experience and analysis, Steven Levy suggests five general principles of the Hacker Ethic; these are:

- Sharing
- Openness
- Decentralization
- Free access to computers
- World Improvement

With respects to the criteria that guide the hacker movement, there are other beacons, so to speak, but perhaps none as important or as discernible as the Free Software Foundation and its founder, Richard Matthew Stallman. According to Eric Raymond (2008), "The FSF's [Free Software Foundation] vigorous and explicit drive to 'Stamp Out Software Hoarding!' became the closest thing to a hacker ideology, and RMS [Richard Matthew Stallman] the closest thing to a leader of the hacker culture." (p. 69). In a 1997 interview for Meme, Stallman points the Hacker Ethic to "...the feelings of right and wrong, to the ethical ideas this community of people had — that knowledge should be shared with other people who can benefit from it, and that important resources should be utilized rather than wasted." This belief is best reflected in the four 'essential freedoms' of genuinely free software (Philosophy of the GNU project):

- [freedom] to run the program,
- [freedom] to study and change the program in source code form,
- [freedom] to redistribute exact copies, and
- [freedom] to distribute modified versions

The concept of the Hacker Ethic as presented thus far does not immediately and integrally correspond to any of the three types of hackers that are implicit in Coleman and

Golub's research, although, as it was already mentioned, it may be most conspicuously identified with the "Free and Open Source Software Hacker", as evidenced by the philosophy of the GNU project. However, as Coleman and Golub recognize, the hacker morality "...exists as multiple, overlapping genres...", and so other elements, typically recognized in other types of hackers, may also fit into this conceptualization. From the cryptofreedom hackers, for example, Coleman and Golub highlight their intent on guaranteeing privacy which, in these times of *surveillance capitalism*, seems particularly relevant for individuals as much as any alternative culture. Phil Zimmerman (1999), a cryptofreedom hacker according to Coleman and Golub's characterization, states the following:

> "If privacy is outlawed, only outlaws will have privacy. Intelligence agencies have good access to good cryptographic technology. So do the big arms and drug traffickers. So do defense contractors, oil companies, and other corporate giants. But ordinary people and grass roots political organizations mostly have not had access to affordable 'military grade' public-key cryptographic technology. Until now. PGP empowers people to take privacy into their own hands. There's a growing social need for it. That's why I wrote it." (p. 184)

Now, despite the fact that this conceptualization is based on a positive understanding of hackers and their philosophy, this does not mean that anyone –that I now– suggests that it is a perfect framework for the organisation of our lives within complex and ever-changing societies. At the end of the day, the general ethos of hackers and even this particular conceptualization is still delineated by liberal principles that have their limitations. Most notably, perhaps, is the fact that, by highlighting and insisting on their individuality, hackers, following Stallman's lead, failed to create a common front, strong enough to face the will of tech giants and other commercial interests that took advantage of free software to further their own economic aspirations, as evidenced by Coleman (2013):

> "In 1998, a couple of computer science graduate students at Stanford University released Google, a search engine powered entirely by Linux. All this activity signalled that although free software was still

expanding through grassroots energy, hackers were clearly moving it much closer into the orbit of high-tech capitalist entrepreneurialism." (p. 78).

The *effective use* of ICTs: a bottom-up approach for its understanding

Conceptual approach and epistemology

While ICTs are an essential tool for social development and other personal and collective aspirations, simply using them is not enough to ensure a positive outcome. Various scholars have actually argued that access to ICTs, in and of themselves, may aggravate socioeconomic inequalities, not just fail to address them (Thompson, 2004; Wade, 2002; Castells, 1998). I discussed this seemingly disconcerting contradiction in the second section of my thesis, but the gist of it is captured in Marshall McLuhan's famous expression, "medium is the message". Despite the potential that they could have, digital technologies, by and large, are inherently limited by the commercial interests that prompted their design and development (Srinivasan, 2017, p. 1). Shoshana Zuboff dwells over this phenomenon extensively in her analysis of the most recent capitalist development: that of surveillance capitalism. She urges us to "hunt the puppet master, not the puppet" (2019, p. xx) — the economy –the economic system– being the 'puppet master', and technology the 'puppet':

> "In a modern capitalist society, technology was, is, and always will be an expression of the economic objectives that direct it into action. A worthwhile exercise would be to delete the word "technology" from our vocabularies in order to see how quickly capitalism's objectives are exposed." (p. xx).

The realization of the dangers of ICTs led researchers to focus on alternative questions; instead of studying how to reduce the digital divide, scholars began wondering how these new technologies may actually promote the development of marginalized individuals and communities (ICT4D). One of the main sources of inspiration for my thesis is Björn-Sören Gigler's *Development as Freedom in a Digital Age: Experiences from the Rural Poor in Bolivia* (2015), which explores the conditions and the process by which ICTs can have an impact on people's human and collective well-being. As its title indicates, it focuses on the case of the rural poor in Bolivia, most of whom are part of the various indigenous nationalities that live in the country. Following up on Sen's idea of 'development as freedom', Gigler

concludes that ICTs can have a positive impact on poor people's economic and social development so long as they are integrated in such a way that they improve individual and collective capabilities — for improved individual and collective capabilities means more freedom, and more freedom means development.

Following a similar rationale, Jensen (2007) sets out to examine how information technologies could improve market performance and increase welfare. The author discusses the case of the South Indian fisheries sector. He finds that the use of mobile phones by fishermen and wholesalers, right after mobile phone service was introduced in the state of Kerala, led to a dramatic reduction in price dispersion, the complete elimination of waste, and an increase in welfare for both consumers and producers. Although Jensen does not dwell over cultural and social factors, he aims to show how a form of adopting new information technologies –instead of ensuring mere 'access'– could, as in this case, improve people's well-being.

Besides overcoming the 'access' fallacy, the example that Gigler, Jensen and other scholars have set goes to show that the risks and the potential offered by ICTs in marginalized groups can only be understood in light of their own social system, their culture and worldview. Gigler reminds us that, "communities are not mere 'beneficiaries' of development but are 'active citizens' who have the capacity and creativity to define their own development priorities, goals, and vision for the future" (2015, p. 3). But even this approach could at times be insufficient due to the limitations imposed by a capitalist system and its narrow cultural parameters, including, as discussed in the *Introduction* of this thesis, its understanding of what 'development' means, or how it is measured. Gigler's central argument and his entire methodology, for example, is based upon the idea that development is freedom — and maybe development *is* freedom, but should it not be each community that determines what is at the top of their social aspirations? What would we find if, for example, the methodology for a

similar investigation was constructed on the basis that, as Catherine Walsh (2010) suggests, development is *Buen Vivir*? Or, what if the problem is not how we access or how we use technology? What if the problem is technology itself? What if existing technologies simply cannot be adapted to fit within the cultural parameters of a particular community? What if the capitalist underpinnings of "new media" technologies are inherently at odds with a pre-capitalist culture, for example?

It is for this reason that, instead of wondering how ICTs may be used to foster development, other scholars have focused on creating a technological ecosystem that reflects and cultivates our cultural diversity. To do this, they have focused on exploring specific cases that stand as examples of good practice and innovation (see: Borrero, 2016; Srinivasan 2017). This alternative approach is designed to figure out how marginalized communities may assert their right to self-determination, and how this, in turn, could foster a technological ecosystem that allows for an equipotential, cross-cultural dialogue. In *Whose Global Village* (2017), Srinivasan explains it in these terms:

> "[In order] to rethink how technologies can better serve diverse cultures and ultimately contribute to the world, we can imagine digital efforts where the voices and knowledges, or *ontologies*, of diverse communities are respected as sovereign while empowered to speak to one another" (2017, p. 7).

In reference to his own book, he then adds:

> "...this book attempts to de-Westernize a top-down understanding of contemporary technology by sharing stories from across the world of how digital tools have been reinvented to support grassroots aspirations, values, and cultures." (p.9).

The field of *community informatics* seems to be at the intersection of these different investigative approaches. It places as much emphasis on the socioeconomic risks and possibilities of –reimagined– ICTs as it does on the social system and the culture within which they are used. In essence, community informatics is driven by the idea that ICTs could

and should enable and empower community processes. In the words of Michael Gurstein (2007):

> "The objective of CI is to use ICT to enable the achievement of community objectives including overcoming "digital divides" both within and between communities. But CI also goes beyond discussions of the "Digital Divide" to examine how and under what conditions ICT access can be made usable and useful to the range of excluded populations and communities and particularly to support local economic development, social justice, and political empowerment using the Internet. (p. 11).

My thesis falls under the scope of community informatics. At the heart of this field of study –and of my own thesis, for that matter– is the concept of *effective use*, which is defined by Michael Gurstein as the ability and possibility to use ICTs in such a way that self–and/or collaboratively identified goals may be accomplished (2007, p. 49). It demands examining the way that people make use of ICTs in their daily lives, as well as how well they have integrated ICTs into their social, productive, and cultural activities (Gurstein, 2003, p. 10). Gurstein explains that:

> "The key element in all of this is not "access" either to infrastructure or end user terminals (bridging the hardware "divide"), rather it is having the knowledge, skills, and supportive organizational and social structures to make effective use of that access and that e-technology to enable social and community objectives." (2007, p. 48).

With this said, the aim of my investigation, at its core, is to evaluate and analyse the *effective use* of ICTs in a community that embodies an alternative economic culture. Following up on Srinivasan's example, I focus on the innovative and good-practice case study of Ik' ta K'op. To get a sense of how relevant this case study is for this investigation, besides everything else already mentioned in the *Introduction* section of this thesis, it is worth remembering what Mariano, one of the founders of the group, mentioned in one of our

interviews together; he said: “We did not want to be absorbed by the internet; we wanted to absorb it into our culture and practices.”

The difficulty of employing *effective use* as a guiding concept for this investigation –or, the added complication, in any case– is that it requires understanding what the social and community objectives are. These “objectives” are not cursory; to get a better sense of what this means, it is worth asking: what does *development* mean to them? What is the equivalent of development to the Tzeltal community of Abasolo, Chiapas? Or to make it more confusing still, how can ICTs be included into their worldview? Answering these questions is exceptionally intricate even within our own worldview and culture (See Section 3), how then should anyone evaluate the *effective use* of ICTs in *another* culture? — one that we are not even part of, and one that we cannot truly understand.

