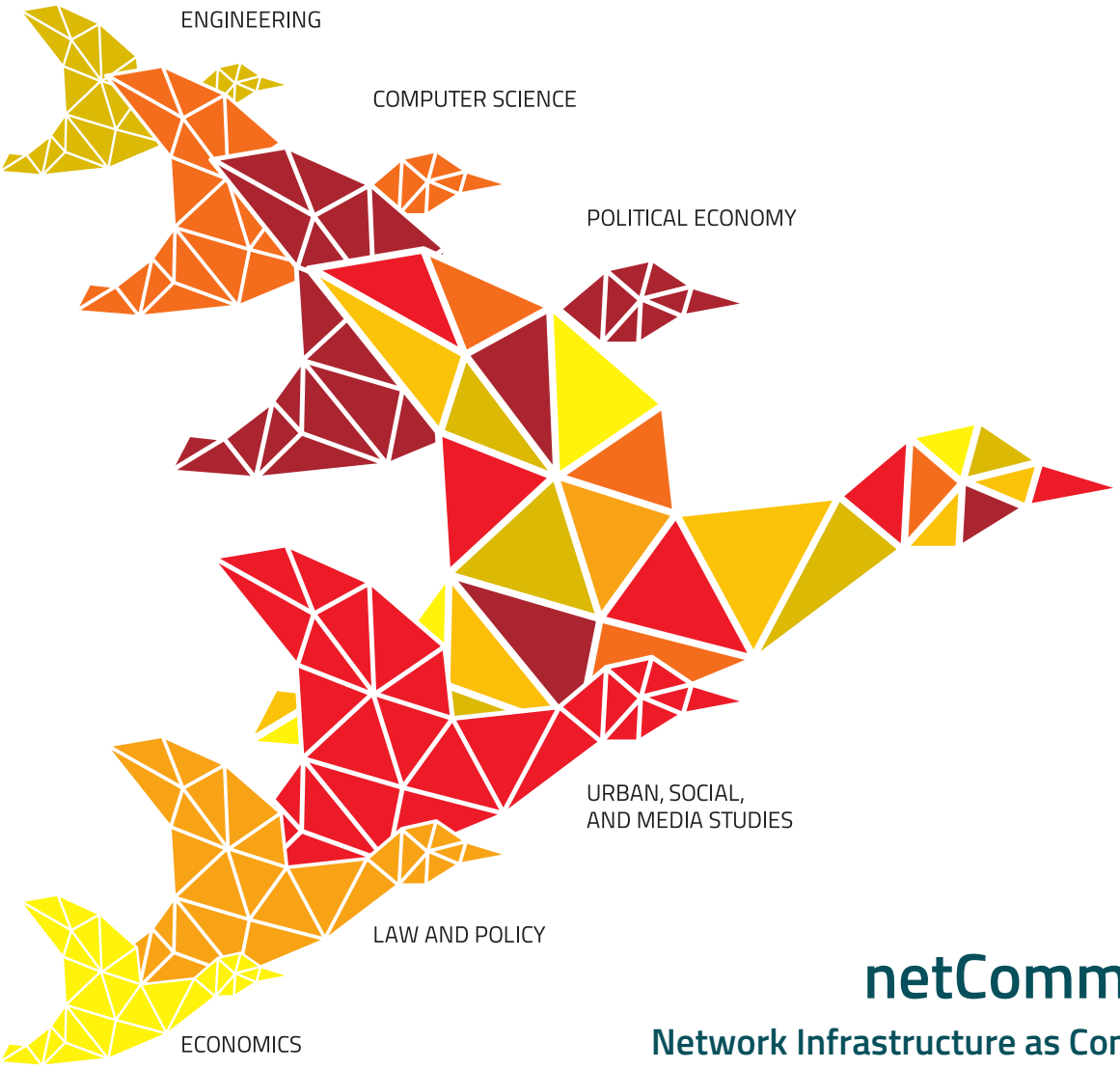

netCommons

Network Infrastructure as Commons

Community Networks and the Right to the City

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Executive summary

This deliverable summarizes the theoretical and practical work performed in the context of netCommons project's Task T5.2 on "Alternative Internets and the Right to the City". The aim is to "extend the concept of the 'right to the city' for the case of hybrid urban space, both in theory and in practice, and to highlight the important role that CNs can play for empowering citizens to claim their right to the hybrid city."

Since the publication of the article that coined the term "the right to the hybrid city" Antoniadis and Apostol (2014), complementary theoretical work has been published, with titles like "the right to the digital city", "informational rights to the city", "digital rights to the city", "right to the co-op city", and more. This body of work makes clear the threats on privacy, freedom of expression and self-determination posed by the domination of big tech corporations in the Internet market. By and large it has reinforced the argument that the very right identified by Henri Lefebvre is at stake in the digital space of cities, and further broadened the view on the meaning of the right to the city in today's ICT-mediated city life.

Given that, the work of this task is focused toward making a step further beyond awareness and theoretical justification of what seems obvious today: the digital is an inseparable part of the city fabric and is subject to a wide variety of rights and claims for ownership and self-determination.

First, the report elaborates on the concept of the right to the city, in particular on the right to difference, from an actor perspective. This is not addressed in depth in existing literature, and can be very useful for Internet scholars and activists. As an extension of that, in the section following the literature review, this document makes a comparison of digital networks with the early days of railways' development and their associated services, looking also at their impact on spatial development and on the political economy of territory.

Second, we report on three long-term threads of practical work that will hopefully help all interested parties, including urban and digital activists, to engage in the required future coalitions between different areas of commoning for the right to the hybrid city.

More specifically, these threads are referring to:

- The development of a series of interdisciplinary and transdisciplinary 'encounters' between urban and digital activists. Their purpose is to analyze examples from past and current struggles in both domains pointing to similarities, differences, and strategies for collaboration, promoting CNs as a key urban ICT infrastructure for supporting local services and applications. Until the writing of this deliverable three of such encounters of two-four hours duration have been organized, all of them organized instead of the single workshop that was envisaged and promised in the DoW. See Chapter 4
- The development of a prototype hybrid neighborhood node, a hybrid urban living lab in the centre of the city of Zurich, serving both as a hub for exchanges between urban and digital activists and as a living exhibition of alternative technologies like self-hosted services. See Chapter 5
- The development of a "CN model" appropriate for integration with the Swiss cooperative housing model in the form of a) specific "requirements" for developers integrated in an architectural competition for an on-going cooperative housing project, b) an analogy with organic agriculture and a speculative description of a future cooperative housing model (published as a book chapter in a recent book edited by one of the pioneers of the cooperative housing movement in Zurich, Hans Widmer (aka P.M.). See Appendix A, Appendix B, Appendix C

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List of Acronyms

CN	Community Network
ICT	Information and Communication Technology
WiFi	Wireless Fidelity

1. Introduction

1.1. The hybridity of space

This document advances an understanding of space, and implicitly urban space, according to the theory of spatial production by French philosopher and urbanist Henri Lefebvre (1991). Based on decades-long spatial observations and analyses, Lefebvre suggests to link practically and discursively the fields of physical space, mental space and social space, in a dialectical spatial triad (i.e., spatial practice, conceived and lived space). Influenced by Lefebvre's writings, since the 1960s a paradigm shift in urban studies brought about the social and spatial understanding of urban analysis, and later in the 1980s emerged the new urban sociology. This alternative approach was introduced in the 1990s as the new paradigm in urban studies, called the 'socio-spatial approach' by Gottdiener (2000, 2006), and further built the argument that space is both social and physical, material, space.

It is critical to understand space through its social dimension, as presently Information and Communication Technology (ICT) acts as mediator for interactions between people, and thus contemporary space has an inherently hybrid (digital and physical) nature. This hybrid realm has the capability to support novel types of communication between people in many locations all over the world, synchronous or recorded, to create simultaneous experiences, and even more importantly, to bring in contact a diversity of actors. For instance, it stimulates the connection between citizens and local authorities either toward better collective awareness like in the case of open data, or toward more inclusive (e-)participation in decision-making processes.

At the same time digital space is becoming more and more a part of the physical material space. That manifests already by means of ubiquitous signage, displays of online activity, physical artifacts pointing in public spaces at specific virtual locations, and so forth. If the hybrid state of space will become the operating condition of design practice –being incorporated in the design reasoning of digital software and infrastructure, integrated within spatial development processes– the container of digital interactions will be increasingly the physical space for social life itself. That could materialize through the use of public interactive displays and projections, and the flexible embodied interactions enabled by smartphones and location-based mobile applications.

Undoubtedly, people's behavior and social exchanges are very much influenced by the way the digital technology is moderating these interactions. Thus being aware of the implications, benefits and threats of the hybrid condition of space is necessary in both processes of spatial design and in the design of digital technology, as both dimensions are shaping social space.

Making a step ahead in that direction, toward raising collective awareness and sharing knowledge regarding our hybrid environments, this document reports on a multitude of related activities. They include a series of interdisciplinary and transdisciplinary 'encounters' between urban and digital activists documented in Chapter 4, and the development of a hybrid neighborhood node in a central area of Zurich, by the name L200, which is presented in Chapter 5. Out of these practical experiences, a set of guidelines is devised for designing hybrid spaces for social life.

1.2. The right to the city, the right to difference

Following his active involvement in the 1968 street unrest in France, Henri Lefebvre (1991) coined the term the 'right to the city', to denominate a ubiquitous 'cry' for the democratization of urban space, understanding the 'city' from within the urbanization process, as the main area of investment and productive activity of the post-industrial phase of capitalism. In the last five decades the term has been used as a form of resistance

(e.g., Brenner, Mayer, and Marcuse (2012); Friedmann (1993); Harvey (2008); Henri Lefebvre (1996); Schmid (2006)) to the homogenizing planetary urbanization, Brenner and Schmid (2011); Henri Lefebvre (2003), as top-down decision-making turn locations more and more into non-differentiated abstract spaces.

Imagine an intimate place in a small town, like the square that gathers a diverse crowd in close proximity, where people can get easily in touch, whether they are familiar or not with each other. Abstract space generates the opposite of that. It is not only that all places start to take the same shape, looking and functioning the same way, regardless of local specificities, but even more, the abstract space cannot naturally produce differences. Because the abstract space denies differences by disabling that natural ability to produce them, Henri Lefebvre (1970, 1991) proposes the perpetual struggle for the right to difference, which is a means to creating differences necessary to sustain life, providing access to the city as specific places (of difference); refer also to Schmid (2006).

The right to difference "is a 'right' whose only justification lies in its content. It is thus diametrically opposed to the right of property, which is given validity by its logical and legal form as the basic code of relationship under the capitalist mode of production", Henri Lefebvre (1991), p.396. In 1970 Lefebvre wrote the Differentialist Manifesto as a notification of the political failure of the capitalist society, in whose 'closed' world the rational 'mastery of nature' twists the difference into 'in-difference,' in the double sense of undifferentiated and indifferent.

Scholars and activists of the right to the city movement take into consideration the current societal conditions. The right to the city is "far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization. The freedom to make and remake our cities and ourselves is, I want to argue, one of the most precious yet most neglected of our human rights", Harvey (2008), p.23. Thus it becomes "rather an oppositional demand, which challenges the claims of the rich and powerful", Mayer (2012), p.71, through resistance and political action.

Certainly digital technology is critical in expanding such generic urbanization process at the planetary scale. Through the 'right to the hybrid city', Antoniadis and Apostol (2014) adapt Lefebvre's formulation to the current hybrid spatial condition. By drawing analogies between physical and digital spaces they bring into the discourse a set of fundamental rights within this ongoing struggle. These categories refer to a) the right to access the core resources of the city; b) the right to be represented, to be part of the collective identity; c) the right to participate in important decisions regarding urban policies and design; and d) the right to ownership of the urban commons, which refers to commonly held property, and use, stewardship and management in common of the available and produced resources. These fundamental rights are relevant for both physical and digital space, the latter being subject to power structures and inequalities in terms of access, representation, participation, and ownership.

The Internet infrastructure and services are controlled by a few global providers, overlaying localities through non-specific technological solutions and shaping hybrid space in the abstract, similarly to urbanization processes that are disconnected from local particularities and from the everyday life experience. Furthermore, like the digital infrastructure, online social networking platforms are highly privatized spaces. Significant threats related to privacy, surveillance, censorship, and manipulation (e.g., Morozov (2013); Tufekci (2014)) are posed in the absence of ownership and control of these platforms on the users' behalf. The corporations owning them have significant power over software design, which influences users' behavior, and over the management of all collected data, ranging from multimedia content and private information to patterns of activity.

In addition, as noted by Harvey (2008), p.24, "The coercive laws of competition also force the continuous implementation of new technologies and organizational forms, since these enable capitalists to out-compete those using inferior methods," increasing the already existing digital divides, and thus excluding many from the production of contemporary hybrid space. To avoid the reproduction of previous forms of domination is necessary the struggle for an essential right to the city, namely the right to centrality, which means "regrouping of differences in relation to each other", Henri Lefebvre (1996), p.19, like in allowing alternative access to

power to various political voices, and representation within the political spectrum. As a consequence the political struggle for the right to the hybrid city turns into a means to renew society, and to renovate centrality in the production of hybrid social and material space out of contemporary urbanization processes.

These concerns raise the issue of the citizens' right to the digital city, within the broader concept of the hybrid city, and of the potential social impact of alternative provision of technologies like community networks. In Chapter 2, a brief overview of related literature highlights the current state of research on the topic with respect to a) the right to the Internet, b) the right to the city supported by digital technology, and c) the right to the hybrid city. Before that, let us clarify what type of rights are meant in this document.

1.3. Legal versus philosophical rights

Following up on the above explanation of the right to difference, this section points at the distinction between legal and philosophical rights. There are, on the one hand, abstract constructs like the right of property 'given validity by its logical and legal form' as Henri Lefebvre (1991) noted in the citation included in the previous section. On the other hand, there are other types of rights, providing for necessary conditions that ensure the durability of a healthy system. For instance, Brown and Kristiansen (2009) remind us that "The right to the city is not a positive right in a legal sense: neither UNESCO nor UN-HABITAT have the intention to promote a new international legal instrument. Rather it is wished to encourage cities to learn from the best practices and tool kits that both UN Agencies have already and will prepare with the relevant partners."