For starters, there is an important precision to be made: I don’t really intend to evaluate and analyse the effective use of ICTs in Abasolo; I intend to interpret *their* evaluation and analysis of how ICTs have been incorporated into their community. My methodological approach is therefore *interpretivist*; a double hermeneutic of sorts: “Interpretive researchers are attempting the difficult task of accessing other people's interpretations, filtering them through their own conceptual apparatus, and feeding a version of events back to others” (Walsham, 1995, p. 77). This methodological approach is pertinent because, as implied hitherto, I cannot presume to wholly understand their culture and worldview, let alone establish parameters with which the effective use of ICTs may be measured. Here again I turn to Srinivasan for a note on my methodological approach:

> “I wish to avoid exoticizing culturally diverse or marginalized communities as ‘special’ while labeling myself a ‘truth teller’. My goal instead is to be mindful of my relative power and privilege, attempt to release it, and tell ethnographic stories of collaboration.” (p. 10).

The interpretivist approach serves as an explicit reminder that this investigation is significantly determined by my subjectivity. It recognizes and highlights the reflexivity behind the analysis that is offered. This, of course, leaves ample room for doubt and critique, as it should. At the same time however, it seems fitting that it should be like this, especially when dealing with the philosophical vision of indigenous peoples for, as Acosta argues, "They are philosophies that are alive, though not through professional philosophers; they are practices without theory. Above all, they are community experiences and collective memories. More than rigid concepts, they are day-to-day experiences." (2017, p. 213) As such, they cannot be matched up against some rigid parameters through which they could be unravelled; instead, they can only be 'lived' through cross-cultural and interpersonal interactions, which is where my experiences and my outlook affect the results of this thesis.

This cross-cultural and interpersonal interactions further cement the relevance of the interpretivist approach for it also accentuates the subjectivity of those people with whom I interact. In other words, it is not just me, a researcher, studying 'their' culture'; it is a group of individuals with different cultures and experiences interacting. What's more, it follows that I, the researcher, embrace the fact that the results of this project depend on a process of collaboration; the community cannot, nor should it, be considered as an object of study. This idea is closely tied to the concept of *collaborative ethnography*, defined by Luke Lassiter (2005) as, "an approach to ethnography that deliberately and explicitly emphasizes collaboration at every point in the ethnographic process, without veiling it—from project conceptualization, to fieldwork, and, especially, through the writing process."

> "Ethnography is, by definition, collaborative. In the communities in which we work, study, or practice, we cannot possibly carry out our unique craft without engaging others in the context of their real, everyday lives. Building on these collaborative relationships between the ethnographer and her or his interlocutors, we create our ethnographic texts. To be sure, we all practice collaboration in one form or

> another when we do ethnography. But collaborative ethnography moves collaboration from its taken-for-granted background and positions it on center stage." (Lassiter, 2005).

Having said this, it is important to recognize at this point that the magnitude of this investigation falls significantly short of being properly ethnographic. Although it draws from broad and inclusive epistemologies (mostly Boaventura de Sousa Santos's *Epistemologies of the South,* 2016), and an ethnographic approach and methodologies, the fact is that my limited resources, time and even experience could not be extended so far as to allow for this investigation to be considered ethnographic. Instead, it could be considered as an empirically-enriched discussion on the economic possibilities of the *Hacker Ethic*, as evidenced in an *Alternative Economic Culture*. In the following section, I discuss in detail the methodology of my research.

Methodology

The investigation centres in and around the case of Ik' ta K'op. As part of the methodological requirements for this thesis, two visits to the community of Abasolo were scheduled, the first in the summer of 2018, and the second in February of this year (2019). In order to achieve the established objectives, the methodology for this thesis draws from qualitative tools and strategies, for they have demonstrated "[...]a relative advantage over studies using more distant quantitative measures in revealing the processes that bring technological and social aims into relative alignment or not" (Walsham, et al., 2007, p. 322)[2]. The most important information-gathering tool was a series of in-depth interviews with members of Ik' ta K'op, as well as other stakeholders, including community leaders and economic associates. In addition to the in-depth interviews, the research draws information from –participant– observation, for it is an indispensable information-gathering tool in any ethnographic approach (Valerio, 2009).

This information was complemented, first, by a week-long visit to Taniperla, another Tzeltal community that lies about two hours away from Abasolo, where I also carried out various interviews and a focus group. Although there they could not speak of the Ik' ta K'op experience specifically (for they did not know of it), they did share their impressions on how "new media" technologies were impacting their lives. These interviews and the focus group were meant to complement any information that I gathered in Abasolo, but, because of their invaluable insight, they may gain relevance in the results of this investigation. Second, I was able to interview Nicolás, a member of the Alter Mundi organisation, and a long-time collaborator of Ik' ta K'op.

[2] In reference to the four papers accepted for the "Special issue on information systems in developing countries", published by MIS Quarterly (2007): vol. 31 No. 2, pp. 317-326

Table 4: *Interviews in alphabetical order, per location*

	Interviewee	Description
	Location: Abasolo, Ocosingo, Chiapas	
1.	Luis Ramón	IT Teacher at COBACH 105; founder and leader of the IntraBACH Yaj Noptik, member of Ik' ta K'op
2.	Daniel	Family business co-owner and internet node operator
3.	Don Mariano	Father of Mariano
4.	Luis	Member of Ik' ta K'op
5.	Mariano	Founder and leader of Ik' ta K'op
6.	Genoveva	Member of Ik' ta K'op
7.	Rosendo	Family business co-owner and internet node operator
8.	Héctor	Member of Ik' ta K'op
9.	Community leaders	Note: This meeting was not recorded. The results are based on observations written the moment after the meeting was over.
	Location: Taniperla, Ocosingo, Chiapas	
1.	Adriana	High School student in COBACH 82
2.	Eliseo	Recent graduate of COBACH 82
3.	Sergio	School Director, COBACH 82
	Other interviews	
1.	Nicolás	Member of AlterMundi A.C.

In Taniperla, the interviews and the focus group that were carried were possible thanks to the support of the COBACH 82 faculty, and particularly of its director, Sergio. Because my visit to Taniperla was meant to complement the information gathered in Abasolo, I chose the interviewees based on the profiles that I thought were necessary at the time. The focus group, on the other hand, was meant to be representative of the different age groups, genders and occupations of the inhabitants of Taniperla. With that in mind, on the fifth day of my visit, I asked various faculty members to suggest a number of people that would be able and willing

to participate in a focus group. Later that day, I knocked on the doors of the houses of those people who had been recommended, and invited them to come the next day to the school's library, where the focus group was to be held. Out of the 12 people who I invited, only four accepted to participate; the rest refused, citing mostly time restraints. In the end, I resorted to inviting two extra members of the school community, in addition to Sergio Santos, who had already been invited. In total, seven community members participated in the focus group. Table 5: Focus Group lists and describes them.

Table 5: *Focus Group in alphabetical order*

	Participant	**Description**
1.	Fanny	Teacher at COBACH 82
2.	José	High school administrator
3.	Adriana	Recently graduated from high school
4.	Gedais	High school student
5.	María	Small business owner
6.	Nazario	Farmer and community leader
7.	Sergio	Cobach 82 director

For the data analysis of the interviews and the focus group, I use the constant comparison method, first introduced by Glasser and Strauss (1967) and developed further by Lincoln and Guba (1985). This method does not operate on predefined analysis units or categories; rather, these are defined after a process of inductive reasoning of the 'data bits' gathered (Valerio, 2009). In this case, the data bits are the ideas expressed in each one of the interviews that were carried out. This process begins by transcribing the interviews (see *Annex 2: Example of interview transcription*), analysing them, and breaking down the data into data bits, or ideas. An example of how each transcribed interview was broken down into 'data bits' is shown in *Annex 3: Interview break down and data bits example*.

These data bits are then cross-referenced amongst the different interviews in order to find common ideas that, in turn, become categories of analysis. In other words, the point is to bring together clusters of ideas that apparently refer to the same issue. According to Coleman, Dye, *et al.* (2000), "The act of categorizing enables us to reduce the complexity of our environment, give direction for activity, identify the objects of the world, reduce the need for constant learning, and allow for ordering and relating classes of events." (p. 4). This is an iterative process; as its name suggests, the process requires constantly comparing data bits in order to progressively refine the categories so that they better reflect the ideas, and the cluster of ideas, expressed during the interviews and the focus group. These categories are laid out in the *Results* section of this thesis, along with examples of the data bits that framed them.

To analyse the information collected via participant observation, I used Spradley's participant observation proposal (1980). This process begins by registering descriptive observations, with the aim of understanding the basic norms of a given culture (see *Annex 4: Example of field notes*). Amongst other things, this part of the methodology allowed me to get a general sense of the spaces, the actors, their activities, their objectives, their artefacts and their emotions. This type of analysis is referred to by Spradley as the dominion analysis, and it is, essentially, "a search for the larger units of cultural knowledge" (p. 94). In the results section of my thesis (*Ik' ta K'op*, word in the wind) I present these observations.

Following this, I carried out a focused observation, which builds from the dominion analysis in order to understand the various cultural components and their relationship amongst each other. There are five criteria that could be used to define the domain(s) of focus; these are: 1. personal interest, 2. suggestion by participants, 3. theoretical interest, 4. strategic reasons, or 5. the organization of domains. In my case, it was a personal and a theoretical interest that led me to define the focal points of my research. As I have discussed till now, I

was interested in identifying elements of, or similar to, the Hacker Ethic, and how these were affecting the use of ICTs in the case of Ik' ta K'op.

Based on this focused observation, combined with the in-depth interviews that I had carried out up until that point, I was able to concentrate on exploring which elements of the Hacker Ethic were determining the way in which the members of Ik' ta K'op interacted with technology. This last step of the process of observation corresponds with Spradley's selective observation phase. As a result of –this too– iterative process of selective observation, I was able to clearly delineate the categories that are used to offer a clearer picture of the role that the Hacker Ethic has in the use of ICTs in alternative economic cultures.

Results

The results of my thesis are organised in such a way that reflects Spradley's participant observation proposal. In other words, I start with a general, descriptive observation of Abasolo and Ik' ta K'op. This subsection is titled *Ik' ta K'op, word in the wind*, in honour and reference to the organisation that leads this initiative. The second subsection of the results discusses the focused observation that was carried out; here, I discuss the correlation between the hacker ethic –as per discussed in the theoretical framework of this thesis– and the Tzeltal culture, and more specifically, the culture of Ik' ta K'op. In the last subsection, I present the selective observation; that is, the way in which the hacker ethic is serving as a technical and philosophical foundation for the effective use of ICT's. It is important to note that, although the outline of the results section reflects Spradley's participant observation proposal, the information therein presented comes from both, the participant observation and the interviews. This is particularly true for the first and third subsections, as the use of direct interview citations will demonstrate.

***Ik' ta K'op*, word in the wind**

Descriptive observation

The community of San Martín de Abasolo, in Ocosingo, bears little or no relevance to all but the few thousands of people that live there and in their immediate surroundings. There might have been a fleeting sense of national consequence last year when one of their own, Mariano, was recognized by the Internet Society as one of the "25 under 25 who are taking action and using the Internet as a force for good". Perhaps even a little more so, when shortly after, the United States denied him the visa application that would have allowed him to travel to Los Angeles where he would have received his prize, causing widespread outrage that was echoed by national and international media outlets. In an open letter published online, Mariano pondered over his experience:

> "It's a reflection of a society with stereotypes that being of an indigenous people you are considered inferior, in which not having a bank account and large economic resources is synonymous with worthlessness."

Mariano is a teacher from a remote community located in the central highlands of Chiapas, in the south of Mexico, near the gates of the Lacandon jungle. Modest cement and adobe houses dot the lush, mountainous landscape that covers the area. Atop one of the surrounding hills lies the church of San Martin, towering eccentrically over the village. From there, the town square may be observed. It covers a small area, with only the basic elements of infrastructure and design: a concrete basketball court covers one of its sides, while the remaining space is left for a small kiosk and a series of walkways that run along patches of grass. The town square serves many purposes, but its main day-to-day function, from what I was able to see, is to gather friends for some after-school leisure time.

Immediately facing the square lies the *Agencia*, or the ministration, which is the seat of local authorities. This two-story building also houses the *ejidatario* authorities, as well as two prison cells, and a radio room, from which they may communicate with the police in Ocosingo, less than 30 kilometres away. The authorities governing Abasolo are chosen on a yearly basis, during a general assembly where everyone –men, women and children– are eligible to vote. Usually, older and highly respected men are elected to serve. In the times I visited the community, my first duty was to present myself and to explain my intentions to the authorities. I was taken aback by the solemn attitude they exude and the enormous respect they command.

The fact is that Abasolo is an indigenous community that is governed by their own traditions and customs. It is not just their system of governance that varies, however; as a Maya-Tzeltal community, their culture and their practices are pervasive in most aspects of their personal and social lives. Spanish may be heard, here and there, for example, but it is the Mayan dialect that prevails through its streets. It is also notorious to see that many women

still go about their days wearing their traditional *huipils*, or that community needs are not met by public expenditure, but rather voluntary community work. Their religious beliefs and expressions are a syncretism between Catholicism and their ancestral heritage, although different forms of Protestantism have also begun to take hold.

Abasolo is not a particularly distant and inaccessible community, but it does definitely exist and operate outside the margins of traditional spheres of political and economic interest and influence. Its primary form of connection between its residents and the rest of the world is still the Panamerican Highway, which lies a few dozen meters away from the church of San Martín. Like other marginalized communities in the country, basic services are insufficiently provided, if at all. They do have electricity, but their maintenance is not institutionally guaranteed, so if ever there is a problem, it is up to the community to fix it. There is water too, but it is also provided and kept by its residents. Through a political program, the government even installed internet connection in Abasolo's schools, but, like many things, it's on the verge of usability. There are a few companies that may provide satellite internet connection, but at lofty prices that are always beyond the residents' economic reach.

Images 1 and 2: Geolocation of Abasolo

Source: Google Maps

Last year, recognizing the importance of improving information and communication infrastructure and processes, the community chose a number of representatives to head towards Merida, Yucatán, in order to negotiate with a major telecommunication company the

possibility of setting up phone and internet coverage in Abasolo. This was their second attempt, and just like the first, their petition was denied. By the commercial standards that guide the corporate giant, Abasolo is not worthy of the required investment, so they said:

> "Abasolo is like many other communities throughout the country who have requested telecommunication companies to offer them access to communication. Unfortunately, since to them we are just marginalized communities in extreme poverty, their investment, which would be of millions of pesos, would not be recuperated." (Mariano, 2019)

This, in and of itself, is profoundly revealing. What does it say about the values and the objectives that guide our society, for example? What are its implications? In this case, it may also be worth wondering what would have happened if the telecommunications company had actually accepted to offer their services. Although it is never this simple, we could ask what good could have come of it? What bad? Other questions may ensue, but what interested me – what guides this thesis– is how a group of young people from this community decided to take control of the matter, offering alternative solutions to the community and, perhaps inadvertently, partaking in the construction of an interconnected world that reflects and fosters our cultural diversity.

Based on the interviews that I carried out, the story of Ik' ta K'op began with a young, restless student by the name of Mariano who became interested in information systems while still in school. According to his IT teacher, Luis Ramón, Mariano was enthralled by everything related to computers, and he was particularly interested in Linux, its different operating systems and their collaboration-based development models. When he graduated from high school, he asked his father, Don Mariano, to help him pay for a program to earn a certificate in computer systems. After that, Mariano decided to undertake a commercial venture: to establish a satellite internet connection and create Abasolo's first *cybercafé*. With

a 30,000 pesos loan taken up by his father, and with the knowledge Mariano had acquired, they bought the necessary equipment and had it set up and ready for business.

However, what began as a commercial venture for Mariano and his family, it very quickly turned into a community networks project. Besides realizing that high maintenance costs and poor internet connection was a deadly combination for business, they also began to recognize the opportunities that access to the internet could provide, not just for them, but for the entire community. For someone with a Tzeltal cultural background as Mariano, it didn't take too long to take the step from a purely commercial initiative to a community project. As he mentioned in an interview, "We bring a little bit of us to everything we do." Working with and for the community was not just culturally consistent, nor was it merely altruistic, it was a necessary measure to harness collective power and overcome the limitations that they faced.

By this time, Mariano began inviting friends to participate in the project. He also paired up with his now former IT teacher, Luis Ramón, to work on an educational platform that would operate within their own Intranet, the IntraBACH Yaj Noptik. Additionally, they began working on the first community radio of Abasolo, Radio Jitontik. These three projects combined became the building blocks with which they hoped to promote a harmonious relationship between the people of Abasolo, their worldview and new media technologies. Their next step was to try to explain to the rest of the community what it was that they were trying to do. For an indigenous community that had stayed at the margins of the digital revolution, the idea of information being shared through satellite connection, optical fibre cables and radio waves was foreign. As a way to illustrate their intentions, they came up with the notion of *word in the wind*, or Ik' ta K'op.

The Hacker Ethic, Abasolo and Ik' ta K'op

They have gone very far since their first steps. Their radio has begun transmitting, and it has been a success: people are enthusiastic about the idea of having their own radio, about

being able to participate in the creation of its contents, and in keeping it alive. The intranet program, or Intrabach, has been up and running for longer, and it is a vital didactic tool that is implemented by Luis Ramón, a teacher in the local secondary school. The wireless internet networks program, which is led by Mariano, is also firmly established; after setting up their own antennas and several signal repeaters, they have managed to provide wireless internet connection to several parts of their community and beyond. Now, it is being used not just for personal communication, but also for local commerce.

It is not all perfect, of course; not nearly. Mariano insisted on this: "*...no todo es color de rosa*" ("not all is rosy"). Amongst other things, he cited the lack of women in Ik' ta K'op; of the eight members there is only one, Genoveva. Regardless of this, their initiative has resulted in tangible solutions to some of their community needs, and it is not just the fact that they provide means that facilitate communication and access to information, it is about how they are going about it. In their words, Ik' ta K'op is all about "appropriating these [new media] technologies according to our indigenous worldview. [It is about] exercising our self-determination in the creation of our own media that reflects the views and wishes of our community" (n.d.).

This approach to the use of technologies is not necessarily self-evident, although there are some cultural factors that would seemingly incline indigenous peoples in this direction. Professor Luis Ramón, for example, reminded me of the historic injustices that indigenous communities have faced, and how this has made them particularly sensitive to any imposition from the outside, and therefore particularly receptive to any message that suggests the idea of 'appropriating technologies in order to exercise their self-determination'. However, this supposed indigenous predisposition may be questioned by briefly considering most other cases of the use of technology in indigenous communities. During the focus group carried out in Taniperla, for example, it was clear that the debate was not about how or if technologies

should be appropriated; it was about access to ICT's and whether they should use them or not; the main issue usually revolved around the impact of the internet:

> "Regardless of the possible benefits of the internet, the fact is that it has had a significant impact on the way that children and adolescents behave. It has affected the way they behave in school, but it has also affected how they behave in their houses, and in the streets." (Alonso Hernández, Fanny; 2018)

In the case of Ik' ta' K'op, there seems to be other factors that have come into play. Nicolás, member of Alter Mundi, friend and supporter of Ik' ta K'op, suggested that a hacker is a person that is not content with the way that things are, and so finds a way, as the saying goes, "...to scratch his or her own itch." As mentioned before, Abasolo was not of interest to the telecommunications company, so they had to find alternative ways to connect to the internet. According to Professor Luis Ramón, he and Mariano began questioning themselves: "Why depend on others?" "Who governs the internet? Them or us?" In his words, they decided that it would be them, and so it is that they began creating the 'network', with "...sticks and rods":

> "We put two antennas in two different mountains, and that is where the internet comes from. The first day that we had a signal, it was a great feat for us. We had a big celebration – being able to open up a webpage from our community, and in that way [by our own efforts]..." (2019).