A case in point is the movement for the 'young' cooperative housing in Zurich that develops new forms of sustainable living. In the present conditions this movement generates a) alternative voices in the political spectrum, b) collective actors as non-profit organizations in the real estate development market, c) promoters of progressive design and of initiatives related to different aspects of sustainability of the everyday life etc.

By claiming their right to the city, nevertheless, local communities may become significant players within the current phenomenon of planetary urbanization. Citizens can establish living laboratories of social learning that can beneficially provide alternative views to the solutions generated in the marketplace. But the sources of resistance generally depend on the initiatives of highly motivated individuals and take place outside the formal institutional frameworks, mostly restricted to progressive neighborhoods or specific urban subcultures.

In addition, within the current globalization processes there are multiple dispersive forces that, despite any physical proximity, limit significantly the incentives and capacities of urban communities to socialize, to share resources and information, and most importantly to identify their values 'in common.' By shaping a stimulating space for the continuous expression and integration of shared values in the everyday life, a sense of being-together can be restored more intimately than what modern society allows at present. Diminishing the disintegration of society, and strengthening the role that local action plays in improving the quality of life in cities are some of the immediate effects of restoring the urban commons.

Such necessary social space comes to reality in Zurich due to an urban context enabling the production of differential space. For instance, that is generated through founding cooperative associations for developing sustainable, ecological and collective forms of housing and living. Zurich has a 100 years tradition of cooperative housing that started with the workers movement of the industrialization age, and that after the 1990s took an innovative turn with the so called 'young' housing cooperatives. The 'young' cooperatives turn was initiated with the 1980 unrest in Zurich, when youth went to the streets to claim their right to be represented in the city. Among other implications of their claims, a follow up was a new movement to develop collective forms of sustainable living in cities, which was inspired by the utopian book with the title bolo'bolo written by Hans Widmer, aka P.M. (1983), and also rooted in the squatting scene of the late 1980s and 1990s.

During a century the necessary legal framework has been structured to allow for the grassroots production of alternative forms of living space in the current real estate development market. Nevertheless, the production of resilient social space through housing and living cooperative projects is an actual example of providing for the right to difference within the democratic practices in Zurich. This is the practical context in which NetHood is

placing related research on the struggle for the right the hybrid city, and the impact of this work is presented in the following section.

Just like Lefebvre invited citizens to constantly and actively claim their right to the city, through generalized self-management (in the French language: autogestion généralisée) and organization, NetHood suggests in this work to have the same take for the case of the Internet; see also Purcell (2017). Thus here both theoretical and practical tools are documented, with the aim to inspire and empower urban and digital activists to join forces and be proactive in imagining alternative internets and alternative hybrid spaces, by enacting their right to difference, promoting "net-diversity."

That is a better option than becoming only passive recipients of the efforts of big corporations like Facebook and Google to "connect the world". At the same time, acting toward the right to difference could renovate centrality, by allowing more voices to have access to, and power within the political spectrum, and an illustrative example is the Sarantaporo.gr case described in detail in the D3.1 and D3.3 netCommons deliverables on participatory practices as a multi-disciplinary methodology.

1.4. Research impact

The work of NetHood regarding alternative Internets and the right to the city has been twofold. On the one hand, the theoretical framework introduced in the Antoniadis and Apostol (2014) paper on 'the right to the hybrid city' has been enriched with an understanding of the right to difference and to centrality. To point at the critical role of regulation for balancing the power relations of key actors engaged in the development process, we make an analogy with transportation infrastructure networks, more specifically with the Parisian rail stations, their location in the city fabric and their impact on the territory. In this context, the challenges, opportunities, and strategies for the empowerment of local actors, and the protection of their right to difference and centrality (in the sense of power and ownership of strategic infrastructure) in the history of rail stations have provided useful insights and inspiration about possible links between the legal and the technical threads of work in netCommons.

On the other hand, most of the effort invested in this task was directed toward bridging two mostly isolated groups –urban and community networks activists– the missing links regarding collective awareness of the similarity of their struggles, and of the very much needed collaboration and synergies. This process had both theoretical and practical manifestations. At the research level, two special issues of the Journal of Peer Production published during the duration of the project made a first step toward this direction. First, the special issue on Alternative Internets Tréguer, Antoniadis, and Söderberg (2016) focused on the technical dimension inviting urban scholars to bring their own perspective in the discussion, while the issue on CITY Travlou, Antoniadis, and Anastasopoulos (2018) reversed the focus, and included papers that touched exactly on the intersection between the right to the Internet and the right to the city like Schwarz (2018). At the practical level, NetHood organized a series of workshops explicitly framed as "encounters" between researchers and activists from 'both sides' in three different countries in Heraklion, Greece, in Berlin, Germany, and in Zurich, Switzerland, in collaboration with the CAPS project MAZI.

As anticipated, bringing together in the same room urban and community networks activists has been very challenging in terms of building a common language. In all three cases, nevertheless, the encounters have already started to materialize in the form of concrete collaborations between the different parties. One of these collaborations involved NetHood itself, and led to a new project, the actual creation of a new type of hybrid space located in the center of Zurich, L200[1]. It is in this space, L200, that both the theoretical and practical threads of NetHood's work converge and meet with a wide variety of relevant actors in Zurich. The association running the L200 space counts at the time of writing of this deliverable more than fifty members, including individuals and many firms and associations.

[1] http://nethood.org/l200

This unexpected outcome of the project task is already an important accomplishment, which will be presented in the next Transdisciplinarity conference in Lausanne Apostol, Antoniadis, and Raoseta (2018); it opens up a very large potential for the materialization of the theoretical claim to the hybrid city in a concrete location where both digital and urban infrastructure is co-created and owned by civil society actors. This specific project is transformed into a prototype that can be easily replicated to become a true game changer. Moreover, NetHood's experience to co-create L200 as a hybrid space will feed to the participatory design methodology developed in WP3, and more specifically, the "Hybrid Space Design" process (refer to netCommons Deliverable D3.3, pp. 69-73).

1.5. Structure of the deliverable

The rest of the deliverable is structured as follows. Chapter 2 reviews different perspectives on digital rights more or less connected to the concept of 'the right of the city' and compares them with NetHood's understanding of 'the right to the hybrid city'. Then the three main threads of NetHood's work are developed toward bridging the struggles for the right to the Internet with those for the right to the city. Chapter 3 presents an analogy with transport networks, and more specifically railway infrastructure, which provides useful insights on the role of regulation for keeping a power balance between the different actors and points to the need for conceptualizing the analogy to the train station for the case of the Internet. Chapter 4 reports on the three different "encounters" between digital and urban researchers and activists, organized by NetHood. Chapter 5 documents the ongoing process of building an association that runs a very central space in Zurich with exceptional visibility, as a hybrid urban node and a living lab for co-creating tools that empower citizens to claim their rights to the hybrid city. We consider this development as a very tangible manifestation of our previous theoretical approach Antoniadis and Apostol (2014), which serves as the best conclusion for NetHood's work in this task, which will hopefully further develop for long after the end of the netCommons project.

This document includes an Appendix section reporting ongoing work on integrating Community Networks (CNs) with the cooperative housing model in Zurich, and on the L200 space. Thus it includes 1) a proposal for the potential inclusion of an ICT center in the new cooperative housing project Kochquartier's architectural competition, Appendix A; 2) speculative description of integration of CN principles in the NeNa1 cooperative housing project, from the article "The Organic Internet", Antoniadis (2018), translated in German for the book "Die Andere Stadt", Antoniadis (2017), a small part of which is included in Appendix B; 3) the english draft of the October 2018 L200 newsletter, Appendix C; 4) The first L200 flyer; and 5) the abstract for the poster to be presented at the Transdisciplinarity conference in Lausanne, November 15, 2018, Apostol et al. (2018); see Appendix D.

2. Related Work

In this chapter we provide a short overview of different perspectives on the relation of digital rights in an urban context. The idea of "digital" cities has been discussed since the early days of the Internet, as the "city of bits", Mitchell (1995), or the "cybercity", Boyer (1996). But it is only recently, with the arrival of the "smart city" formulation, that a strong critique has started to be articulated not only regarding the effect of technology to the city, the "what" technology could bring (negative and positive), but also regarding the technology itself, the "how" it is designed and implemented.

In the following sections, we provide a quick overview of selected works starting from those that address the rights to the Internet independently from the urban context. We then present works that analyze how the digital technology can empower citizens to claim their right to the city without questioning the internal properties of the corresponding platforms and tools. And we conclude with the works, including ours, that try to bring together these two domains of "rights"; they have also slightly different perspectives between them, while some focus more on creating awareness of the threats and challenges, others are more proactive discussing possible solutions and action plans.

2.1. The right to the Internet

The question of digital rights has been increasingly discussed and analyzed in the media and scholarly literature. The more evident it becomes that the power derived through the processing of digital data, and most importantly through the mediation of online interactions, the more urgent it becomes to devise ways for a more democratic Internet. A large part of this work is focusing on the significant threats posed by this extreme power granted to big Internet corporations, e.g., Bridle (2018); Greenfield (2018); Lanier (2013); Morozov (2013); Tufekci (2014), which are more and more widely understood through various privacy and manipulation scandals such as the Cambridge Analytica. However, the possibility to manipulate behaviour, Tufekci (2014), to exploit the labor of users, Fuchs and Sandoval (2014), and other forms of digital hegemony, de Rosnay and Musiani (2016), are less obvious are thus more difficult to combat and raise awareness about.

Here we highlight those studies that focus on a rights-based perspective using concepts, terminology and analogies that have been inspirational for our own work. For example, in the book "Community Networks: the Internet by the People, for the People", Belli (2017), p.24, defines network self-determination as "*the right to freely associate in order to define, in a democratic fashion, the design, development and management of network infrastructure as a common good, so that all individuals can freely seek, impart and receive information and innovation.*" Thus network self-determination is based on the "*right to 'informational self-determination' that, since the 1980s, has been consecrated as an expression of the right to free development of the personality*" (p.25).[1] As Belli stresses "*The argument is straightforward, or should be: groups of individuals experiencing*

[1] As clarified by Belli, "*The first article of both the charter of the United Nations and the two International Covenants of Human Rights decisively affirm that, by virtue of the fundamental right to self-determination, all peoples are free to pursue their economic, social and cultural development as well as self-organisation. According to the Articles 1(3) of both Covenants, all states have an obligation 'to promote the realisation of the right to self-determination,' which is considered the collective right of a given community to determine its own destiny. Community networks foster network self-determination, for they allow individuals to decide independently how to pursue their economic, social and cultural development, choosing which kind of technology, applications and content are best suited to meet the needs of the local community and using and developing them at the local level, in a quintessentially distributed fashion. The goal of community networking is indeed to empower individuals who will become new, active participants in the Internet, thus enjoying the benefits of connectivity while contributing to the evolution the network of networks as 'a large, varied and evolving space of technology'.*" See https://www.ietfjournal.org/network-self-determination-when-building-the-internet-becomes-a-right/

digital divides, as well as any other community, have a right to free development of network infrastructure" (p.36).

Framing the option for network infrastructures in common as a human right brings to our attention the fact that there are important legal and political barriers for local communities even when they find the resources and willingness to build their own network infrastructures according to their local values and needs. Such a conceptual tool can be proven very helpful when one wishes to address local stakeholders.

The "right to network self-determination" is called the "right to co-create the Internet" by Echániz (2017), who makes a very useful analogy with food, stressing the difference between food security and food sovereignty. In his own words:

> "*The difference in perspective is of the same nature as the distinction between food security and food sovereignty. You may find Bayer/Monsanto advocating for food security; their business is "to feed the world"; but you won't find them defending food sovereignty. The decolonization and sustainable self-determination principles embodied in the food sovereignty movement are incompatible with the view of concentrated power in the Agro/Food industry just as much as the liberating characteristics of Internet co-creation are to the Internet "powers that be"*."

This is a critical dichotomy between a right being satisfied in a top-down way, as a service, and a right to be claimed on a community's own terms, including the right to "not network", as provocatively framed by Léger (2017).

This resonates also with the concept of the right to the city, applied in the case of the Internet (without including the urban dimension), and our own analogy with organic agriculture, which stresses on locality and a more ecological perspective, suggesting not only the need for collective ownership and management of Internet infrastructure and services, but also the design of technology in ways to encourage more healthy lifestyles and indeed more moderate use of the Internet, Antoniadis (2018).

The concept of sovereignty is also promoted by hacker groups, which is nicely summarized in the book "Technological sovereignty V.2", Spideralex (2018). This collection of works, without focusing explicitly on network infrastructures but the wider Internet ecosystem, brings forth important concepts like the dual role of games (Ippolita), and the viable alternative vision of self-hosted federated applications based on libre software promoted by projects like Framasoft. The success story of the the Twitter-alternative Mastodon, with thousands of self-hosted, but federated, micro-blogging servers.

Theorizing this model of decentralization Lovink and Rossiter (2018) propose the term "orgnets" to describe this, and other, alternative forms of "organized" self-organization. They ask: "*What can replace the corporate walled gardens such as Facebook and Twitter?*". And answer: "*a federation of organized networks, sustainable cells that operate as secret societies.*"

The concept of platform cooperativism introduced by Scholz and Schneider (2016) is another framing focusing more on the ownership and governance of online platforms, friendly to free software and community networks in principle, but not strictly tied to them. For example, a platform cooperative could be very well based on proprietary software, even following extracting unethical strategies, like AirBnB, but sharing the profits among the owners of the corresponding platform.

The fact that there are different Internet "layers" of rights, from the infrastructure and devices, to applications, content, and data, see Losey and Meinrath (2016), makes the formulation of alternatives a complex task that requires the collaboration of different actors, as exemplified by the contributions of the JoPP special issue on Alternative Internets[2].

[2]Available online at http://peerproduction.net/issues/issue-9-alternative-internets

2.2. The right to the city supported by digital technology

On the other side of the spectrum, focusing on the urban dimension, and considering technology as a tool for empowering citizens to claim their right to the city, there are entire research fields like community and urban informatics, which study the design of online tools for facilitating participation, representation, and other collective activities (e.g., refer to the Journal of Community Informatics and the C&T conference).

From this body of work, there are some that refer explicitly to Lefebvre's right to the city, like the work by de Lange and de Waal (2013), promoting the concept of "ownership" to describe "degree to which city dwellers feel a sense of responsibility for shared issues and are taking action on these matters." And they discuss different examples of "digital media technologies in the urban sphere offers opportunities to organize citizen engagement neither in local bottom-up nor institutionalized top-down fashion, but in networked peer-to-peer ways." As they comment "Instead of seeking consensus these tools allow room for managing differences."

Note, however, that in this work the 'internals' of these media technologies are not discussed: whether they are built based on the free, libre and open source software principles, or whether they run on locally owned and managed network infrastructures.

Similarly Estrada-Grajales, Foth, and Mitchell (2018) describe how a right to the city organization in Brisbane Australia, uses such a privatized medium like Facebook, to organize and promote their activities on claiming the rights of citizens in another domain, the city. The 2015 edited book Citizen's Right to the Digital City Urban Interfaces, Activism, and Placemaking, [Foth, M. Brynskov, M., Ojala, T. (Eds.)] contains more examples of how digital technologies can empower the citizens of the "digital city" referring also to the right to the city concept as an overall objective rather than a principle that should be applied also in the design and governance of the technological tools that act as enablers and mediators of collective processes. For more readings on related case studies, see also the JoPP special issue on CITY.[3]

2.3. The right to the hybrid city

Since the publication of the paper on the "right to the hybrid city" by Antoniadis and Apostol (2014), there have been many theoretical works that augment in different ways the initial concept of the right to the city, to include the digital space in cities.

We place in this category approaches that do not simply consider digital technology as an empowerment tool for citizens to claim their right to the city, as commented above, but which itself is considered a contested space subject to similar rights.

For example, Cardullo (2017) presents in his article an ethnographic work on a very relevant and informative case study of the concept of the right to the hybrid city that includes a Community Network (Open Wireless Network (OWN) in Deptford) at the center of the digital part of the right to the hybrid city. Within this framing, Unteidig, Cobreros, Calderon-Lüning, and Joost (2017) bring the design dimension and "query and develop perspectives on design as the creation of possibilities, choices, alternatives and openness, and hence to reflect on a notion of design that turns itself away from the creation of solutions towards the creation of means".

Schwarz (2018) interviews members of the Tapullo collective who tried to build a local network in Genoa but which was damaged because of a flawed power line installation by Italy's energy provide ENEL. As the author stresses this case study "serves as a reminder to the multiple manners in which other urban infrastructures and social networks underpin a seemingly independent DIY mesh network."

Other studies focus on different forms of "digital sovereignty" always combined with urban struggles for the right to the city. Shaw and Graham (2017a)'s "Informational Right to the City", brings Lefebvre's ideas around the right to the city to identify all possible threats posed by the power enjoyed of corporations like Google. They conclude that

[3] Available online at http://peerproduction.net/issues/issue-11-city/editorial-notes.

> "*an informational right to the city must employ all of the above –re-appropriation and participation as part of a sustained autogestion– as well as to behold and recover the digital oeuvre as a worthwhile pursuit. We must actively enjoy the practice of producing and managing our urban information. It is not enough to expect Google to provide you with a joy of your own.*"

Note that as geographers, Shaw and Graham's focus is rather on urban information, and thus highlight as possible 'commoning' strategies which

> "*might be more achievable and effective if they focus such autogestion at smaller, more tangible points and densities of lived space and human relations. Or, if they try and improve life for a pre-existing community or cluster of relations instead of simulating a global one that does not yet exist.*"

They give as a recent possible example of this perspective "Dewey Maps ", a project analyzed also by Roussel and hellekin Roussel and hellekin (2018) among other Singular Technologies, which "respond to local, specific conditions and needs not covered by the market, not because the market is incapable of covering such needs, but because covering them would go against its logic of capture."

The book "digital rights to the city" edited by Shaw and Graham (2017b), includes complementary perspectives of digital rights still with focus on data and information, with complementary perspectives like digital labour, Iveson (2017), and campaigning, Drakopoulou (2017).

In their essay "Rethinking the smart city", Morozov and Bria (2018), restate the question: "What does the 'right to the city' mean in a fully privatized, digital city, where access to resources is mediated by the swiping of a 'smart card' tied to our identity?". And they argue that "Without an accompanying struggle for technological sovereignty, the fight for the right to the city loses much of its power", but warn that "The very idea of technological sovereignty will likely soon be twisted into something it is not."

They also connect digital sovereignty with the urban dimension noticing that "The notion of "sovereignty"—whether of finances or energy—permeates the activities of many urban social movements, including those transitioning into leadership positions in their respective cities." Their focus in terms of a concrete plan toward technological sovereignty focus on data, since "Changing the data ownership regime, ..., maybe the most affordable option." They claim that cities is the right place to fight toward data sovereignty, with the city of Barcelona as one of the leading cities in this direction.[4]

However, similarly to the platform cooperativism narrative, "taking the value of our data back", Bria (2018), is a good cause but it does not necessarily answer the question how much (big) data, blockchain, and Artificial Intelligence do we really need, independently on whether we are the owners and beneficiaries of their value.

The case of Alphabet's Sidewalk Labs project, Doctoroff (2016), in Toronto, Sidewalk Toronto is another good example on how the digital and urban struggles are more and more interconnected, Bliss (2018); Carr and Hesse (2018); Wylie (2018), and how mega-companies like Alphabet are very comfortable with the narrative of "data ownership", Dawson (2018), and indeed also with this of "community-owned networks".[5]

Finally, the case of the (unsuccessful) move of Google to Berlin's Kreuzberg neighbourhood (see also the Berlin encounter in Sec. 4.2 is a yet another example that provides evidence that such struggles are not futile. See O'Sullivan (2018); Schuetze (2018).

Going back to data, de Lange (2017) expands the concept of ownership discussed above on the area of "Datafying the commons". In his own words,

[4] See https://ajuntament.barcelona.cat/digital/sites/default/files/LE_MesuradeGovern_EN_9en.pdf

[5] See https://twitter.com/sidewalklabs/status/1033136136066097152

> "*building on the ownership framework developed in earlier work, which bears strong similarities to the Lefebvrian idea of the right to the city. Both refer to a non-contractual collective sense of common stewardship, and the right to appropriate. A series of short cases illustrate how data can play in role in: 1. Creating data-driven networked publics 2. Articulating an otherwise abstract issue through data 3. Engaging people with an issue by sensing and/or narrating through data 4. Providing a horizon for action 5. Pooling resources in reciprocal ways.*"

Milan (2017) studies the general field of "data activism" as a "rapidly growing empirical phenomenon at the intersection of the social and technological dimensions of human action" (p.3). As Milan stresses

> "*Like media activism, data activism is more about constructing a 'politics of connections' than it is about constructing its own composite action system. It occupies the spaces in-between, more often than not serving other causes and movements, spread as it is across the field of movement politics. In that respect, it has a "boundary-spanning" capacity and works as a "point of articulation between movements" rather than a movement per se.*"

This idea of technology as a "boundary object" has been also central in the design and implementation of the MAZI project. See Antoniadis et al. (2015).

Niaros (2016) applies the model of Kostakis and Bauwens (2014) to analyze the different governance models behind smart city visions, creating a taxonomy along two axes: centralized vs. distributed, and capital vs. commons. The "resilient smart city" quadrant (Distributed and commons-based) describes the important role of Community Networks in this context. Particular emphasis is placed on "the rejection of the value of bigness and an opposition to the organisational tendency toward large scale" and the big challenge to make the locally generated knowledge applicable at a global scale.

In "The right to the Co-City" Iaione (2017) includes also the concept of Community Networks, without going into much detail for this specific case study, but bringing the importance of strategic partnerships between actors in the public, private and commons realms. In his words,

> "*The collective production and management of energy and communication infrastructure could be the first ground for the development of neighborhood cooperatives, or community cooperatives as legal and governance structure for urban pooling. The governance arrangement on which the community cooperative is grounded must be inspired by the principle of the public - private - commons partnership, one of the basic lines of intervention aimed at the creation of forms of public - private nonprofit partnerships for urban commons governance.*"

(p.136).

Finally, EcoDA, a project of R-Urban[6], is an effort initiated in a rural-urban context building "a platform for support, sharing and networking between community resilience practices." The concept of resilience is central here with the goal to build "a network of resident-run facilities to create complementarities between key fields of activity (economy, housing, urban agriculture, culture).", Trogal, Bauman, Lawrence, and Petrescu (2019). In the digital domain, the platform wishes to support individual practices to scale and for this "offers a database of digital tools for knowledge exchange, capacity and resource sharing, connectivity and mutual support." Baibarac and Petrescu (2017).[7]

2.4. What next?

Although by looking at the spectrum of works around the right to the hybrid city, one could feel really inspired and empowered, the question remains: what should be done next? In the next chapters, we first describe

[6] http://r-urban.net/
[7] See also https://ecodaplatform.hotglue.me/toolkit

two possible threads of action. One inspired by an analogy with railway infrastructure points to the creation of hybrid nodes in the city as public goods. The other focuses on building a common understanding and a shared language between researchers and activists in the two different domains, urban and digital. Furthermore, Chapter 5 on 'Hybrid infrastructure for the future' brings both these threads together in a concrete project in Zurich, the L200 space.

3. A historic perspective and a pragmatic approach

Stories of development of network infrastructures have great potential to bring to light some useful analogies, learning from similarities and differences while looking at ICT networks in the mirror of other stories of common provisions. For example, the present state of digital networks may be interpreted in comparison with the early days of railways' development and the associated services in their urban context, making associations of functionalities like train stations, in comparison with network nodes, or computing servers. This analogy is illustrated in the next sections through comparative reflections that are capable to highlight the various roles that political actors play in supplying infrastructures and services as public goods.

Note that these major infrastructures are based on global industries employing many people worldwide, have the capability to transform the imaginary and influence social behavior, and also have significant impact on spatial development and on the political economy of territory.

3.1. Stories of railways

Based on technical and capital considerations, the provision of railway infrastructure has been mostly a top-down intervention. What started as a wildly speculative and high-risk investment in an unproven transportation technology became the most important industry of the nineteenth century. Recalling the beginnings of this enterprise could stimulate valuable insights into the contemporary and future development of ICTs, and by extension, into the role of community networks in this process.

On a different line of thought, the nineteenth century stations were considered and accordingly built, as monumental gates of the city toward foreign destinations and exotic worlds. They became a model for other cities to develop their own representative gates opening onto the world, as the successful trend of railway transport was spreading throughout Europe. Even more, a pan-European rail network was imagined as the materialization of a fraternity dream, in the most idealistic views. Certainly once these modern structures were in place, along with the provided services, they promoted an emerging lifestyle for the modern society, and novel ways of seeing and understanding the immediate reality but also in faraway places, Sauget (2009). After the Second World War, however, the advent of the automobile in the western world placed the railways on a second position as important for transport development. Until the beginning of the 1970s, the global trend of investments' concentration in oil and car industries declined the image of trains, and competing transport modes made their mark on the rail stations. The 1974 oil crisis among other factors boosted the electric public transportation once again, generating a renewed interest in the rail development through integrated transport networks coordinated with spatial development, transforming the rail 'stations' into 'nodes' and 'hubs' of complex transportation systems, including metropolitan and regional trains.

But let us return to the inauguration of railways in the 1840s. The 1830s-1840s British railway mania, see Odlyzko (2011), generated railway network development throughout the European continent. Probably its most celebrated spatial manifestation took place in Paris, the modern capital of the nineteenth century, Harvey (2004), through the development of six major rail stations in full function to present days. As the French capital took the British model of market driven development, a business principle of fairness is what may explain the large number of Parisian stations. The reasoning was to give the opportunity to various marketplace actors to participate in the railway adventure. Hence only Gare de l'est (initially named Gare de Strasbourg) was a French enterprise of state interest, and private companies developed five of the Paris main rail lines and stations namely Saint-Lazare, d'Orleans, du Nord, de Lyon and Montparnasse (initially named Gare du Maine).

A different approach than in Paris, and at a different scale, is the case of Zurich, where a first rail company

Basel-Zurich was founded by the English engineer John Locke, see Stutz (2005), p.4, and the first rail station was inaugurated in 1847 on the Spanisch-Broetli Bahn, leading north into Baden along the Limmat Valley. The terminus place was chosen on the available land north of Zurich's old town at the confluence between the Limmat and the Sihl Rivers, and within less than two decades the city developed around the station. Until today the centrality of the Zurich main railway station is one of the main assets of the Swiss public transport system, and its location was defended despite costly technical requirements for expansion. Although being the largest transportation node, through its main railway station passing daily travelers in large numbers as large as the number of city's inhabitants, Zurich has never concentrated the centrality that Paris has gained also through railway development. That may be explained through different territorial politics, on the Swiss territory creating polycentric and more distributed networks.

In a theoretical essay including detailed historical information, Sauget (2009) reflects upon the Parisian train stations as laboratories of modernity. On the one hand they have contributed to the definition of the national space and to establishing the centrality of the city of Paris. On the other hand, railway stations have been the laboratory of experimenting with dynamic boundaries between the private realm (e.g., the development and operating companies), and the public realm of the city or the state, where power conflicts have stimulated action from developing appropriate legislation and policies, to a large array of services and competences.

By way of analogy, rail stations satisfy some of the functionality that servers or network nodes fulfill in the ICT networks; they host travelers and provide specific services related (more or less) to transportation, they control and efficiently distribute traffic (e.g., of persons, of goods, of trains and other transport means). Similarly computing servers or network nodes host data, share data and resources, and distribute work. For instance, access nodes (Wireless Fidelity (WiFi)) are important for the accessibility of the ICT network, and the network connectivity depends on the technical specifications of a central node, including its location and so forth. Needless to say, the ownership and control of these nodes are critical for the network operation.

To further stimulate the imagination with respect to network nodes within the ICT infrastructure, the following narrative presents an example of how the development of Parisian rail stations has influenced not only the technical systems and the economy of transports, but also the political economy of territory. At the time of conceiving the railway stations' projects, the urban structure of Paris was undergoing significant transformations. Louis-Napoleon Bonaparte, future Napoleon III, designated Baron Haussmann as the Seine Prefect to be responsible for redevelopment of the medieval city into today's modern metropolis. Thus Haussmann became one of the key players in the development of rail stations in Paris, having to coordinate local and global pressures associated with such large infrastructure enterprises.