In this sense and others, Nicolás suggested, Mariano is a hacker. Professor Luis Ramón also pointed towards Mariano's leadership, highlighting in particular his early exposure to Linux, its ethical standpoint and its development model. To this, I would add his apparent keenness to keep on reading and learning. As Mariano himself mentioned, once he is interested in a topic, he will keep on researching until he becomes an expert of sorts. This is how he was able to lead the development of a series of projects that required profound technical knowledge, especially in the early stages of Ik' ta K'op, when they had no external

support. This curiosity and this willingness to find creative solutions also echoes some of the characteristics of a hacker, as suggested by the theorists and activists previously discussed.

To Mariano too it eventually became clear that his passion for technology would need to be combined with a particular philosophy that would allow him to practice his personal and cultural values. At some point, he was able to formulate clear objectives that resonated with his friends and community. This particular phrase mentioned by Mariano is worth quoting here for a second time in this thesis: "We did not want to be absorbed by the internet; we wanted to absorb it into our culture and practices." Mariano could not pinpoint to the exact moment when he began adopting a hacker ethic, but the concept itself did ultimately become an explicitly established idea in his day-to-day activities and discourse:

> "Technically and philosophically, the free/libre software is worked in communities. It is not all for you as an individual, it is about a group of people creating something, sharing something. We, as a community, we do everything together. We all work towards one objective."

Perhaps following Mariano's lead, other members of Ik' ta K'op also adopted a Hacker Ethic, both in their discourse and in their practices. In my interview with Héctor, he echoed the idea of being careful of technologies taking over their way of life, and their efforts to invert that relationship by having their community appropriate technologies: "We try to adapt technologies so that they correspond with our way of life – our culture." And there is an essential component of creativity to their endeavours. Due to their lack of funds, they have had to go long way rounds, at times, finding solutions that, with money, would have probably been solved more expediently. Despite these limitations –or perhaps because of them– they have created great things; Héctor highlighted the example of the Intranet:

> "We are rescuing as many photographs of our town as possible. We are using the Intranet as a platform through which we organise and display this photographic heritage. How has Abasolo changed over the

> years? What advancements has it had? We are documenting all this information for future generations, our children for example; they will be able to access this information, and know about their past."

Some of the Hacker Ethic elements are visible beyond their relationship with technology. In some cases, it may be coincidental, but in others, it seems that there is a direct correlation. Most clearly, Mariano suggested that their essence lies not in what they do or the services they offer, but in their way of life:

> "It's about how you live, how you interact, how you behave… what you eat, even! You just can't be, for example, celebrating the inauguration of your community radio, while sitting around a table filled with Coca-Cola bottles. It is ironic. Illogical. You can't talk about free ("*libre*") media and technology while using a Macbook Pro or other privative softwares." [I had a Macbook Pro in front of me at the time.]

Another example of this came during my first day with them, when I asked about the values behind the appropriation of technology; Luis, Mariano's older brother, offered a clear response that left me astonished. In other words, he suggested that if we searched online for 'best construction practices' for a place and territory such as Abasolo, we would be unlikely to find much information on adobe houses. They were considered to be, in his words, "poor" or "inferior" to cement houses, often even by people from his own community.

> "We have to find our own means of survival. In this adobe house, for example, the only thing that is industrially-made are the metal wires. This house was constructed thanks to the support of many people. It took a while to build – so my father says. This house now has between 35 and 40 years of age. We had very little tools then, but we had this red soil, that is hard. That is what the house was built with."

In the case of the adobe house where we then sat, there were two main elements that allowed for the construction of the house: the 'red' soil, and their communal traditions of work, as then suggested by Mariano: "Such is the knowledge held in these communities that with just a few people and some water, they may construct a house." The answer to my initial question about the values behind the idea of the appropriation of technology was thus implied:

they need to appropriate these technologies because *they* have the knowledge and experience necessary to live in their communities. There are specific social, political, cultural, economic, geographic, and other types of factors that make their experiences invaluable, to them first of all, but also to others that may in many ways share their situation, like, for example, surrounding communities.

As discussed previously, the idea of appropriating technology is intrinsic to the Hacker Ethic, so there was an ethical correlation between that and the Tzeltal culture. There were, however, other ways in which the Hacker Ethic and the Tzeltal culture coincided: their processes. Besides being a political and social guideline, relying on the community seems to be an essential aspect of the economic system in Abasolo. Their livelihoods are necessarily intertwined as a way to counteract their limited financial reach. For all the energy that the members of Ik' ta K'op have, they couldn't have gone far had it not been for the collective input of time and money. This was particularly evident with their radio; in consonance with their tradition of communal work, or *comuntaitik*, responsibilities are shared amongst all, and not just with the members of Ik' ta K'op, but with the entire community. During a tour of their working space, two members of Ik' ta K'op, Héctor and Genoveva explained that their provisional radio room was lent by a neighbour who had a spare room in his house, and that everything in it was donated or worked for by members of the community.

This is tied to the idea that they don't own the radio, the intranet or the internet they provide. To them it is clear: ownership is communal. Their projects exist and will continue to do so, so long as the community works alongside them. This 'work' could take many forms: at times, it could simply mean giving somebody company whilst they transmit through the radio; other times, it may imply sharing the economic burden, and still others, as it has, it may mean assembling the table where the computer lies:

> "We built everything with the community. And that is the great thing, that is why talk about the appropriation of technology. We don't use engineers, or anyone paid for that matter. We train amongst ourselves, we self-study, and that is how we began to create our own routers. So we said to ourselves: if they [the telecommunications company] can't give us what we need, that is ok, because we discovered that we can do it ourselves. How? Thanks to the community. How is the network upheld? Thanks to the community. How is the radio upheld? Thanks to the community. What if our transmitter burns? Well, then everyone cooperates five pesos [to get a new one]." (Mariano, 2018).

This immediately resonated with Mariano, but also with the community in general. While in Taniperla the authorities were wary of the impact that the internet was already having, in Abasolo, the authorities had embraced Ik' ta K'op, and were bolstering it in whatever way they could, so much so that, during my second visit, the members of Ik' ta K'op inaugurated, thanks to the support of the authorities, what would be their official workspace, right in front of the main square, in a small house, adjacent to the *Agencia*. During my meeting with the authorities, they recognized the work of these young men and women, while emphasizing on the importance of respecting community traditions and processes.

> "You can't just go to a community, and try to impose something. According to their customs and traditions, they have assemblies. It is something communal. And so when we began to work with free/libre software, we began to work with this idea. It is not just about making our own [Internet], it is also about participating and creating. We have been sold this idea that we are inferior, less than the *ladinos* [mestizos]. Besides being untrue, it has also resulted in low self-esteem within the communities." (Luis Ramón; 2018).

In the following section, I discuss the specific elements of the Hacker Ethic that are present in the culture and activities of Ik' ta K'op, as well as the ways in which these elements –according to the members of Ik' ta K'op– may or may not offer a technical and philosophical bedrock for the effective use of ICT's.

The Hacker Ethic and the effective use of ICT's

Using the constant comparison method and Spradley's participant observation proposal, seven categories have been identified as the main parameters through which the impact that the Hacker Ethic has had on the case selected for this research may be analysed. In other words, these categories serve as the basis for the analysis of the philosophical and technical impact that the Hacker Ethic has had on the use of ICT's by members of the Ik' ta K'op collective. The categories are: 1. Accessibility, 2. Self-determination and governance, 3. Openness, 4. Cooperation, and 5. Creativity and problem-solving. It is important to note that, because this is an interpretivist investigation, and because of the nature of the methodology, these categories are made up of clusters of expressed ideas and observations, and so are not strictly delineated, and at times even overlap.

1. Accessibility

The information and communication imperative of our time was not being met by the people of Abasolo. Access to the internet was restricted, as mentioned before, by the telecommunications company's decision to not invest in the community. What is discussed in this category, therefore, are the mechanisms through which accessibility to the internet (and other ICT's such as the radio and the Intranet) was guaranteed. And in this case, more than just the actual mechanisms, it is important to consider the ideas that led them to take up the issue of accessibility into their own hands – the mentality, as it were, that allowed them to become service providers.

I mentioned it briefly in the previous section, but it is worth remembering Luis Ramon's interview, when, according to his retelling of the story, they began questioning themselves, "Why depend on others?" "Who governs the internet? Them or us?" Thanks in part to Mariano's previous 'hacker' experience with Linux and its development model, they decided to 'scratch their own itch'. They needed to find ways of accessing information, and more

importantly, they needed to find ways to communicate with people outside of their community. According to Professor Luis Ramón, there was a lot of emigration, and before Ik' ta K'op, the only way for people to come in contact with their distant loved ones was through a communal phone that charged a lofty 10 pesos per hour.

After researching, they decided that they would become a "[second-hand] last-mile telecommunications provider" for their community. The city of Oxchuc –thirty minutes away from Abasolo by car– did have phone and internet service provided by the telecommunications company, so they hired a 20-Mbps plan from them that would serve the house of a local relative. They then built two antennas and placed them at separate intervals between Oxchuc and Abasolo, so that, finally, they could bounce the signal towards different points of their town in order to create various points of access.

Besides this 'hacker' –as per the conceptual proposal– mentality that encouraged them to 'scratch their own itch', there are other, more tangible ways in which the Hacker Ethic ensured accessibility; namely, in facilitating essential free/libre software at an *accessible* cost. For starters, the Intranet uses an Ubuntu server which, for all the criticism that may be directed towards it, is, in the worst of scenarios, but a free and open source software operating system based on Debian. The videos and pictures that they edit to upload to their Intranet are also created via free and open-source software; they use *Blender* for editing their videos, and *Gimp* for photography. And again, it is important to note that this is not a decision based on costs alone – more important to them is their commitment to a free/libre culture.