The development pressures of divergent interests in these complex projects led to intensive public debates, and professional studies and argumentation. For instance, Bowie. (1999) presents an extensive study regarding the relationships between the actors engaged in the development process. Among the interesting outcomes of these debates was the location in pairs of four of the main stations that are Gare de l'est in the proximity of Gare du nord, and Gare d'Austerlitz (initially named Gare d'Orleans) across the Seine River from Gare de Lyon. One reason for that decision was certainly the availability of land, as both development sites are located in the outskirts of the historic town, on large plots of land existing on flat terrain. But mostly the locations generated an extensive debate between the specialists of the time, which were engineers of the Public Works administration, or of the Ecole des Ponts et Chaussée. An important element brought about in the arguments were the relationships that the rail lines were going to establish with the larger region, with the existing and future economic activities due to proximity to waterways etc.

Similarly, when network infrastructure becomes locally owned and managed, the idea that servers can become an integral part of the urban fabric can be intriguing. Imagining "digital stations" in the city where the digital and the physical meet in a specific location makes more and more sense. Even if the actual servers are not located in the exact same physical space, e.g., for reasons of security or energy efficiency, urban nodes can be designed to provide interfaces to digital worlds overlaying the city, and engage people in their design and governance.

Most importantly, during this period of time, the railway environment in France had improved through the 1842 Railway Law that regulated the development and operation of rail infrastructure, and specified the relationship between the State and the private companies. In 1846 Gare du nord became the Paris destination of the Chemin de fer du nord, which was privately owned by various English and French actors controlled by the Rothschild Group. The station was going to be reconstructed twice during the next two decades, in order to adapt to the increasing rail traffic. During the crisis of the 1840s, and the following revolutionary years (1848-1849), the Chemin de fer du nord particularly benefited of global capital, while the other companies were impacted heavily. Gare de Lyon was inaugurated in 1847 of the Compagnie Paris-Lyon-Méditerranée (PLM), and Gare de l'est in 1849 on the French Compagnie du Chemin de Fer de Paris à Strasbourg, which will become Compagnie des chemins de fer de l'est. At the turn of the century, Gare de Lyon was rebuilt for the 1900 World Exposition, when it acquired a new image, and as a welcoming message to northern passengers having a clock tower inspired from the Houses of Parliament in London.

The proposal to locate Gare Saint-Lazare near the Church of Madeleine generated a series of petitions, initiated by a small group of aristocrats residing in the neighborhood, who feared that the new station might devalue their real estate; see Sauget (2009). Petitions against pollution gathered as much as 17.000 signatures in 1890, being early examples of citizen organization to stop urban development. These moments are significant in re-establishing the relationships between various actors, in ways that many voices can be heard and have access to decision making processes, and in structuring over time a vital civil society.

On a similar line, while discussing the Berlin encounter (see Sec. 4.2), it was noted that in the past there have been objections to collaborations between urban and digital activists related to perceived health risks and environmental pollution associated with wireless transmissions. Certainly the continuous striving for the right to difference and to centrality surfaces in conflicts and power struggles within the process of networks development, materializing as outcomes mediated through negotiations and conflict resolutions.

If the development policies frame the infrastructure networks as public goods, may they be railways or digital networks, one may analyse at various moments in the process the provision of fundamental rights, as proposed by Antoniadis and Apostol (2014), namely access, ownership, participation, and representation. The following sections briefly discuss options for governance that may, or may not, provide for these rights, shifting from this historic perspective into a pragmatic approach of present times.

3.2. The Partner State

At present among the actors involved in development processes, besides the state and the market are also grassroots groups, members and organizations of the civil society. For strategic infrastructures like the railway networks, the state has played a strong role in their conception, construction and operation, building partnerships with powerful private developers. More recently, however, there are attempts to transform the governance model, at least at the level of train stations, engaging a large array of actors responsible for delivery of products and services from engineering and business, to provision of cultural, residential, and even amenities and public space facilities.

Since 2009 the French railways SNCF have a special department by the name 'Gares & Connexions' that is in charge with the development of the rail stations for travelers, as "city boosters", while ensuring of course the quality of transportation services. Digital technology is employed to improve the travel experience, and also citizens are engaged in various participatory events, taking into consideration the value of rail nodes as spaces for public life. Moreover, in a true understanding of the value of diversity, local communities and actors from various domains of activity are implied in creating the railway stations as collaborative buildings that open themselves toward the city.[1]

Moreover, the Rail Hub concept states,

[1] Available online at https://www.gares-sncf.com/fr.

> "*The extension of the "Station" into the "Hub" concept reaffirms the station, its surroundings and its multi-modal connections as a major civic asset. Conversely civic society has traditionally had very limited possibility to have a say in station development and organisation – a strategic matter, a question of technical infrastructure, a development led (finance, real estate, private or railway investment...) project. Ulm has shown that this no longer needs to be the case and the experience of Stuttgart [see the following Note] perhaps testifies that this must not be the case.*"

In the last years in Stuttgart, there was an unprecedented citizen protest against the Stuttgart 21 rail project. As the related note reads, "Intense citizen protest against the Stuttgart 21 mega station project (50,000 people on the street in September 2010) forced a referendum in the Landtag Baden-Wurttemburg in 2011 – critical consequences at national level, in political terms and major impact on budget and timing" (Railway Hubs: Changing track in stakeholder engagement, URBACT 2015).

In the current state of political life in western democracies, grassroots groups are playing a critical role in shifting the political narrative to a political economy of cooperation, to an economics of solidarity and shared benefit, to a commons-based economy and society. See, e.g., Bauwens and Kostakis (2014); Bollier and Helfrich (2015); Restakis (2015). When public authorities namely the state sustain the direct creation of social value by civil society (commonstransition.org), Kostakis (2011) and Bauwens and Kostakis (2014) propose the concept of the 'partner state'. The concept was first introduced by Orsi (2005, 2009) in building an argument toward 'the moral legitimation of an alternative societal vision'. The concept is further developed to mean the state that 'enables autonomous social production', and that 'embraces win-win sustainable models for both civil society and market'; see also Bauwens and Kostakis (2014).

3.3. Collective actors in city development

The partner state may enable a multitude of manifestations in a commons-based society affirming differences, by devising policies that respond to citizens' ongoing struggle for this right. In the Differentialist Manifesto, Henri Lefebvre (1970) draws attention to a world of difference, which is capable to provide the necessary openness for imagining and acting for new possible spatialities, as alternative to a closed world that the capitalist society is generating. It is extraordinary that there are initiatives in all domains of social value creation, even for strategic infrastructure development like in the case of railway stations (e.g., SNCF Gares et Connexions, Rail Hub) and other examples of grassroots infrastructure networks including the community networks (e.g. Guifi.net; Freifunk.net; sarantaporo.gr etc).

In the end, the process of urbanization may be shaped through policies that value and support diversity, acknowledging that "the city is where social differences collide and become productive"(Schmid 2006, p.172), and striving for an ideal of city life "as an openness to unassimilated otherness", Young (1990), p. 227. In the domain of housing, everyday life and social infrastructure provision, this possible world of difference comes into being, for example, within the cooperative housing and living movement in Zurich. In this pragmatic approach, future visions for urban living become reality through spatial development shaped by a diversity of actors that may act on behalf of various political spheres such as public authorities, market, media, community groups and various civil society bodies.

Like the community networks in the current telecom market, the associations and cooperatives within the process of housing development in Zurich are collective actors that provide different options in the real estate market. They are active in constructing new forms of sustainable living in the city, also in partnership with the state. During more than a century of experience with this form of housing, necessary structures have been put in place, from supporting banking and legal frameworks to a culture of participatory practices engaging lay citizens in complicated decision-making processes. Certainly the Swiss direct democracy plays an important role in the success of these practices. Note that the housing cooperatives are first an association of people, an active collective in the development process, outnumbering those who dwell in the residential buildings. Being member of these associations is an individual's political choice to support housing and living projects for the

common good. Even more, the L200 space was created in the spirit of the movement on cooperative housing and living, in partnership with the state (i.e., the City of Zurich) and being run as a collective. Out of this experience a set of guidelines is formulated to serve as potential structure for future initiatives.

Furthermore, if the spatial hybridity of our environments would be incorporated in the reasoning of the development process, community networks may become a part of the discourse on, and action toward, advancing the cooperative housing model, in all aspects of ICT technology: infrastructure (hardware), service (software) and information (data). In this context, the L200 space, brings the idea of grassroots digital technologies hosted in specialized urban spaces as a driver for a truly smart city, meaning that its citizens are engaged in the civic life as active participants. This argument was key for NetHood and other partner organizations to be offered access to such a central location, in the competition for tenants of the City of Zurich.

Of course, there are many possibilities for cooperation between digital technology and various forms of spatial development, and the next sections are elaborating on two initiatives of NetHood Zurich that began during the course of the netCommons project.

3.4. Hybrid nodes for social life

As argued so far in this section, train stations are important nodes not only of transportation, controlling and distributing traffic efficiently, but also as gathering places of travelers and passers-by. They are gateways toward other destinations, both close and far, and thus they become hubs that bring in the same location a diverse mix of citizens and visitors, offering opportunities for people watching, for bringing strangers in contact, for encounters and exchanges.

And in a similar manner, the digital nodes, a digital platform or server, become gateways toward other worlds. As they do not require the physical presence of people at the location where the infrastructure lies, most of the time the opposite situation holds, and such servers that form the so called “cloud” are typically located miles away from those concerned. Note however, from the analogy with rail stations, that the location of nodes is an important decision in the development of the territory, and currently there are very few players in the global distribution, control and ownership of digital infrastructure.

Imagine that these physical and digital nodes would be conceived in the framework generated by the hybrid condition of space. Then the design and spatial development would imply the coordination of digital infrastructure and software with the design of physical space, within the particular conditions given by the political economy of localities. For that the actors engaged in the various disciplines and related professional fields, and activist movements need to get in touch (refer to Chapter 4) and devise strategies to cooperate, starting simply from finding appropriate communication means and shared vocabularies. Then over time the cooperation space created could facilitate more elaborate exchanges, involving also citizens and local community groups, toward organizing collective action to develop truly hybrid nodes for social life. An initiative in that direction is the L200 space in Zurich, presented in Chapter 5.

4. Encounters in the hybrid city

Participatory processes need opportunities for practice of communication and gatherings among various actors, to become aware of similarities and differences, develop shared vocabularies and exercise deliberative practices. 'Encounters in the hybrid city' accounts for an ongoing series of events that started in March 2018, initiating encounters between different activists claiming the rights of citizens in the digital and physical domains. They have much to learn from each other's practices, challenges, and expertise, but also can support each other's agenda through various forms of collaboration.

Toward its objective to bring together urban and digital researchers and activists, the netCommons project collaborated with the MAZI project, which involves already two key organizations who are active on the right to the city, namely the INURA network and the Common Grounds at Berlin's Prinzessinnengarten. NetHood being a partner also in the MAZI project took advantage of its close cooperation with these two partners in different ways. One of them was the organization of a series of gatherings, or "encounters in the hybrid city" as branded later, that bring together people from the digital and urban rights movements in an informal and playful way. [1]

More specifically, three encounters took place in the context of this task. One event during the CommonsFest in March 2018[2], at the Parko Georgiadi in Heraklion, included a three-hours session in the park. There the digital and other commoners interacted with the park's "tribes" around a demo installation of a local network featuring the "Interview archive" app developed in the context of MAZI's Berlin pilot in Prinzessinnengarten. A second event was organized during the Battle of the mesh, in May 2018 at the C-Base and in the Prinzessinnengarten in Berlin, where digital and urban activists came together for longer than four hours, recently some of the local activists being involved in actions against the moving of Google offices in Berlin's Kreuzberg neighbourhood. The third one was a three-hour event in L200 neighborhood node in Zurich, after the end of the MAZI pilot workshop at the end of May 2018. Many urban researchers and activists from the INURA network were present, and engaged in vibrant conversations about analogies and synergies between cooperative housing and community networks.

During these encounters there was no other agenda but to raise awareness between digital and urban activists, to inform each other about related challenges, tactics, and lessons learned. The format varies depending on the context and the available resources and time. Let us present them in the following in more detail.

4.1. Heraklion Encounter

The first "encounter in the hybrid city" was organized in Heraklion, Greece, on March 31, 2018, in the context of the CommonsFest, which is a nation-wide festival on the commons. It was co-organized by NetHood with the support of MAZI and netCommons[3]. The encounter took place on the side of the main festival, at the Parko Georgiadi, the only big size park of Heraklion that is used by many people and various groups at different moments of the day. Local organizations and individuals united under the label "The tribes of the park" are claiming their right to co-create this vital space of their city.

In the last few years the municipality has been trying to impose the reconversion of the park, without fostering any consultation or form of participatory process with the citizens. Also, no concrete plan about its future

[1] See https://netcommons.eu/?q=content/encounters-hybrid-city.
[2] https://fest.commons.gr/el/2018/.
[3] https://fest.commons.gr/el/2018/chorigoi-ekdilosis/

use was ever announced officially. Surveying among the local inhabitants, no one really knows what the municipality wants to do with the park. The accounts of locals vary, as if they were reproducing a rumour or a myth: "They want to cut off all the trees, to allow for cafeterias to be built", or "They had agreed with a private company to build a parking lot". As one would expect, the municipality enjoys zero credibility with many of its citizens.

The 2018 CommonsFest[4] brought to Heraklion commoners from all over Greece, and especially from the field of digital commons, since the festival was organized by a recent alliance of more than ten organizations among the most active in the area of digital commons, including the Sarantaporo.gr CN, the CommonsLab, the P2P Lab, the OpenLab, and more. The local organizers who are also engaged members of 'the Tribes' invited Panayotis Antoniadis to do a demo installation of a MAZI Zone [5] in the park, in the form of an informal workshop, bringing some interesting similarities with the Berlin's Prinzessinnengarten.[6]

Figure 4.1: Heraklion Encounter: Explaining the concept of a local network to the members of the "tribes of the park" initiative together with participants in the digital commons workshop.

More specifically, on the second day of the Commonsfest, during a session in the park, the digital and other commoners interacted with the park's 'tribespeople', creating and discussing hybridity. Several people stopped and asked how the local network works and what purpose it serves. Panayotis Antoniadis and the other commoners were happy to discuss how a local network could be useful for the life in the park and to address all issues raised, some of which were controversial, like the danger of being even here, in the park, absorbed in our devices instead of enjoying the opportunity for a face-to-face contact or the park itself. Interestingly, like in Berlin Prinzessinnengarten, people were excited with the idea to offer a WiFi network that is not connected to the Internet.

The most notable engagement was by Michail K., a teenage amateur photographer, who was present throughout

[4] http://fest.commons.gr/el/2018

[5] http://www.mazizone.eu/toolkit_guidelines/

[6] See https://fest.commons.gr/2018/ergastirio-nethood-mazi-diamorfosi-kai-egkatastasi-aytonomoy-psifiakoy-diktyoy-sto-parko/.

the entire workshop, learning how to set up a local network, uploading on the local NextCloud folder (very good quality) photos that he took, performing interviews with MAZI toolkit's Interview Archive app and eventually acquiring a Raspberry Pi that his enthusiasm had rightfully earned him.

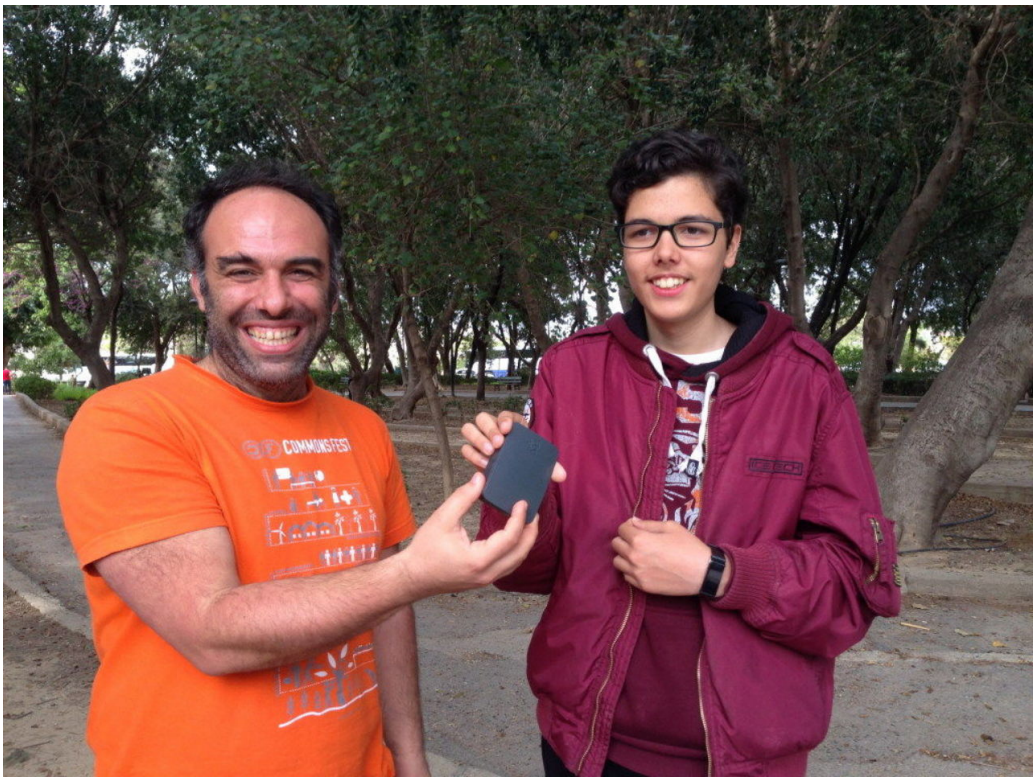

Figure 4.2: Michail K., the youngest member of the 'tribes of the park' got very interested in the concept of a local network and uploaded numerous photos on the local nextcloud folder.

On that sunny Saturday afternoon the park was full of life. At the same time that the informal workshop was taking place, the 'Integrated Cooperative of Heraklion'[7] was hosting its weekly market where faircoin is used in a local exchange network. Local bio producers had set up their stalls to display their wares while a soup kitchen working on a free donation basis was satisfying everyone's hunger. To complete the festive atmosphere a shadow puppet show was held in a tent just a few meters away from the workshop. Children's laughter and the occasional dog peeking curiously into the tent together with participants' genuine interest made the workshop a very enjoyable experience.

Hopefully the MAZI Zone can prove useful for the tribes' goals, contributing another parallel, overlapping, hybrid space of action. The next day, at the official part of the conference, Panayotis Antoniadis invited Michail K. to present the initiative at the CommonsFest, as a more "official" encounter, for which he prepared a short but concise speech on the activity and role of the 'tribes' at the Parko Georgiadi. He finished saying "They thought we would get tired and go away eventually, allowing them to move forward with their plans, but we are still here. We keep the park alive."

Impact: Through this encounter many interesting links were created between local digital commons groups and urbanists like the CommonSpace initiative based in Athens and various municipalities in the Greek provinces of Crete and Attica. These initial contacts and declaration of interest for collaboration have not materialized to a concrete project yet, but the seeds are placed and NetHood being part of the digital commons alliance will be following closely future activities in this context.

[7] https://heraklion.cooperativas.gr/en

Figure 4.3: Michail K. was invited to participate in the public part of the "CommonsFest" conference

4.2. Berlin Encounter

On May 13, 2018 took place in Berlin the second hybrid city encounter in the context of the 'battle of the mesh', a major event in the Community Networks scene returning in 2018 to the famous C-base, one of the CN scene's birthplace back in the early 2000s.[8]

The Prinzessinnengarten is ten-minutes walk from C-base. It is a key location for the right to the city movement in Berlin, and hosts in a very central node of the city a wide variety of activities and organizations. Its wooden structure "die Laube" is both a symbol and a visible functional space for hosting events and workshops on various topics related to the right to the city movement. Moreover, die Laube is the base of the MAZI project's pilot run by the UdK's Design Research Lab and by the Common Grounds and the Neighbourhood Academy. This made much easier an otherwise very challenging task: to bring urban activists at the C-base and digital activists to the Prinzessinnengarten. Interestingly many of the local actors in these two "activist hubs" have not visited the "other" one.

Compared to our first small-scale and to a large extent improvised encounter at Heraklion, the one in Berlin had the potential of being a really impactful event, both in terms of ideas generated during the encounter but also in terms of future collaboration. The presence of the CN community in such an important location for the CN movement, and close to an equally important location for the right to the city movement in Berlin, was very promising. In the following we present in detail the interaction that took place during this encounter, since many interesting issues were raised that could help to structure future collaborations and similar events organized by us or others.

The encounter started at the C-base, at the end of a week long 'battle of the mesh' full of events, discussions, and tests. Sunday being the last day the number of people present at the C-base was significantly smaller than the previous days. Only one technical presentation was scheduled for that day, after which the invited guests

[8] See https://www.wireless-meshup.org/doku.php#schedule.

from the local urban activism scene, around then, entered the main room of C-base.

Panayotis Antoniadis introduced this non-conventional workshop with two provocations, one for each side: Urban activists will not be able to defend our rights to the city if they don't include in their claims the right to the digital infrastructures Digital activists will end up offering just cheap labour for providing affordable access to the Internet, and more specifically to Facebook, Google, and the like, if they do not address locality in their narrative and do not integrate their efforts with the wider right to the city movement.

A circle was formed in the center of the room, which was joined only by few of the "locals", the rest staying outside the circle observing the round of introductions. Many interesting urban initiatives were represented like Nachbarschaftsakademie[9], Stadt von Unten[10], MetroZones[11], Mietshaeuserssyndikat[12], Tesserae[13], INURA Berlin[14], Bizim Kiez[15], Tempelhof Vision[16], and more. In the beginning it felt like a foreign body entered the C-base and started talking between themselves, including statements by all participants allowing to get to know better each other (e.g., What is the battle of the mesh? What is the prinzessinnengarten? What are the current challenges/tactics of urban and digital activists?).

Figure 4.4: Members of the MetroZones center for urban affairs explain their strong interest in the digital during the first roundtable formed in C-base

After the end of the 'inner' circle in which only a few digital networking projects were introduced, like Freifunk, La quadrature du Net, and hackerspace Athens, the debate started quickly with many people questioning the dichotomy created by the description of the event, separating the digital with the physical space, and indeed the

[9] http://www.nachbarschaftsakademie.org/en/about/
[10] https://stadtvonunten.de/
[11] http://metrozones.info
[12] https://www.syndikat.org/en/
[13] http://tesserae.eu
[14] http://inura.org
[15] https://www.bizim-kiez.de/en/
[16] http://thf.vision/en/

digital with the urban activists. Jochen from MetroZones gave as example collaborations taken place already from the 1990s Botschaft, Bar + Disco. And Katrin proposed that looking at past experiences would help to understand how the movement could be strengthened.

Panayotis defended this framing stressing that the only reason for making a distinction between these "inseparable" today spaces (refer to the introductory section of this document) is that in reality many people actually don't reflect upon their close interrelation, and most importantly, upon the many inspiring analogies and potential complementarities and synergies.

This clarifying intervention broke the ice and people out of the circle started participating and sharing their experiences and possible tactics to defend our rights to the hybrid city. For example, the Mietshaeuser Syndikat is an interesting case study of using existing institutions and laws to create alternatives like various forms of non-speculative, affordable housing, and more specifically to take housing stock "out of the market". On the technology side, the important role of a "playing" attitude was highlighted by Adam Burns, the Free2Air's founder, and netCommons advisor. Adam also highlighted that community is a tricky word and thus it is critical to keep experimenting.

From a policy perspective, Virginie from netCommons and La Quadrature du Net highlighted the need to participate also in policy and regulation activities at the EU level but also the national and global. There are many important constraints or openings that could be created by bad or good legislations, respectively. European programs like URBACT (note that this is the program within which also the Railway Hubs are proposed), and netCommons can also play a positive role bringing together different actors.

Then the project genuino clandestino[17] in Bologna, was given as an example of successful synergies between different forms of resistance, including mesh networking, and also between content, organization and communication within the movement. And the situation in Greece was discussed as an example on how the economic and other crises could become also drivers for resistance and offer opportunities, like the abundance of empty spaces in the city of Athens.

Mary Dellenbaugh-Losse, co-author of "Urban Commons: Moving beyond State and Market", highlighted the concept of the commons as the 3rd way between the state and the market. She identified as one of the most important finding of hers and others' research the fact that, in most cases, it is a core group of twenty or even less people running most commons-based initiatives, which are highly dependent on them.

At this point the key role of infrastructure as an important common aspect of both domain of action, digital and urban, was identified. Interestingly, the idea of the "infinite" digital or "virtual" space was contested as artificial since the energy limitations are important constraint for the digital space that shouldn't be underestimated.[18]

Actually, many of the urban activists have been recently involved in actions against the moving of Google offices in Berlin's Kreuzberg neighbourhood, "consuming the neighborhood collective product" as someone noted. A very telling manifestation of how the digital and urban rights become more and more interrelated. But what is the alternative to Google someone asked? How can one compete in terms of usability and economies of scale?

Monic Meisel, co-founder of Freifunk and an advocate for local applications in CNs since the early days, admitted that engaging people in using such local applications has proved extremely hard. The examples of austici and framasoft, the french approach for the "dégooglisation of the Internet", creating server coops collectively (self-)managed, but also the MAZI toolkit, were brought as good examples on how technology can help to reduce the barriers to entry.

Thiago Novaes, a legal scholar focusing on spectrum policies, brought the experience from the Amazon, explaining how communities manage to build their own networks with very little resources, and highlighting the fact that it is the process that it is the most important and not the final outcome, the infrastructure itself.

[17] http://genuinoclandestino.it/

[18] Along these lines, see also JoPP article on the Tupello collective in Genoa: http://peerproduction.net/issues/issue-11-city/experimental-format/the-tapullo-collective-genoa/.

Figure 4.5: Thiago Novaes working on regulation issues in Brazil, one of the few social scientists attending the battle of the mesh, highlighting the importance of the process of building a CN.

This part of the discussion was concluded by Ileana from NetHood, proposing to collectively develop and promote a broader perspective on sustainability, through various initiatives and projects, affirming differences and creating a diversity of choices for the livability of the urban system.

The discussion then moved to some ethical dilemmas that activists might face in their effort to engage people in their actions. For example, the use of aggressive advertisement tactics was discussed, with some being in favour seeing it as an only way to compete for attention with the big corporations. Others were against, considering that such tactics are not compatible with the values and principles of the movements. Even more controversial was the proposal to use local networks as a means to block access to Facebook and Google. This seemed to be a very sensitive topic for the digital activists that led to a heated discussion about the meaning of Internet freedom, and whether those that jeopardise this freedom should be actively excluded from alternative infrastructures.

After this introductory round, we all walked together toward the Prinzessinnengarten in small groups, some of them already "mixed", engaging in more informal discussions. For most of the digital activists it was the first time to visit the Prinzessinnengarten and they were offered a guided tour when we arrived. It was interesting to know that one of the principles of the garden is to allow easy access to experimentation by making it "easy" to make mistakes and thus learn, which is one of the main principles of hacking. The need for compromises was also brought to the fore, with the description of the necessary commercial activities developed in the garden that subsidize non-profit projects like the Neighbourhood Academy.

During the reception that followed at the wooden construction "Die Laube", more mixed groups were formed and interesting discussions took place. For example, some urban activists were impressed by the resistance of digital activists to the temptation of "blocking google" from their local networks, something not so obvious in political movements in which the exclusion of "racism", "violence", etc is typically tolerated as a defense mechanism.

Figure 4.6: Elizabeth Calderón Lüning, from Neighbourhood Academy, offers a guided tour of the Prinzessinnengarten to the participants of the battle of the mesh.

The pervasiveness of the internet and the rights of some groups to remain disconnected, if they wish so, was also brought to the discussion. The resolution was that the strong will of some of the activists to keep trying and connect the disconnected should be accompanied by instilling values and raising awareness on issues like privacy and data manipulation.

Impact: The overall feeling after the Berlin encounter was very positive and inspiring. Only a few months after this gathering, some synergies have already started to materialize, like the invitation of some of the Community Networkers to participate in an upcoming big event in Berlin, including two very relevant events bringing together the digital and the urban dimension organized by the Neighbourhood Academy[19] and Metrozones[20].

4.3. Zurich Encounter

In May 23-25 the MAZI Zurich pilot workshop was organized by NetHood and INURA Zurich Institute, a three day event including guided tours and discussions in different cooperative housing projects in the city of Zurich. The last session of this workshop was organized by the netCommons project, framed as an "encounter" between the local and international urban researchers and activists present in the MAZI workshop. It included two special guests from the digital activism movement in Zurich, and of course the digital activists that are part of the MAZI project, like James Stevens from SPC[21].