The software they use for Radio Jitontik is another great example of how the Hacker Ethic has determined the use of ICT's by members of Ik' ta K'op. They use *EterTICs* which is also a free and free/libre operating system designed specifically for the use of community radios. In *EterTICs*'s official website, they begin describing their story like this:

> "Good news. Community radios have at their disposal a new tool to achieve technological independence. A group of colleagues from different cities of the Fatherland ['*Patria Grande*'] managed to create a distribution that contains players and automaters, all with Free/Libre Software. What is laudable from all of this is mainly the fact that this has been a community effort. Each partner has contributed with their wisdom, always in line with philosophy of free knowledge." (n.d. *Own translation*)

2. Self-determination and governance

The Hacker Ethic is in many ways an expression of liberalism (Coleman, 2013; Raymond, 2008), and so may seem to be at odds with community values such as self-determination. Based on the interviews and observation that were carried out, however, it is clear that, *at least*, relative to a capitalist ethos and capitalist products and services, the Hacker Ethic has indeed provided a philosophical and technical foundation for an effective use of ICT's. In terms of discourse, it is evident that members of Ik' ta K'op are wary of the impact of privative software and mainstream technology companies such as Facebook and Google. While in Taniperla the major concern regarding social media was the effect it was having on the behaviour of the young men and women, in Abasolo, I was met with a discussion on the value of data in our time: "Blood was the most valued resource for many pre-colonial indigenous cultures. Eventually, oil became the most sought-after commodity. Now it is data" (Mariano, 2018).

"What happens when you upload a picture on Facebook?"– Mariano asked – "You lose rights over that picture. It is no longer yours. That is why we are careful with social media." He recognized the practical impossibility of doing without one or more of these companies on a day-to-day basis. They do have an Ik' ta K'op Facebook account, and some of the members of Ik' ta K'op use outlook as a platform for sending and receiving email, but there is an explicit effort to avoid such technologies, and one of the reasons behind their decision is precisely because they believe that they are losing the capacity to be who they are, and organise themselves according to their traditions and practices. Here again, for the third time

in this thesis, I refer back to Mariano's revealing statement: "We did not want to be absorbed by the internet; we wanted to absorb it into our culture and practices."

In practice, they have endeavoured to reconcile technology with their own culture and practice, to ensure self-determination, by 1. controlling the infrastructure and hardware they use, 2. by partaking in the 'logic' –or what I have called the 'value-system'– of the software they use, and 3. by being creators of content, and by keeping control of that content. With respect to the first point, it is important to note that every piece of infrastructure and hardware that is used by Ik' ta K'op to provide internet service to Abasolo belongs to them, everything within that "last-mile", that is. Owning the infrastructure is important because, in this manner, it is only they –the community– that decide how or when the service is operable. The same principle applies for the Intranet and for the radio: everything belongs to them.

Regarding the logic of the software: none of the members of Ik' ta K'op are actually coders. By partaking in the software's logic, it was stated that, if they were to want to access the back-end of a program, they should be able to do so, and if they wanted to copy it and change it, they should be able to do so too: "How do we ensure that our community take command of technology? We need a particular form of governance. Which one? Create your own infrastructure. Write your own code. Make your own content. [...] We are migrating exclusively to free/libre software. We don't use Windows or Mac. We are also limiting our use of Facebook. Sometimes [Facebook] is necessary; we don't want to shell ourselves is, but we can limit our use of this platform."

Lastly, the issue regarding contents is primarily focused on the Intranet and the radio programs. In both of these services, they make an effort to ensure that the contents therein contained are created by them and for them. The case of Radio Jitontik is particularly obvious. At the time of my second visit, Genoveva was the coordinator of that service, and in the

interview, she shared her views on the differences between a community radio, and a commercial radio:

> "In a community radio we are free. We have a slogan [...]. It means that we have to be who we are, and speak as we speak. As opposed to a commercial radio, you won't have limitations. You won't get someone telling you to not say something, or not do something, or not to speak in a certain way."

The importance of creating their own content lies not only in the fact that, in this way, they keep technologies under control, it is important too because this is how they get more people involved. It was implied that self-determination in a community cannot be guaranteed if most of the people cannot participate in the use of these technologies. On this note, professor Luis Ramón mentioned that 90% of the population speaks Tzeltal as their main language, and speak only basic Spanish. In this scenario, an Intranet that was only in Spanish, with 'western' content, would not appeal to the inhabitants of Abasolo. For this reason, they began uploading content in Tzeltal. They also began using pictures and symbols that they could relate to.

> "We began experimenting with the students. We realized that free/software libre allowed us to work as a community. The students began to be more creative. They were participating more. They began taking control of the platform [Intranet]. Using free software allowed us to open a door for the students to begin using technology. They haven't necessarily crossed that door, but at least it is there now, and some students have begun to peep through."

3. Openness

In Abasolo, the line that separates private issues from community issues is drawn relatively closer to the latter rather than the former side. As mentioned before, in light of political, financial, social and geographic limitations, many of their economic needs are only met by the support of the community. As such, it follows that the traditions and customs of Abasolo privilege those paths that ensure transparency. It is for this reason, for example, that

political assemblies are held in the main square; they are public, and everyone is welcome to listen, and more importantly, participate: even children participate in the election of local authorities. Mariano himself discussed how analogous these community processes are to many dynamics within the digital realm:

> "A community assembly is very much like a forum on the internet. Everyone can participate, everyone shares their input, their knowledge and experience. In an assembly, people also get together to discuss ideas, to see what is acceptable and what is not."

On this aspect, the Hacker Ethic has defined their use of ICT's insofar as it allows for the open cultural dynamics of the Tzeltal to be replicated in their own relationship with technology. The communal practices of openness, though, go way beyond the "openness" that one may perceive in a digital forum, as perhaps suggested in Mariano's previous quote. As with the Hacker Ethic, the idea of "openness" is essential and transversal. In my meeting with the local authorities, for example, many people that had no formal part in the matter came into the room, and even joined in the conversation. The idea of the Hacker Ethic fostering effective use of ICT's by replicating this openness derives, then, not from any particular software or process, but from its core identity: "openness" is one of the essential elements of this Hacker Ethic, and it is best reflected in its compliance of the four 'essential freedoms' of genuinely free software, according to the GNU project.

> "Free/Libre software is a philosophy. It is a way of life, and it is centered in the idea of freedom. [It talks about] freedom to see the source code, freedom to copy it and change it, and freedom to distribute it. It is about sharing knowledge and information. It is a culture of openness. We too want to share knowledge. Unfortunately, many companies have tried to hoard information. When access to this wealth of information is denied to us, then we are unable to exercise many of our rights. When we do have access to this, we begin to do a lot of things."

4. Cooperation

Considering the stress on economic interactions of this thesis, this category is particularly important; not only is it one of the categories that was most discussed throughout the interviews, it is also one of the defining elements of what Ik' ta K'op is today. According to Mariano, as the collective began to take form, they also began to identify their own philosophy; they began to operate based on specific foundations of ethical and cultural dimensions. On this note, he said:

> "We adopted the philosophy of *mankomún*. It is an ancient idea, from here, from our community. Here, when we talk about *mankomún*, we talk about going out to buy meet, but amongst a group of people, not just one person. This is usually done on the Day of the Dead. *Man* means buy, and *común* means amongst all. Instead of one person paying, say, 10,000 MXN for the whole cow, that person joins nine other people, so that they end up paying 1,000 MXN each."

He then explained that there are two main reasons for this economic cooperation: the first is obviously because it reduces costs. One person would probably not be able to buy the whole cow by his or herself, so it is necessary to do this purchase amongst various people. The second reason is that, in this way, people are able to share it and enjoy it together. According to his retelling, people didn't just buy the meet together and then head home to continue to their separate lives; they usually bought it together, cooked it together, and ate it together. This same principle applies to the community networks they operate. For one, their project is viable only if many people help with the economic burden it sometimes implies. For another, collective ownership also means collective participation. When people feel that they are part of something, Mariano explained, they are more inclined to participate.

The fact that cooperation is the fundamental reason for adopting *mankomún* comes to light when understanding their guidelines regarding those who do not, or cannot pay. In those cases, people have the opportunity to help with voluntary work, in whatever way they can,

and with whatever may be necessary. As mentioned before, while reducing costs is important, –and it is one of the reasons why cooperation is not only preferred but required– this, in and of itself, does not constitute the idea of *mankomún*. What defines it as *mankomún* is the fact that their cooperation is not circumstantial; they didn't just happen to need the same product, that is; they share values and traditions that require community participation in order to be carried out.

In this sense, *mankomún* is different from the Hacker Ethic, as gathered by Wark's previously cited characterization: "Hackers are not joiners. We're not often willing to submerge our singularity. What the times call for is a collective hack that realizes a class interest based on an alignment of differences rather than a coercive unity." What is important to note, however, is the extent to which the Hacker Ethic has allowed for a creation of a technological structure that is, at the same time, stable enough so as to allow for alternative cultures to actually get involved in the design, use and development of technologies, and flexible enough so as to allow for a plurality of ideas and interests to coincide.

On this matter, Mariano said that it is important not to romanticise the idea of cooperation in indigenous communities. The Hacker Ethic has indeed opened up the possibility of cooperation in this process of appropriation of technologies, but in no way does it guarantee it. So long as technology checks off basic components of openness and cost, the main obstacles they face are entirely social, "organisational", not technological.

5. Creativity and problem-solving

When I asked Don Mariano, Mariano's father, where much of the drive and creativity necessary for the project came from, he pointed to Mariano. Nicolás and professor Luis Ramón offered the same suggestion. While the support of the community had been necessary, not only instrumentally but also in terms of cultural consistency, Mariano was the visionary and architect that made it all possible. It seems that Mariano always had "radical" ideas for his

community, as his former professor, Luis Ramón, explained – but what really explains the origin of Ik' ta k'op is Mariano's interest in technology, and more particularly, his first encounters with Linux: "When he was in school, he fell in love with Linux, and became deeply involved with the issue." (Luis Ramón, 2018).

Providing internet service was the next chronological step in Ik' ta K'op's timeline, but because of Mariano's outlook, influenced by his experience with Linux, and because of his Tzeltal worldview, the business opportunity became a community networks project. As mentioned before, at some point, both Mariano and professor Luis Ramón began to conclude that they needed to 'scratch their own itch'; they realized that the internet didn't belong to anyone in particular, and that they could be the ones to control it: "...and so we said to ourselves: if they can't provide it for us [the internet], then that is okay. We discovered that we can do it ourselves." (Mariano, 2019).

This notion of "scratch your own itch" has been explicitly present in their discourse and activities. They know that they are not technical experts, but they insist on their capacity to teach themselves the necessary abilities to carry out their ideas, not to mention the fact that they are more inclined to learn while practising, instead of passing through theoretical processes that are, at times, beyond the scope of their immediate needs and possibilities. This abstract sense of problem-solving and creative autonomy is a philosophical precept of the Hacker Ethic, and it seems to be at least one of the reasons as to why Ik' ta K'op has followed this particular path. But besides this philosophical correlation, the fact is that the tools of the Hacker Ethic, namely the different software and hardware, require creativity and problem-solving skills to be used because they are not –and cannot be– custom made to fit the particular needs of each user. They are open and free so that the end-users may adapt them.

Conclusion and discussion

This discussion of my research may be best served by first presenting the methodological limitations I had while carrying out this academic endeavour, therefore: considering the theoretically ideal scope of this thesis, there should have been a larger and more varied number of interviewees. Amongst others, I would have liked to interview students who use and collaborate with the Intranet platform, listeners of Radio Jitontik, and more internet users. I would have also liked to interview more elders too, for they represent a moral authority in Abasolo. As for my interviews with the community leaders, I am not sure if they could actually be considered interviews per se; more than anything, I would say that they were a mere formality, whereby I introduced myself and they then either approved my presence or not. They did also share their opinions on the matter, but it had been made clear to me that I was not to ask questions nor ensue a dialogue; I would speak when asked to, and only about what I was asked. Apart from that, I was to be silent and listen.

With regard to the participant observation procedure in Abasolo, there is one important limitation that should be noted. My condition as a researcher and as an outsider, or *jyanlum* [sic], affected the way in which I interacted with the members of Ik' ta K'op and other members of the community. I hinted at this when referring to my interaction with the community leaders, but it was present in other scenarios too. Most importantly, I felt that my first encounters were marked by a degree of mistrust. For starters, I realized something that now seems obvious: people who say they have good intentions –even those who actually believe that they have good intentions– can very well be motivated to act upon what serves them best. In my case, I had to wonder: who is really going to benefit from my research? I am genuinely hoping that I may serve them in some way, whether directly or indirectly, but as far as I can tell, it is I who stands to benefit the most.

Adding to this mistrust is the historic condescension and ignorance with which indigenous communities have been 'studied'. The idea of 'studying' indigenous people, their culture and practices is inherently contemptuous. Mariano in particular was very cautious of, both, self-serving research and patronizing inclinations. He was therefore wary of my presence, and forthright about it too. I told him that I was not there to 'study' them; I was there to understand and learn. I told him that there was little that I could do for them other than write about them and make a video that they could use. I let him know that I would write about them in my thesis, and that I would perhaps write a couple of blog posts too. I told him that I intended for this to be a collaborative effort, and that we would have shared rights to anything that was published. I believe that this soothed his preoccupations. I also believe that we were able to establish a friendly relationship after that.

I was denied access to the internet for the first 24 hours. They set that rule when previous visitors had preferred to constantly scroll through their phones instead of actually interacting with the people that they had travelled to meet. That should have been enough of a hint for me to realize that a human connection was necessary before moving forward with the collaboration. In my inexperience, however, I tried to force the conversation towards the topics of my interest, while Mariano, perhaps a little exasperated, would politely ask me to calm down. "*Todo con tranquilidad*", he would repeat. Eventually I did get the hang of things. The members of Ik' ta K'op seemed to be okay with my presence, and I had finally relaxed, and just let the conversation follow its natural course.

Still, the tone had been set: the scope of my research would reflect their terms. I was granted full liberty when it came to interacting with the members of Ik' ta K'op, but beyond that was a different story. They would listen to what I thought was necessary, and they would help if they could, but they would not force a thing. By the end, however, I was able to observe in detail the technical and social processes of organisation and operation, enough to

get an adequate sense of what they were doing, how they were doing it, and how the community was interacting with their initiative and how they were interpreting its implications.

Methodological limitations aside, one of the more disputable elements of this thesis is perhaps the use of the Hacker Ethic as the concept that describes a fairly outlined philosophical and technical realm. As mentioned in the section *The Hacker Ethic*, hackers do not unanimously agree on a set of values and principles. Even the definition of 'hackers' is disputed, let alone their ethical standpoint. The reason for condoning its use lies in the yet ambiguous conceptualization of a still vast technological ecosystem that disputes mainstream capitalist values and practices in the design, use and distribution of technology. Free/libre software has been mentioned more than a few times throughout this thesis and it could have been an alternative concept to the Hacker Ethic, but it fails to depict the profound ethical foundations behind the actual software. Plus: it excludes other tools, specially hardware, that may also share the same philosophical origin and teleological nature.

The concept of 'open culture' may also, to some, be more fitting than the Hacker Ethic. Still, the Hacker Ethic was chosen over 'open culture' because of the symbolic value that it seems to have within the "computer world", as Levy suggests. In other words, being a hacker means something to the people that are part of this community, even if this 'something' is not altogether clear and defined. This abstract sense of belonging is what first motivated me do a thesis on the Hacker Ethic. I would not consider myself a hacker, but I admired those who were, and I vaguely recognized its value vis-à-vis the alternative economic movement. I would even argue, although this goes beyond the scope of this thesis, that the Hacker Ethic is an alternative economic culture in and of itself, in the same way that Buen Vivir or *Lekil Kuxlejal* could be. Whether or not this is true, the fact of the matter is that the Hacker Ethic and alternative economic cultures coincide in their confrontation with capitalism.

There are many theoretical and practical precedents of this seemingly foreseeable relationship between the Hacker Ethic and alternative economic cultures. In the first sections of this thesis I discuss, for example, the cases of Platform Cooperativism, peer-to-peer, and the digital commons. Another great example is the *Personal Declaration of Richard Stallman and Euclides Mance*, which suggests combining the Social and Solidarity Economy with the free/libre software movement in order to face the dangers of the information era (Annex 1). The next part of this investigative process, then, was to try to understand the nature of this convergence, and how this in turn could be analysed in order to determine if and how an economic transformation may be fostered.

Now, the Hacker Ethic does not only describe a hypothetical ethical standpoint for hackers, it also describes the *agency* of technology, as described in the second section of this thesis. In other words, the Hacker Ethic could be used to describe the value-system that guides these 'alternative' technologies, as is the case of perhaps all free/libre software. This value-system may precede the actual use of the technology by users, especially in cases such as the one presented in this thesis, where the members of Ik' ta K'op did not design or construct the technology, but merely adopted it. In other words, there is a cultural dialogue, a "contact zone", between one culture (the Hacker Ethic) and another (Tzeltal – Lekil Kuxlejal). It is based upon this idea of a "contact zone" that I, paraphrasing Alberto Acosta (2017), wondered: Could this be key that frees technology from the shackles of capital accumulation? Could this allow for an effective use of ICT's? Could this cross-cultural relationship derive in a technological ecosystem that recognizes, reflects and fosters our cultural diversity?

Although the results of my investigation are not meant to answer these broad questions, they are meant to offer some insight for further investigation regarding the Hacker Ethic. As for the scope of my investigation, it could still be said that the results are encouraging. In the worst of scenarios, the Hacker Ethic is a step forward from the capitalist values that frame

most of the design, use and distribution of technology in today's world. The use of technology in the case of Ik' ta K'op shows that in principle and in practice the Hacker Ethic has allowed them to achieve a more effective use of ICTs. It has not been easy, of course; the Hacker Ethic as a basis for the effective use of ICTs does not mean that the path is simple. However, it seems fair to suggest that, as Mariano would perhaps put it, the Hacker Ethic has allowed them to conceive the possibility of a world where their worldview shapes the use of ICTs – and not just conceive, it has allowed them to absorb the internet into their culture and practices.

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Annexes

Annex 1: Personal Declaration of Richard Stallman and Euclides Mance

After a useful two-day conversation on Solidarity Economy and Free Software, we have agreed on this joint statement of our personal views.

We believe that the free software and solidarity economy movements should collaborate to make software solutions that are entirely free/libre, aiming to meet the needs of the solidarity economy.

This includes the organization of solidarity economy networks. These networks enable the democratic management of local and global funds and resources.

The free software and solidarity economy movements should also collaborate to encourage self-managed enterprises that produce free software according to the ideas of solidarity economy. These will strengthen democracy in the economic and technical spheres, and will help the development of local communities integrated in collaborative networking.

We also envisage projects such as the production of computers to be used entirely with free software, including tablets and microservers (such as Freedom Box), by collaborative networks of community enterprises in the solidarity economy.

The cooperation between the free software movements and the solidarity economy suggests looking more deeply into the defense of public and private freedoms, in particular in the issue of ethics and liberation with respect to the use of IT. The self-management of IT activities requires that the software used be free. The ethical philosophy of free software -- the freedom to understand, use, modificy, reproduce, and distribute of the software -- makes free software an instrument of economic liberation in the solidarity economy. This idea contrasts with the purely practical philosophy of open source, which renounces freedom as a value for those of functionality or success.

Information technology can contribute to extending private and public freedom, or become an instrument of domination. In the face of information technology's expansion and the increasing digitalization of economic, political, and cultural processes, the power of a few corporations is growing---corporations that, with their proprietary software and abusive services, control people's computing and collect an increasing mass of data in every sphere of people's lives (often without the latter's knowledge) and deliver them to states, sometimes democratic, sometimes not, commercialize them, or share them with other companies, in order to obtain advantages and profits. This is a risk for democracy and for the public and private freedoms of all humanity.

To protect them, the resources and computing processes must respect freedom, and not subject their users to the power of corporations or other entities. The collaborative networks

of solidarity economy can facilitate this using free software designed to minimize surveillance of users.

As supporters of the free software movement and solidarity economy, we denounce and reject all use of IT for actions of oppression and domination, be they with software that is free or not.

We hold that every educational activity that uses software in public spheres should reject proprietary software, in order not to make the students dependent.

Annex 2: Example of interview transcription [in Spanish]
Interview with Mariano, member of Ik' ta K'op

Interviewer:

Mariano, cuéntame de ti.