It was not easy to engage local actors in such a workshop. Internet connectivity is a non-issue in Switzerland, and especially in Zurich with many people not even having wired connectivity at home, using the cheap rates for 4G connectivity. And since Community Networks are mostly perceived as collective ways to offer affordable or

[19] https://berlin.urbanize.at/veranstaltungen/munizipalistischer-tech-urbanismus/
[20] https://berlin.urbanize.at/veranstaltungen/under-the-platform/
[21] http://spc.org

free Internet connectivity, there is not any active Community Network in Zurich. Only a few Freifunk nodes can be found on the extended Freifunk's map. With a few exceptions, these nodes are run and maintained mostly due to its political vision, e.g., net neutrality and privacy, rather than serving the needs of the disconnected.

We were lucky to have in the room one of these exceptions, Lukas Zeller who has been active in both the cooperative housing movement since the early days, and is a dedicated follower of the community networks movement and other digital activism trajectories. He has even installed a Freifunk node on top of his own working cooperative, Gleis70; it was once used to connect to the Internet a nearby settlement for asylum seekers. As he verified later, Switzerland is too connected for people to be interested in such approaches beyond isolated cases.

Our second guest came from the academia, Marcel Waldvogel, a Computer Science Professor at the University of Konstanz, who works on decentralized infrastructures and self-hosted services (focusing on security) but is also engaged in various digital initiatives like the Digitale Gesellschaft [22] and ISOC-CH[23].

On the other hand, in the very strong cooperative housing movement in Switzerland, main principles of commoning are very well known and part of the national identity. This means that people engaged in such projects understand well the key principles promoted by netCommons, but because of their own struggles and challenges have limited time to invest in yet another area of commoning. Unfortunately members of two underdevelopment, so called 'young' cooperative housing projects, could not attend, but are in contact with the follow-up efforts as described at the end of this section, being interested in integrating in the cooperative housing model, the sharing of networking infrastructure and services.

The encounter started with a short introduction by Panayotis Antoniadis, a summary of his recent book chapter on the organic Internet, Antoniadis (2018), which was first published in German in a book called "Die andere Stadt" (The different city"), Antoniadis (2017). This book was edited by one of the key actors of the 'young' cooperative housing movement in Zurich, Hans Widmer (aka P.M. the author of "bolo bolo", P.M. (1983), who inspired a series of 'young' cooperative housing projects focusing on democratic participation, communal life, and ecological lifestyles). This chapter includes a section describing a speculative scenario including CN principles as part of one of the most recent cooperative housing projects, NeNa1; see Antoniadis (2018), pp. 265-268. Being part of such a prestigious publication, it was an extra reason for the local actors in the cooperative housing movement to engage in the discussion.

Being at L200, a new space, Panayotis Antoniadis finished his introduction by stressing the importance of the physical location where local networks are installed. "Visiting" a web site of a place by literally visiting the place itself, and the use of such places for developing the narrative of the right to the hybrid city.

The format chosen for the actual 'encounter' was different than the one in Berlin, because of the increased diversity (and number) of the participants. We decided to simply have a slow round of introductions, and statements on the topic by all participants. The objective was not to produce concrete solutions but to allow people from very different perspectives to come in contact with each other's practices and ideas, and create the appetite for more interactions in the future.

In the specific mix of people and corresponding initiatives there was only one example of cooperative housing projects that share Internet access between their members. The co-working cooperative where Lukas Zeller is active, Gleis 70, has a single Internet connection serving the entire building (with more than 50 co-working spaces). The Internet connection service is provided by Init7, a local ISPs well-known for its sensitivity to issues like net neutrality and privacy. Lukas Zeller commented that this arrangement with Init7 allows for a more efficient use of networking resources but also allows for easy sharing of other infrastructure such as printers.

James Stevens brought the historical perspective through his experience in the early days of Community Networks, but also the artistic one laying on the table the map of his neighbourhood in London, Deptford. This interpretative map created by local artists, the Minesweeper Collective, showcases the local networks run by

[22] https://www.digitale-gesellschaft.ch/
[23] http://isoc.ch

Figure 4.7: Panayotis Antoniadis introduces the projects netCommons and MAZI, mostly for the local special guests who joined only for the netCommons "encounter" part of the workshop.

SPC and other local social as well as technological networks. A note was taken to explore possible analogies with the histories of cooperative housing in different countries.

Mark Gaved remembered as he said that he actually did his PhD, Gaved (2011), exactly on this combination between cooperative housing and community networks, for which James Stevens was one of the key actors. He mentioned the issue of maintenance — the importance of people, back row actors, who help keep an initiative alive. They maintain it and make it grow.

Ingi Helgason and Michael Smyth brought up the human computer (in this case network) interface and the need to create design elements that can communicate the type and characteristics of a local network to its potential users.

Marcel Waldvogel started with a provocative statement. That he is part of the biggest community network in the world (with over one million users) that no one else outside this community really knows of, the eduroam academic network. This example was used to make the point that community networks are defined by their borders and security; a key technological dimension to this respect, for which Marcel gave some examples of his recent research as a professor at the University of Konstanz. He talked also about visibility and about keeping a community open to outsiders, and also noted that people might not want too much technology. On this note, the young members of the cooperative housing projects in Slovenia and Croatia brought up the dimension of aversion to technology, questioning the utility of local offline networks, a typical reaction of those getting exposed for the first time to the possibility of DIY (offline) networking.

Panayotis Antoniadis replied that the strong presence of the MAZI project gave more importance to this case study, which we could see mostly as a "provocation". In reality there is a wide spectrum between the isolated offline networks and the centralized clouds. A typical example of a cooperative network would be, in addition to Internet sharing, the local hosting of online services (e.g., the website or data cloud for the members of a cooperative), or even a network of cooperatives. Again, identity management plays a key role.

Figure 4.8: Partners of the MAZI project, urban activists of the INURA network, and local actors in the cooperative housing and/or community networks scene discuss different options for synergies.

Ileana Apostol proposed that the different network layers (hardware, software, data) could profit from the analogy with the urban layers of infrastructure, services, and information, remembering that at an ISOC-CH workshop which took place in Bern[24], all these layers were discussed in parallel in the context of encryption.

Alexandros Papageorgiou made a provocative statement referring to the 'fight' of technologists with social anthropologists over who understands and interprets social reality better. He also proposed to consider Community Networks and similar technologies as media for technological and political education. DIY and the 'fall of expertise', emancipation / empowerment versus devaluing expert knowledge was mentioned as something to reflect upon.

Lauren Lapidge, a member of the ExarcheiaNet Community Network in Athens, highlighted that for some people, like the refugees, Internet is a vital resource. She also said that she finds crazy that inside housing coops people have individual connections, and Lukas Zeller explained that there are legal reasons behind.

Katalin Hausel experienced in recent workshops in which she participated that storytelling is very powerful for engaging people with the idea, for example placing Community Networks in a historical context, part of a long struggle for the right to the Internet, with which people can sympathise.

Jens Martignoni brought to the table another analogy, between Community Networks and community currencies, developed in detail in the context of the netCommons project. He mentioned how people react to the extra costs and inconveniences posed by local currencies, failing to see the global picture.

Panayotis Antoniadis wrapped-up the discussion with an idea that could bring many of the perspectives together: the development of a "networking infrastructure and services template" for cooperative housing projects. That is, a complete solution for this type of projects that will make easier the understanding of the offered services and their adoption. This brought back many of the challenges and trade-offs discussed during the previous days such as expectations from researchers developed by the neighbourhood association in Athens, the limits of DIY networking proposed by the MAZI toolkit, and more.

The resolution of the group was that we need advanced "pre-packaged" solutions to be able to bring closer together activists and practitioners from different domains, but make them easy to "unpack", explore, and discover on the way. Channels of communication and exchange should be established among researchers, activists and communities, maintaining a reciprocal and balanced flow of knowledge. Furthermore, the aggregation of

[24] See https://www.isoc.ch/events/vit

knowledge on a platform level could result in creating a basis for advocating broader institutional consolidation, on an EU legislative framework level.

Impact: Among other networking opportunities created through this encounter, awareness was raised regarding the many opportunities that the DIY networking technology could bring. Moreover, Warmbaechli cooperative's Internet sharing working group invited Panayotis Antoniadis to participate in their group and he introduced Marcel Waldvogel as a possible collaborator, toward the creation of a wider nationwide working group. Soon after this event, Panayotis Antoniadis was elected as a ISOC-CH board member responsible for the Social Impact working group and gave a talk at the ISOC-CH conference on human rights[25].

[25] https://www.isoc.ch/archives/3396

5. Hybrid infrastructure for the future: central space as a commons

This section explains the beginnings of the L200 project –a blueprint of developing a hybrid neighborhood node– in the form of a set of guidelines for similar initiatives. The narrative presents the evolutionary process that shaped the current state of the L200 neighborhood space. The action moments presented in the following narrative are not necessarily subsequent as they have been following linear as well as cyclical rhythms. Their presentation below suggests more of a logical hierarchy rather than a chronology, and it is important to keep it in mind while reading the next sections.

There is an integration phase of real needs with the formulation of political and design/development visions within a broader realm of possibility. This is the more **conceptual moment of the overall process**, yet derived from practical knowledge. Once the opportunity to materialize these visions appears, there is **a structuring phase of a concrete project**, called in the guidelines below as a) seizing an opportunity, b) formulating a project and c) organizing a plan for action. This is the practical moment of the process. A final phase described below in more detail is the **lived or experiential moment of the process**, with two different temporalities, one defining a temporary use, so to experiment with the possibilities in practice, and a long-term phase meant to establish a living laboratory.

5.1. Integrating real needs

One of the main challenges in collective processes is the integration of individual choices into shared decisions. However, this is a very important phase in the production of a collective project. This guideline recommends to proceed toward assembling and integrating needs in related participatory practices, which shall be inclusive, and promote active listening and decision making consent or 'no objections', Buck and Villines (2007), instead of being ambitious toward achieving consensus, to facilitate the expression of all choices.

For example in Kreis 5 district in Zurich, it became obvious through neighborhood initiatives and engagement in several collective activities, that a location was necessary to provide a shared space. There was a critical need for a collective space for gatherings of neighbors, and of active organizations in the neighborhood like the Forum 5im5i or the housing cooperative NeNa1 among many other. Also there were voices asking for a co-working space run as a collective. At the same time, in the last years the increase of prices of rental space in the neighborhood has been skyrocketing and some of the small shops had to move out of the locations where they have been in function for decades. It appeared absolutely necessary to create a coalition and to create a space of encounters, where the neighborhood entrepreneurs could gather and network. In all this complex situation, digital technology had the potential to help from networking and communication to organizing the associations and the use of time and space.

So the question became, how to materialize this shared space out of a process of integrating expressed 'real' needs? From the participatory discussions and meetings in the neighborhood, it appeared obvious that it will be shaped at the convergence between individual needs (e.g., co-working space, meeting space, networking of small shops), and collective needs (e.g., place of encounters and networking, of collective learning, of exposure of ideas and neighborhood initiatives), within a political economy of cooperation, of solidarity, and of mutual benefit.

5.2. Defining a vision in a world of possibility

Formulating a possibility for the future is a critical step in pursuing the materialization of any needs, wishes, dreams or desires; to cite the Spanish philosopher Jose Ortega y Gasset, ”All we are given is possibilities - to make of ourselves one thing or another.” Yet the domain of possibility is subject to perpetual creation, which begins in language, it is slowly formulated until it turns into action, and eventually becomes a way of living. In comparison with the previously described action of gathering and integrating real needs, most important in this case is that there are no constraints. The possibilities are infinite, leaving room for the imagination and creativity.

In the case of the L200 space, the vision in a world of possibility was formulated as creating a hybrid neighborhood node to be organized as a collective, to use its space as a commons, and to function as a stage for the neighborhood and a ‘laboratory’ for ongoing experimentation and collective learning. For that a neighborhood association was founded, and still a location was needed, where the visions of the association could become reality through everyday practice.

5.3. Seizing an opportunity

This guideline refers to the (re-)connection of the moment of integrating real needs and visions, with the practical reality by seizing the opportunity to materialize it. In this case, its materialization is in the form of shaping the neighborhood hybrid space in a central location of Zurich, as the street level floor of a building owned by the municipality was advertised for new tenants.

Within the constellation of imminent needs, conceptual plans, wishes and desires, practical reality may show that there is a relatively limited collection of suitable options. Moreover, out of the potentially suitable options, some may be more appropriate to other initiatives. Although these conditions are referred to in ’classical economics’ as limited resources with the consequence of inevitable competition, there are other models like those mentioned in the Sections 2.2 and 2.3 of this document, that may deal with the given conditions in different manners, promoting cooperation and mutual benefit.

A model proposed here is the integration of everyday life needs into collective enterprises, organized from the grassroots to structure and manifest their provision. Just like the movement of cooperative housing and living in Zurich has been responding over time to citizen choices for alternative forms of living and sustainable life in the city, similar is the case of other grassroots initiatives based on real life needs identified during long-term participatory processes. Note that a necessary condition is, the participatory practices to filter out non-suitable choices for the particular conditions, during reiterative sessions, and certainly to engage a variety of actors who find value both in the outcomes and in the action process as well. Such principles are at the basis of cooperative enterprises and solidarity economy.

5.4. Formulating a project

In the process of structuring a concrete project, the particular call for tenants of the municipality of Zurich was a chance to match the city’s need to allocate the use of that space, with the integrated needs that the association identified. Once the opportunity appeared to materialize the formulated visions, and to fulfill the imminent and more long-term needs of the association, some of its members (the initiating group) visited the available space. Then they formulated an adapted application for the L200 space, to become a hybrid neighborhood node in the digital city, a neighborhood stage for the local shops, studios, and initiatives. In the context of commodification of most of the similar spaces in the neighborhood, this is an expression of the struggle for the right to difference, and a forward looking project, proposing the creation of a hybrid space from its inception.

The municipality of Zurich acted as a partner state, as it sensed the critical value of such an enterprise in acting along city’s policies for diversity and social integration, for protection of local (small) businesses, and shaping

a digital city that favors conviviality and face-to-face encounters. Thus the application was evaluated favorably instead of a commercial use of the space, and the association was selected as the future tenant. A more concrete world of possibilities opened up for the L200 project, and a possible budget was planned.