Mariano:

Mi nombre es Mariano soy un joven tzeltal de 24 años de la comunidad de Abasolo en el municipio de Ocosingo en el estado de Chiapas. Actualmente laboro como profesor de primaria en el medio indígena, como a 10 horas de mi comunidad en la frontera con Guatemala. Aunado a eso coordino el colectivo Ik' ta K'op que desarrolla tres proyectos: el proyecto de redes inalámbricas de internet, el proyecto de intranet y el proyecto de la radio.

Interviewer:

Explícame de qué se trata el proyecto de redes inalámbricas.

Mariano:

La idea de las redes inalámbricas de internet es traer acceso de internet a las comunidades que están remotas, donde los operadores tradicionales no llegan. Entonces nosotros conectamos con un modelo social comunitario a comunidades donde ellas participan en la creación de la red... en cuidarlos y en mantener la red.

Interviewer:

¿Por qué son ustedes los que tienen que impulsar el servicio de internet?

Mariano:

Pues lamentablemente como somos una comunidad que para ellos es económicamente marginada y de extrema pobreza, pues nosotros no somos de interés para ellos. Las inversiones que deberían hacer en la comunidad serían de millones de peso y no podrían recuperar el dinero invertido, entonces somos catalogados como pueblos que no tienen o no pueden tener desarrollo económico. Entonces a falta de eso y ante las peticiones a

gobierno de acceder a medios y de no haber respuestas tuvimos que hacer nuestros propios medios para generar nuestra propia comunicación.

Interviewer:

Entonces, ¿sí han intentado acercarse con empresas de telecomunicación?

Mariano:

Sí, la comunidad tiene una historia larga porque es parecida a miles de comunidades en el resto del país donde han tenido peticiones hacia empresas 'x' para tener acceso comunicación pero no acceden, como te digo porque no es una buena inversión, como en el caso de Oaxaca de telefonía comunitaria rizomática. Nosotros somos amigos de ellos; hablamos y compartimos experiencias con ellos.

Interviewer:

Cuéntame de la Radio Jitontik

Mariano:

La radio es una radio comunitaria que desarrollamos con varios compañeros. La idea es traer una radio comunitaria para que toda nuestra comunidad pueda acceder a este medio de comunicación. Es comunitaria porque se va formando con la gente; la gente va formando qué contenidos pasar, qué tipo de música – van participando también en el trabajo de la radio de la cabina de ir creando e ir transformando. Esa es la radio. Estamos transmitiendo desde hace aproximadamente 15 días a varias comunidades que están cerca de nosotros.

Interviewer:

Cuéntame del Intranet.

Mariano:

El intranet es un proyecto que nace de un proyecto que se llama Intrabach; el Intrabach es un recurso didáctico, educativo que se planteó en la preparatoria por el profesor Luis Ramón donde se puede acceder a contenidos locales: videos, archivos digitales, fotografía, PDFs, incluso programas. Entonces eso lo llevamos a un plano comunitario,

apoyándonos de que tenemos un sistema de roaming y de varios nodos instalados en la comunidad con internet, conectamos un servidor y en ese servidor puedes guardar contenido y ver esos contenidos locales.

Interviewer:

¿Cómo empezó Ik' ta K'op? ¿Cómo han llegado hasta donde están ahora?

Mariano:

La idea inicial era crear una radio comunitaria, pero desde antes nosotros ya estábamos con la idea de crear un proyecto de internet con mi familia. Queríamos crear un ciber pero no funcionó, pero nace la idea de llevar internet a la casa de un amigo y luego de otro profesor y luego de otra persona... Con el lapso del tiempo fuimos creando una red de nodos repetidores que cubrían una parte de la comunidad. En ello la gente podía acceder a estos medios. Entonces nosotros replicamos esto en varias partes de Abasolo logrando tener una gran cobertura.

Con la radio, cuando quisimos aprender hacer una radio comunitaria descubrimos muchos elementos comunitarios. Adoptamos estos elementos comunitarios a la red inalámbrica que teníamos, y como soy parte de una comunidad originaria indígena, Maya-Tzeltal, hay muchos principios que desde la familia nos enseñan. Entonces todos estos elementos se incluyeron en el proyecto, y fue así que nace el proyecto de la red inalámbrica y así nace el proyecto de la radio. Posterior a eso se une a nosotros el profesor Luis Ramón y nace el proyecto de Intrabach. Es así que se constituyen los tres proyectos de Ik' ta K'op.

Interviewer:

Cuéntame de los logros que han tenido hasta el momento.

Mariano:

El principal logro que hemos tenido es del acceso a los medios de comunicación. La comunidad no tenía ningún medio para comunicarse con el exterior más que un

teléfono, pero el teléfono era muy caro: $10 la hora en su momento, ahora está un poco más barato; pero con el internet lograron comunicarse de aquí al resto del mundo a través de mensajes de texto. También reducir los costos en comunicación drásticamente pues estamos hablando de hasta un 60% o 70% de reducción de costos de comunicación. Accesibilidad también porque hay lugares que están remotos y tenían que caminar 20 o 30 minutos para poder llegar a un teléfono; ahora desde su propia casa –desde cualquier parte de su casa– pueden comunicarse. Eso es lo que hemos logrado con redes. Con el intranet estamos fomentando la preservación de la lengua, de la cultura, de las costumbres y las tradiciones gracias a un archivo digital, una biblioteca digital... Queremos empezar a revalorar toda nuestra cultura. Con la radio estamos también fomentando la preservación de la cultura, pregonando el acceso y el derecho a la comunicación; [sirve] para mantener informada la gente. Entonces es un medio donde la gente puede expresarse y ejercer su derecho a libertad de expresión. [Estamos fomentando] la preservación de la lengua también porque hay programas que están en tzeltal: la hora la pasan en tzeltal, los saludos son en tzeltal… Y así vas influyendo mucho. Hemos descubierto también que hasta incluso en escritura [estamos influyendo] porque hay muchos chavos –chavitos de primaria o señores incluso– que tratan de escribir y dejar una carta, aunque esté toda garabateada, pero intentan y descubrimos que esto está apoyando para que la gente se anime a escribir y practique su escritura. Y así vamos logrando muchas cosas. En general estamos haciendo incidencia pública. Estamos insistiendo en que tenemos el derecho a la comunicación, el derecho a la libertad de expresión a la cultura... y poder demostrar que nosotros podemos crear nuestros propios medios de comunicación. Si no nos brindan estos servicios, nosotros tenemos la capacidad de crear nuestros propios medios de comunicación.

Interviewer:

¿Cómo han logrado adaptar y apropiarse de estas tecnologías?

Mariano:

Nosotros nos hemos propuesto que la tecnología no es la que nos debe absorber a nosotros; nosotros debemos absorber a la tecnología. Entonces es muy importante porque cuando aprendes y entiendes cuál es el valor de la comunicación y de la tecnología y le das un buen uso, pues la gente empieza a moldear [el internet] a su estilo. La radio, por ejemplo, la transformas a tu cultura porque transmites en tu lengua, transmites tus propios mensajes, tu propia música; con el internet haces tu propio modelo de gestión social, tu propio modelo de gestión económica donde los que pueden pagar pagan los que no son voluntarios y atienden entonces los nodos. Entonce hay valores como el trabajo comunal que hacemos en la comunidad que se adoptan a la red y vas así creando muchos elementos comunitarios para poder hacer la red y gestionarla.

Interviewer:

Ayer nos contaste mucho de su filosofía de vivir. Cuéntame un poco de esto.

Mariano:

El hacer medios comunitarios te va transformando y te crea una visión como persona. Entonces la misma comunidad tiene un estilo, una forma de vida... Lo único que nosotros hacemos es adaptar esto a la tecnología y moldearla a nuestra cultura. Aplicamos muchas cosas como el trabajo comunal que se aplica mucho para ayudar en las milpas, para hacer una construcción, cuando fallece una persona o también para hacer una radio, para grabar algo, para editar algo... Eso es el trabajo comunal. En redes aplicamos el término de mancomún, que es un término de 'man' –de comprar– y de común –entre todos–. Entonces los equipos lo compramos entre todos, la chamba la dividimos entre todos… Son cosas que vamos agarrando e involucrando en estos medios que vamos creando. Vamos creando una forma de ver, una forma de sentir sobre cómo es la vida alrededor de esto. Queremos incluir nuestra cosmovisión como pueblos indígenas en todo el proceso que estamos haciendo.

Interviewer:

Esto que me comentas me recuerda a la idea de software libre de la cual hablamos antes. ¿De que se trata esto?

Mariano:

En realidad el software libre sí es una filosofía, es un pensamiento... Cree más en la idea de la libertad... La libertad de poder ver el código, de poder distribuir el código, de poder copiar el código, de compartir el conocimiento... Entonces nosotros estamos más con la idea de compartir el conocimiento porque lamentablemente hay muchos grupos, muchas empresas –más que nada grupos– que han querido mantener el conocimiento en un solo lado. Entonces nosotros como comunidades al negarnos este conocimiento y el acceso a esta tecnología, no podemos ejercer nuestros derechos y cuando puedes manipular y tener acceso a esta tecnología y a este conocimiento empezamos a ejercer muchas cosas. Entonces hay personas que no les agrada esto... Pero es más un estilo de vida, no es una cuestión técnica, incluso es una cuestión más filosófica.

Interviewer:

¿Cómo congeniar esta filosofía de software libre con *su* filosofía?

Mariano:

Técnicamente y filosóficamente el software libre se trabaja en comunidad; no es un tú como persona... una persona sola. Es un conjunto de personas creando algo, compartiendo algo. Nosotros como comunidad hacemos todo en común; trabajamos todos para una sola cosa todos compartimos todo, nos nivelamos... todos creamos algunas cosas sin distinción alguna. Somos más como de varios.. un grupo creando algo, entre varios, no es algo individualizado; no es una sola persona. De cierta manera ambos movimientos se complementan porque comparten muchos valores, muchas ideas. Una asamblea comunitaria es parecida a un foro en internet. Se busca la solución de un problema o una respuesta a algo, y todos participan, todos proponen soluciones.

Algunos muestran si es que hicieron alguna iniciativa, otros discuten... y en una asamblea también, la gente se reúne, discute, propone ideas, se cuestiona si algo está bien o mal hasta finalmente llegar a una solución.