Now having the main structure of this project written down, with clearer goals and directions for development, another phase for the association began by inviting new members to join. During numerous meetings, the project has been discussed with many of the current members, and all in all the structure of a long-term process of collective learning started to shape naturally.

5.5. Organizing a plan for action

This guideline is interrelated with the previous one, and means that the project that was initially formulated in more generic terms is transformed into a chronology of feasible actions. In the particular case of the L200 space, the potential uses have been checked against reality, and a plan for action was structured, in detail for the first month and more flexibly for the next six months. Much of the working was accomplished within the core group of initiators that include also the members of the association's board that is meeting once per week, while keeping the communication with the other members of the association through various means.

For instance, the communication with members used both digital (i.e., public website, facebook page, telegram, email, association wiki, favro and the MAZI zone installed at L200), and during face-to-face meetings, during members 'plenary' gatherings and in planned working meetings. For public communication and advertising for ongoing membership applications were used so far, besides from direct face-to-face communication, an online newsletter, distributed through the website and also through typical social networks like facebook, as well as projections in the L200 space, printed material like posters and a flyer explaining the concept, which are displayed on the windows and in the room at L200 (see Appendix C).

5.6. Defining a temporary use

A very dynamic and complex project requires a preparatory phase. In this initial phase, a six-months temporary use became critical, due to the experimental and 'cumulative' nature of the project. That means that there was not an already organized group of people who rented a new location, but the collective is being shaped while organizing also a novel use of this hybrid space. The first six months benefit of a more exploratory framing at a lower rental price. Moreover, in the difficult commercial environment in which it is placed, because of the high rental prices such an enterprise requires careful administration and coordination of activities. In the next section the complexity of the project is explained in detail.

5.7. Establishing a living lab

The L200 space[1] aims to create a hybrid urban living lab in a central neighborhood of Zurich, by responding to several local needs such as a) to meet fellow neighbors in a common space, b) to promote local shops, ateliers and initiatives, c) to network people, activities and places in both analogue and digital forms, and d) to facilitate collective learning processes on various topics.

Expectations to succeed in providing for these needs are based also on the advantage of a very central location. L200 is located at the heart of Zurich, in Kreis 5, on one of the busiest and most urbane streets of the city namely Langstrasse, which connects two districts (4 and 5) with high quality urban life. It is in close proximity to many active urban nodes including the newly built cultural center Kosmos, the Riffraff cinema, and the convivial Josefstrasse and Limmatplatz.

[1] http://langstrasse200.ch

L200 has an area of 75 sqm that may be flexibly organized for various uses throughout the day. Given its location the rent of L200 matches the market prices, which requires careful organization to maintain the non-profit character of the initiatives that are part of it, and at the same time become a truly open and diverse hybrid space. The selected approach is to take advantage of technological tools that will allow the efficient and flexible management of the space as a commons, ranging from co-working and food services during the day, to a wide variety of gatherings and events during the evenings, that are open to the creativity, needs and political demands of not only the organizations involved, but of all the residents of the neighbourhood.

Figure 5.1: The entrance of L200 at the ground floor of the building at Langstrasse 200, Zurich.

From the first days of its operation there are several types of activities already ready to bootstrap that include participatory processes (project ParLa[2], self-organized learning (project Openki.net), cooperative housing and sustainable urban living principles (project NeNa1.ch), hands-on DIY networking workshops (project MAZI-zone.eu), and more. The role of technology will be central not only for the challenging coordination needs, due to the flexible and shared use of the space, but also for building L200's identity and memory, and for encoding some key design choices at different levels, to facilitate the replication of this model in different locations.

5.7.1. L200 - a hybrid urban node

An ambition of the L200 space project is to experiment with a hybrid urban node, which is set as a dynamic urban laboratory, an urban living lab, that provides a meeting room for neighbors, a place for discussions and deliberations, as well as a stage and exhibition space for the local shops, ateliers, initiatives, and the like. Contemporary urban space has both physical and digital manifestations. By means of urban policy or even as independent initiatives, however, there are few spaces that are conceived and designed from their inception as hybrid nodes at the crossings of manifold urban networks of paths and spaces for social life, of trade, of communication, information, deliberation and social learning, etc. In the direct democracy exercised in Switzerland, L200 hybrid urban living lab represents a manifestation of the ongoing struggle for the right to difference.

In addition to the online presence of the place at `https://langstrasse200.ch` at L200, a local network is deployed (see `http://nethood.org/mazi/zones/`) and selected content is projected in the room. Through its spatial and temporal flexibility, L200 is likely to shape a new culture of neighborhood conviviality.

[2] `http://nethood.org/parla/`

Figure 5.2: An experimental display projecting content from L200's local network.

5.7.2. L200 - a central place

Several urban studies note the effect of centrality on the quality of space, e.g., Kretz and Kueng (2016), and the Kreis 5 and Langstrasse in Zurich have drawn for many years the attention of researchers for undertaking field studies here. From a rather theoretical perspective, let us note Christopher Alexander's reflections on the living system that such centers create. "At each place in the world [...] there is, at any instant, some given wholeness; that is, some definite, well defined system of centers that creates the organization of that part of the world", Alexander (2002), p. 106. He calls a "living structure," the complex structure resulting from the interaction of living centers that allows life to evolve. That is along with the differential spaces advanced by Henri Lefebvre (1970), who argued that creating differences is necessary to sustain life.

Figure 5.3: A participatory design process organized by the Kalkbreite cooperative housing project at L200.

Regarding social space, in a democratic society the right to centrality is an essential right. As alternative to the current society, a world of difference is capable to provide the necessary openness for imagining and acting for new possible spatialities, for shifting the meaning of diversity from otherness and exclusion, to variation and specificity, Young (1990), for affirming group differences without exclusion, and nevertheless, by providing access to power and representation within the political spectrum to various groups and social actors.

Figure 5.4: An outdoor exhibition of the Dreieck project, curated by Thomas Raoseta showcasing the "exhibition value" of the L200 space

5.7.3. L200 - the organization

The L200 space is located on the first floor of a city owned building, at 200 Langstrasse, in Zurich's Kreis 5 neighborhood. The main tenant is an association of neighborhood shops and enterprises, by the name gim5i+, that took on the mission to create a central stage for the small local shops and initiatives struggling to keep their presence in the neighborhood because of increased rental prices and higher value of real estate in Kreis 5.

From NetHood's perspective L200 is a spin-off of the MAZI and netCommons projects, recognizing the need of a permanent public, and centrally located space that can host a wide variety of participatory processes around technology, housing, collective learning, and more becoming in essence a reference point and real-life testbed for NetHood's current and future projects.

5.7.4. L200 - a local shops network

L200 project offers opportunities for networking, on the one hand, of local shops, with the possibility in the long term to create the 'Made on Langstrasse' brand, and on the other hand, of neighbors and neighborhood places. Links between Zurich and other cities, and between research and practice are to be shaped by creating an urban laboratory,networking with related university and research institutes.

These activities could be interesting for a) small shops and artistic production studios that need visibility in a central location, b) local businesses that could provide the interior design and the necessary equipment, lighting and furniture for the space, c) the municipality if succeeding to produce a local brand, d) Kreis 4 + Kreis 5 that are connected through the Langstrasse; e) interested cooperatives to be featured in the space (i.e., Genossenschaften: Handwerk; Bau und Wohngenoss: ABZ + Dreieck + Karthago + Kraftwerk1 + Kalkbreite + mehr-als-wohnen + PWG; SoLaWi); f) higher education and research institutes etc.

Figure 5.5: A calm co-working day during the first experimental period of L200's operation

5.7.5. L200 - toward becoming a living lab

At the beginning of the 1990s the term 'living lab' has emerged in parallel in the field of operations research focused on urban communities dealing with community-driven technology and social tools, e.g., Bajgier, Maragah, Saccucci, Verzilli, and Prybutok (1991), and at the MIT Living Labs (refer to work of William Mitchell, Kent Larson, and Alex Pentland) based on the concept of user experience and ambient intelligence. Presently a network exists by the name the European Network of Living Labs that defines living labs as "user-centered, open innovation ecosystems based on systematic user co-creation approach, integrating research and innovation processes in real life communities and settings"[3].

The concept is based on a spiral-type process, refer to Rittel (1972), following as main activities co-creation, exploration, experimentation and evaluation, during which negotiations take place between a wide range of stakeholders, and thus 'living labs' may be involved in the various phases of the design process. In a recent attempt to define the term 'urban living labs' and establish their characteristics, from related literature and a large sample of sustainable urban innovation projects in Amsterdam, Steen and van Bueren (2017) note that it refers to "a variety of local experimental projects of a participatory nature. It is often used interchangeably with the terms "testing ground", "hatchery", "incubator", "making space", "testbed", "hub", "city laboratory", "urban lab", or "field lab"" (p.22).

A key principle of participatory practices is to bring in the design process, together with experts those who are going to make use of its outcomes, whether they are residents of a neighborhood or people engaging with technology. Nevertheless, there are various degrees of engagement in the process, noted from early experiences with participatory practice by Arnstein (1969), for instance, in her article on the 'ladder of citizen participation'. At the lower rungs of the ladder are categories of action like manipulation, informing or consulting, while at the higher rungs these actions become either partnership, delegated power or even citizen control. By creating opportunities and establishing partnerships between designers and those who are actually 'experts' in understanding their own ways of living and working, the 'living labs' are capable to operate at the higher rungs of the ladder of citizen participation during the design process. The thorough analyses of Steen and van Bueren (2017) show that most of the projects kept the participation at the lower rungs of either informing or testing with users, and out of ninety projects, only twelve have engaged 'users' in the development process, reaching the co-creation phase, which is an essential characteristic of the 'living labs'.

[3] Available online at `http://www.openlivinglabs.eu` in 2016

Figure 5.6: L200 supporting a crowd-funding from a local bio-store, named Chornlade.

A critical point has to be made here regarding the term 'urban living labs', as in their definition innovation is a key characteristic, together with co-creation. Social innovations are distinct from technological innovations, and the 'urban living labs' always deal to a certain extent with social issues or address social needs. And although there is little agreement on what may be truly named 'social innovation', whether or not "all innovations that tackle social problems or meet social needs" can be considered as such, Bornstein, Pabst, and Sigrist (2014), p.4, it is important to take into consideration the complexity that the social dimensions bring in the design process. Establishing a new product in the market is not the main focus of social innovations, rather they explicitly pursue changes to societal practices.

6. Summary and future steps

The two main objectives of this task were to further develop theoretically the 'right to the hybrid city' concept, and to bring together researchers and activists from community networking and urban movements to develop a common plan around it. Both these objectives were achieved.

The right to the hybrid city concept coined by Antoniadis and Apostol (2014) has been enhanced within the context of the right to difference and the right to centrality, which are rather philosophical rights that contribute to the democratization of infrastructure networks. An interesting analogy with transport networks, in particular between rail stations and network nodes and servers, has placed in a historic perspective the dimensions of ownership, legal frameworks and governance, noting the role of the partner state and of collective participatory practices that are necessary conditions for the development of infrastructures as public goods.

Along these lines is also the co-editing of two special issues of JoPP on this topic, one with focus on the digital, Tréguer et al. (2016), and the other on the urban aspects, Travlou et al. (2018), of the right to the city struggle. Moreover, NetHood is an active member of a local community in Zurich interested to combine the traditional, and very successful, model of cooperative housing with concepts and ideas developed in netCommons. This is still work in progress. So we illustrate the ongoing work through the documents in Appendix A and Appendix B, namely a proposal for a cooperative housing project hosting an ICT center, and a speculative description of integration of CN principles in a cooperative housing project.

Referring back to the theory from the perspective of the practical applications and workshops organized in the project, the 'encounters' and the development of the L200 hybrid urban node have been actions in the struggle for the right to difference. Participatory and deliberative practices imply the exercise of communication, exposure to and dealing with diverse understandings and visions, by bringing together groups active in various alternative spheres toward sustainability. Thus to come to that presently, we have organized three different encounters in three European cities, stimulating the contact and future collaborations between digital and urban activists. The aim was to bring in touch actors engaged in activist movements concerned with the citizens' rights, either urban or digital rights, by breaking the ice and creating communication structures, which can generate in the future the space suitable for cooperation, reflecting Lefebvre's ideas of unitary urbanism and generalized self-management.

For instance, the first encounter organized in Heraklion, Crete, created opportunities for exchanges around a local network at the Parko Georgiadi, between active groups defending the current uses of the park, and participants at the CommonsFest from all over Greece mostly acting for the digital commons. Most importantly, the event planted the seeds for cooperation between activists in different parts of Greece, increasing their awareness about the possibilities that open up in the right to the hybrid city perspective. A follow-up encounter took place in the very dynamic urban action scene in Berlin, where digital activists participating at the 'battle of the mesh' met activists for the right to the city engaged in keeping the rental housing affordable or in protecting the Kreuzberg neighborhood from large corporations like Google. Many of these organizations from below are converging at the Neighbourhood Academy in Prinzessinnengarten, which after this initial encounter organized other relevant events including urban and digital activists. The last encounter organized by NetHood in the netCommons project was in at the L200 hybrid node in Zurich, and its main follow up was a series of activities in the ISOC-CH Social Impact working group, toward the creation of a wider nationwide working group. We expect that over time these initiatives will lead to collective action that could engage citizens and local community groups in an ongoing struggle for the right to difference and to centrality. We came to the realization, nevertheless, that a physical space for encounters is a critical asset to be pursued, as the L200 hybrid node provides in Zurich.

In the last year of the netCommons project, NetHood's two threads of work –theoretical and practical– have been met and materialized in a concrete project, which was not foreseen when the project was conceived. The creation of a brand new space by the name L200, designed as a hybrid urban node, located in a very central and precious location in the city of Zurich. On the one hand, it has the characteristics of an urban node at the confluence of many networks, a hub like railways stations provide these days, of course, at a different spatial scale. On the other hand, the space is equipped with digital technology that is not treated as another tool or infrastructure but it is an intrinsic part of its functioning and representation. Run as a collective, based on commons' principles, L200 is a living laboratory for social life that aims to produce prototypes for spatial practices that are suitable for the contemporary hybrid condition.