Annex 3: Interview break down and data bits example
Interview with Mariano, member of Ik' ta K'op

Step 1: Break down of relevant ideas

1. La idea de las redes inalámbricas de internet es traer acceso de internet a las comunidades que están remotas donde los operadores tradicionales no llegan.
2. Entonces nosotros conectamos con un modelo social comunitario hacia comunidades donde ellas participan en la creación de la red... en cuidarlos y en mantener la red.
3. Entonces a falta de eso [inversión] y ante las peticiones a gobierno de acceder a medios y de no haber respuestas tuvimos que hacer nuestros propios medios para generar nuestra propia comunicación.
4. La radio es una radio comunitaria que desarrollamos con varios compañeros. La idea es traer una radio comunitaria para que toda nuestra comunidad pueda acceder a este medio de comunicación. Es comunitaria porque se va formando con la gente; la gente va formando qué contenidos pasar, qué tipo de música... van participando también en el trabajo de la radio de la cabina de ir creando e ir transformando. Esa es la radio.
5. El intranet es un proyecto que nace de un proyecto que se llama intrabach; el intrabach es un recurso didáctico, educativo que se planteó en la preparatoria por el profesor Luis Ramón donde se puede acceder a contenidos locales: videos, archivos digitales, fotografía, PDF, incluso programas. Entonces eso lo llevamos a un plano comunitario, apoyándonos de que tenemos un sistema de roaming y de varios nodos instalados en la comunidad con internet, conectamos un servidor y en ese servidor puedes guardar contenido y ver esos contenidos locales.
6. ...cuando quisimos aprender hacer una radio comunitaria descubrimos muchos elementos comunitarios. Adoptamos estos elementos comunitarios a la red inalámbrica que teníamos, y como soy parte de una comunidad originaria indígena, Maya-Tzeltal, hay muchos principios que desde la familia nos enseñan. Entonces

todos estos elementos se incluyeron en el proyecto, y fue así que nace el proyecto de red inalámbrica y así nace el proyecto de la radio.

7. El principal logro que hemos tenido es del acceso a los medios de comunicación. La comunidad no tenía ningún medio para comunicarse con el exterior más que un teléfono pero el teléfono era muy caro: $10 la hora en su momento, ahora está un poco más barato; pero con el internet lograron comunicarse de aquí al resto del mundo a través de mensajes de texto.
8. También reducir los costos en comunicación drásticamente, pues estamos hablando de hasta un 60% o 70% de reducción de costos de comunicación.
9. Accesibilidad también porque hay lugares que están remotos tenían que caminar 20 o 30 minutos para poder llegar a un teléfono; ahora desde su propia casa –desde cualquier parte de su casa– puede comunicarse.
10. Con el intranet estamos fomentando la preservación de la lengua, de la cultura, de las costumbres y las tradiciones gracias a un archivo digital, una biblioteca digital…
11. Queremos empezar a revalorar toda nuestra cultura. Con la radio estamos también fomentando la preservación de la cultura, pregonando el acceso y el derecho a la comunicación; [sirve] para mantener informada la gente.
12. Entonces [la radio] es un medio donde la gente puede expresarse y ejercer su derecho a libertad de expresión.
13. [Estamos fomentando] la preservación de la lengua también porque hay programas que están en tzeltal: la hora pasan en tzeltal, los saludos son en tzeltal…
14. Hemos descubierto también que hasta incluso en escritura [estamos influyendo] porque hay muchos chavos –chavitos de primaria o señores incluso– que tratan de escribir y dejar una carta, aunque esté toda garabateada pero intentan y descubrimos

que esto está apoyando para que la gente se anime a escribir y practique su escritura. Y así vamos logrando muchas cosas.

15. En general estamos haciendo incidencia pública. Estamos insistiendo en que tenemos el derecho a la comunicación, el derecho a la libertad de expresión a la cultura... y poder demostrar que nosotros podemos crear nuestros propios medios de comunicación.
16. Si no nos brindan estos servicios, nosotros tenemos la capacidad de crear nuestros propios medios de comunicación.
17. Nosotros nos hemos propuesto que la tecnología no es la que nos debe absorber a nosotros; nosotros debemos absorber a la tecnología.
18. Entonces es muy importante porque cuando aprendes y entiendes cuál es el valor de la comunicación y de la tecnología y le das un buen uso pues la gente empieza a moldear [el internet] a su estilo.
19. La radio, por ejemplo, la transformas a tu cultura porque transmites en tu lengua, transmites tus propios mensajes, tu propia música...
20. ...con el internet haces tu propio modelo de gestión social, tu propio modelo de gestión económica donde los que pueden pagar pagan los que no son voluntarios y atienden entonces los nodos.

Step 2: Organisation of ideas into categories (first iteration)

Note: being a first iteration, and of only one interview, this example does not yet show the names of the categories.

Category 1	La idea de las redes inalámbricas de internet es traer acceso de internet a las comunidades que están remotas donde los operadores tradicionales no llegan. Entonces a falta de eso [inversión] y ante las peticiones a gobierno de acceder a medios y de no haber respuestas tuvimos que hacer nuestros propios medios para generar nuestra propia comunicación.

	Entonces [la radio] es un medio donde la gente puede expresarse y ejercer su derecho a libertad de expresión. En general estamos haciendo incidencia pública. Estamos insistiendo en que tenemos el derecho a la comunicación, el derecho a la libertad de expresión a la cultura... y poder demostrar que nosotros podemos crear nuestros propios medios de comunicación. Si no nos brindan estos servicios, nosotros tenemos la capacidad de crear nuestros propios medios de comunicación.
Category 2	Entonces nosotros conectamos con un modelo social comunitario hacia comunidades donde ellas participan en la creación de la red... en cuidarlos y en mantener la red. La radio es una radio comunitaria que desarrollamos con varios compañeros. La idea es traer una radio comunitaria para que toda nuestra comunidad pueda acceder a este medio de comunicación. Es comunitaria porque se va formando con la gente; la gente va formando qué contenidos pasar, qué tipo de música... van participando también en el trabajo de la radio de la cabina de ir creando e ir transformando. Esa es la radio. Entonces lo llevamos [Intrabach] a un plano comunitario, apoyándonos de que tenemos un sistema de roaming y de varios nodos instalados en la comunidad con internet, conectamos un servidor y en ese servidor puedes guardar contenido y ver esos contenidos locales. ...cuando quisimos aprender hacer una radio comunitaria descubrimos muchos elementos comunitarios. Adoptamos estos elementos comunitarios a la red inalámbrica que teníamos, y como soy parte de una comunidad originaria indígena, Maya-Tzeltal, hay muchos principios que desde la familia nos enseñan. ...con el internet haces tu propio modelo de gestión social, tu propio modelo de gestión económica donde los que pueden pagar pagan los que no son voluntarios y atienden entonces los nodos.
Category 3	El principal logro que hemos tenido es del acceso a los medios de comunicación. La comunidad no tenía ningún medio para comunicarse con el exterior más que un teléfono pero el teléfono era muy caro: $10 la hora en su momento, ahora está un poco más barato; pero con el internet lograron comunicarse de aquí al resto del mundo a través de mensajes de texto. También reducir los costos en comunicación drásticamente, pues estamos hablando de hasta un 60% o 70% de reducción de costos de comunicación. Accesibilidad también porque hay lugares que están remotos tenían que caminar 20 o 30 minutos para poder llegar a un teléfono; ahora desde su propia casa –desde cualquier parte de su casa– puede comunicarse.
Category 4	Con el intranet estamos fomentando la preservación de la lengua, de la cultura, de las costumbres y las tradiciones gracias a un archivo digital, una

	biblioteca digital… Queremos empezar a revalorar toda nuestra cultura. Con la radio estamos también fomentando la preservación de la cultura, pregonando el acceso y el derecho a la comunicación; [sirve] para mantener informada la gente. [Estamos fomentando] la preservación de la lengua también porque hay programas que están en tzeltal: la hora pasan en tzeltal, los saludos son en tzeltal… Nosotros nos hemos propuesto que la tecnología no es la que nos debe absorber a nosotros; nosotros debemos absorber a la tecnología. Entonces es muy importante porque cuando aprendes y entiendes cuál es el valor de la comunicación y de la tecnología y le das un buen uso pues la gente empieza a moldear [el internet] a su estilo. La radio, por ejemplo, la transformas a tu cultura porque transmites en tu lengua, transmites tus propios mensajes, tu propia música...

Annex 4: Example of field notes

Date: June 3, 2018
Activity: Radio both visit with Genoveva

Note: Most of the field notes were taken immediately after any event, although I always carried my notebook in case I needed to write something down. In this particular event, I took notes during and after the event

[Notes taken *a posteriori*]

Today I woke up at six in the morning. As per my usual morning routine, I quickly showered, got dressed and prepared for the day. Like yesterday, I was eager to continue with my research, but also like yesterday, my haste proved unnecessary. Although everyone else had also woken up by then, they were calmly going about their day. It wasn't until about nine in the morning that we sat around the table to drink some coffee and have breakfast.

Perhaps noticing my impatience, Mariano suggested that I head towards the radio booth, where Genoveva was meant to be. I happily obliged, and indeed, found Genoveva as promised. She was programming the music that was going to be played through the radio for the next hour or so. As I entered the booth, she greeted me and we began to talk about nothing in particular. It seemed as if the actual operation of the radio required minimal efforts. Eventually, we began to talk about the radio, how it worked and what it was intended for.

[Notes taken while there, during my discussion with Genoveva]

- Etertics is the software they use to operate the radio
- At 16:00, someone –usually Genoveva or Jesus– speaks through the radio. They share news, local announcements and greetings.
- No publicity is allowed in the radio
- 15 watts power
- They are heard in 23 surrounding communities
- Frequency: 95.1
- IFT, or Instituto Federal de Telecomunicaciones
- Legally gray area: they don't actually have an IFT permission to broadcast, although, being part of an indigenous community, they don't actually need that permission.
- Frequency 95.1 was empty, so they just took it.
- Komuntaitik: voluntary community work has kept the radio operating.