As the L200 hybrid node is a project under development, and its own sustainability is still work in progress, we included in the Appendix some work samples, such as communication activities through various printed material (Appendix C), as well as work presented to the research community on transdisciplinarity (Appendix D). Its current design incorporates NetHood's theoretical and practical work in the form of a living project that will hopefully develop long time beyond the end of the netCommons project.

Our goal is to transform the lessons learned from this process to a prototype easy to replicate. That will enable more and more citizens around the world to claim their right to the hybrid city, starting from the co-creation of hybrid community centers that act both as examples and hubs for coordination and innovation between complementary initiatives. To be continued!

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A. Proposal for the potential inclusion of an ICT center in the new cooperative housing project Kochquartier's architectural competition

One does not need to argue about the increasing importance of ICT infrastructure and digital platforms in our everyday lives.

This extremely fast development raises important social, ecological, and political issues:

- The quality of Internet access at home (cost, net neutrality, symmetric bandwidth)
- The hosting and ownership of data and services – digital sovereignty
- Manipulation and addiction from the abusive practices of commercially driven platforms (Facebook, Google, etc), with alternatives when meaningful (e.g., Intranet).
- Censorship and surveillance practices
- The energy consumed by ICTs, which can be reduced by technical solutions (using the energy from data centers for heating) but also social (building communities that encourage f2f contact and reasonable use of digital communications).

To the extent that the cooperative housing movement would wish to play a role in the huge transformation that is needed to address these important issues at a technical, social and political level, new settlements could consider becoming architecturally "friendly" to alternative solutions for data centers, Internet access, and local ICT services.

In practice such a decision (to become an actor of positive change against the threats that digital progress brings with it), could include one or more of the following strategic choices:

- Design spaces that could be used for the installation and energy-efficient operation of data centers of different scales (for the settlement only, or for a wider network of cooperatives, e.g., Kraftwerk1).
- Provide incentives for businesses, like cooperative ISPs, "ethical" data centers, to install their headquarters in cooperative housing settlements, being "friendly" for the installation of their infrastructure, but also providing opportunities for collaboration with complementary businesses (e.g., free software Intranet solutions) and building an "ecosystem" of digital sovereignty.
- Include spaces in the cooperative to be used for education and collective learning on ICTs, including their political dimension, bridging the digital divide (e.g., with devices like the hybrid letterbox).
- Make all of the above "flexible" in a way that there will be no problem if the attraction of the relevant actors and the sustainability of the overall processes do not succeed.

B. Speculative description of integration of CN principles in the NeNa1 cooperative housing project

(from the article "The Organic Internet"Antoniadis (2018) translated in German for the book "Die Andere Stadt"[1])

A big advantage of the "organic Internet", like organic farming, is that it does not need big investors and venture capitalists to be tried out. A determined group of people is enough to develop successful prototypes that can be easily replicated elsewhere, like the various urban community gardens around the world or the networks for seed exchange.

Such a determined group is a new cooperative housing project in Zurich, NeNa1, http://nena1.ch, currently counting 200 members. NeNa1 is the latest in a series of similar progressive "young cooperative housing" initiatives, like Kraftwerk1 and Kalkbreite. Its initial conception is generated at the neighbourhood level, Kreis 5, and proposes to complement the four existing neighbourhoods with a fifth one built from scratch, at the edge of this district, on the current Carparkplatz (see Figure B.1). This fifth neighbourhood with around 500 inhabitants will showcase a new model for sustainable living in the city going beyond housing, and including innovations in the areas of food, technology, and economy among others.

How would its internal communication infrastructure look like? Would it be the typical collection of wireless routers in every apartment and shared space, connected individually to the selected ISP, Swisscom, Orange, and the like by each resident? Would it include also an "Intranet" platform hosted by the city's most popular web hosting provider for their internal co-living organization, e.g., room reservations, assemblies, coordination of common work, social interactions, etc.? Or it would be something "different" and more "organic"? Which would be some reasonable choices regarding the required local infrastructure, consumption limits, sharing practices and software design in this case?

Let's try to imagine a few answers to these questions based on the discussion above.

First, the NeNa1 settlement will have a less wasteful way to allow access to the Internet in the first place. A leased line will be hired by a local ISP that can accommodate all the Internet traffic produced by its 500 residents and visitors, and much more, and whose cost will be subsidized by the rents. The whole settlement will be wired with fibre optic cables that will provide limitless access to this shared Internet connection, when one connects their laptop or desktop computer. For wireless access, the minimum required wireless access points, most of which will be solar-powered, are to be placed in strategic locations all using the same network name, SSID, to allow for easy access from most places in the settlement, but making sure that certain "Internet free" zones do exist.

Second, a small local data center will be installed at a suitable location to reduce the energy required for cooling (e.g., inside the "freezer room"). It will host a variety of local services, implemented with free and open source software, some of which will be also accessible through the Internet. These will include:

- a cloud service for storing files like Nextcloud (similar to Dropbox) and an e-mail server for both global and local e-mail exchanges.
- a digital archive with material from the history of cooperative housing in Zurich, and a local wikipedia for documenting experiences and knowledge for the replication of this successful model.
- a suite of local services including online social networking, announcement board, deliberation and decision-making, room reservations, and other scheduling activities, management of working groups,

[1] http://www.paranoiacity.ch/anderestadt/anderestadt.html

Figure B.1: A speculative model of the NeNa1 neighbourhood where today is located a parking structure and a bus station, across the main train station. See http://nena1.ch

among others. management platforms for various commoning activities such as a food cooperative, and a local economy for service exchange and self-help ...

- a separate online space accessible only from the settlement, which allow anonymous communication for expressing needs, complaints, and a variety of playful interactions.

Every shared space will include a hybrid letterbox [2] and a set of different types of input cards will allow people to participate through hand-writing in different online discussions (from making an announcement or complaint, to participating in the weekly knowledge competition). At the common workshop space, there will be weekly seminars on the politics of technology, the various social and ethical issues that appear when human communication is mediated through digital platforms, and hands-on workshops for building your own network and online services,

Shared spaces will be also equipped with big shared displays for visualizing different local activities taking place in different online places. For example, from 18h00-20h00 a selection of the most popular photos in

[2] http://www.design-research-lab.org/projects/hybrid-letter-box/

the local photo sharing platform will be displayed, and from 20h00-22h00 the most popular movie will be broadcasted. Finally, a set of directional antennas on the roof, or fibre cables if possible, will allow neighbouring settlements to connect to the local network and host their own local services in the same data center. This will open-up the possibility for services that concern the whole district like the management of the micro-center, announcements of events, etc.

C. The first L200 flyer (May 2018)

Figure C.1: L200 - First draft of the flyer.

Translation:

Langstrasse 200 in Zurich is open: as a stage for neighborhood businesses, for associations, initiatives and cultural events, as a meeting place for the neighborhood and as a future location for neighborly common living. The space is administered by the Verein gim5i+ and is used as a commons.

Neighborhood: the association (Verein gim5i+) is committed to strengthen Kreis 5 as a convivial neighborhood. It is political and confessional neutral, and open to ideas. We are happy that the city of Zurich has chosen the association as its tenant for the space at Langstrasse 200.

Diversity: The L200 space could be used in many ways und could change its design during the week and also at various times of the day —tex as co-working space or meeting room, as (think-)workshop, playground, as a (flea) market, as a tasting bar or as a party hall.

Businesses: in particular are invited in the L200 space small and middle size shops from the neighborhood. The association creates on its website, and on an onsite display, an interactive neighborhood guide, recording the businesses or other institutional members. Stores, associations, initiatives could benefit of a central and very visible shop window, install a shelf or present a pop-up store.

Neighborhood: our vision is a neighborhood where neighbors know and support each other, maybe they share resources, certainly ideas and knowledge. Introduce yourself ...

D. Abstract for poster at the 2018 Transdisciplinarity Day conference

Swiss Inter- and Transdisciplinarity Day 2018

Inter- and Transdisciplinarity in a Digital World

15 November 2018, EPFL, Lausanne

Title: The right to the hybrid city: central urban space as a commons*

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Keywords

right to the city, hybrid space, difference, living labs, collective learning

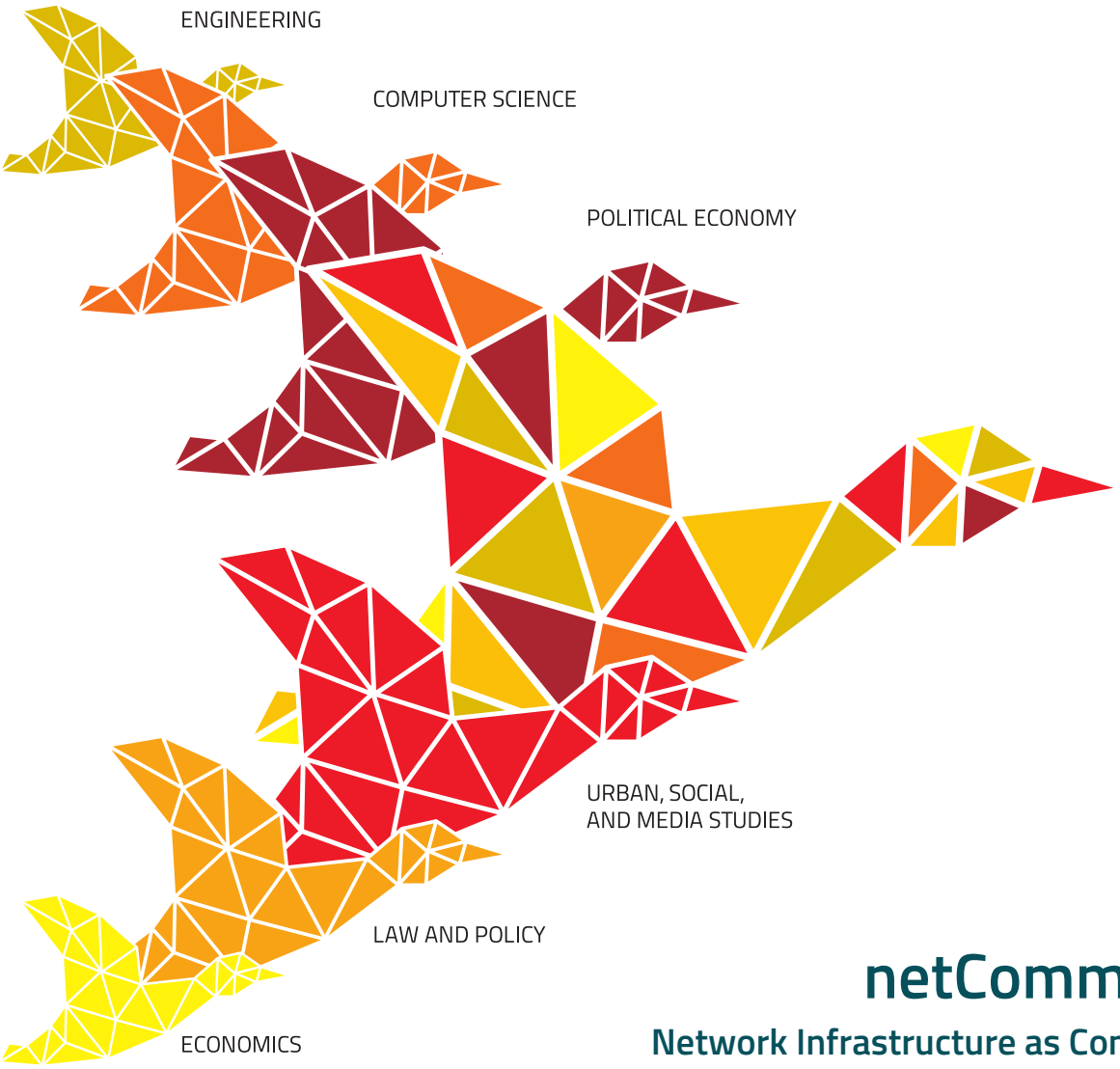
Abstract

Fifty years after Henri Lefebvre published on 'the right to the city', we propose to discuss the concept under the current digital and physical spatial condition. Today urban spaces shall be conceived as hybrid, physical and digital, due to the advance of ICTs and their impact on almost every aspect of social life; a key question arises, how the different rights to the hybrid urban space can be claimed by citizens.

NetHood, http://nethood.org, a transdisciplinary association undertaking research and learning within the hybrid spatial conditions, focuses on the right to centrality and to difference, for which the city of Zurich brings particular challenges and opportunities. For example, because of high value real estate and due to a long experience with democratic urban practices. In context a promising project was initiated recently: the co-creation of a neighbourhood space in a key location of the city center, by the name L200, http://langstrasse200.ch, conceived as a hybrid urban node run collectively; as a commons managed by the gim5i+ association of neighbourhood small shops, initiatives and non-profit organizations; at the crossings of manifold urban networks such as those of paths and spaces for public life, of communication and information, of trade, exchange and networking, etc. The idea is to use digital technology both as an enabler of such a complex and demanding collaborative project, and as a proof of concept on how our rights to the digital space can be exercised in creative and democratic ways toward better coordination, organization, information sharing, deliberation as well as social learning in the long term.

In this sense, L200 is developed as an urban living lab for hybrid tools that can help small neighbourhood shops to create economies of scale in a distributed and decentralized way, or allow a diverse group of organizations and individuals to share the space and its street windows efficiently over time. It will also become a pilot project for DIY networking tools, like the MAZI toolkit, http://mazizone.eu, and community networks, see http://netcommons.eu, which can facilitate the creation of digital spaces that are collectively owned and are literally attached to the physical ones, in our case the L200 space, a feature that allows for many playful and creative ways to build collective identity and memory in a participatory way. We document in this work the transdisciplinary process of producing hybrid space through various actions including petitions and claims for favourable action, applied projects in the neighbourhood, and recent shifts toward formulating guidelines based on the experience built at L200. The project describes a potential blueprint for creating hybrid infrastructure, and in the near future urban policies may be devised to bring such grassroots initiatives to reality at the city scale.

*The NetHood poster has been accepted to be exposed at the Swiss Inter- and Transdisciplinarity Day 2018 in Lausanne, and a speed-talk presentation will explain how its content contributes to the main topics discussed during the conference regarding a) co-production and integration of knowledge in a digital world; b) participation through digital platforms, and c) learning and teaching inter- and transdisciplinarity in a digital world.



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Network Infrastructure as Commons

Community Networks and the Right to the City

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