The Urban Digital Platform

Unravelling Alternative Spatial Patterns

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The

Urban Digital Platform

Unravelling Alternative Spatial Patterns

Letizia Chiappini

The Urban Digital Platform
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Co-tutela con Università di Amsterdam

The Urban Digital Platform
Unravelling Alternative Spatial Patterns

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This manuscript is dedicated to my dad
who has left too early to see this unfolding.

Goodfun*

Found my money in the kitchen,
Spent my time doing dishes,
How to change this position?
Won´t accept no divison,
mind on a mission.

Goodfun,
Lab-grown,
Yea! I call it shotgun,
Now you want some?

Goodfun-Goodfun,
Easy.
Goodfun-Goofun,
Easy.

Slide down the playground,
smoke out.
Fuck the lockdown!
so many people in this ghost town.
Everybody eating take-out.

"Uber eats! Uber eats!"
It´s amazing!
"Uber eats! Uber eats!
It´s a doll!
They come to your door.

(extract from Peter Finch's monologue in "Network", a 1976 film by Sidney Lumet)

"They are crazy!"
"We sit in the house!"
"Slowly the world we are living in is getting smaller!"
"Please, just leave us alone!"
"I want you to get mad!"
"You got to get mad"

Still doing dishes in my house,
I gained a pound.
But nobody came around,
another live-stream on soundcloud.
"Stream this position!"
"I am on a mission!"

Goodfun-Goodfun,
Easy.
Goodfun-Goodfun,
Easy.

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Introduction

"The ethos and logic of civic governments shifts from a
bureaucracy serving citizens for the common good, to a
technocracy that adopts business models and practices to serve
individual consumers. [...] the provision of services and essential
infrastructures transfers from public to private delivery"
How to Run a City like Amazon and Other Fables
Graham et al. (2019)

This dissertation aims to contribute to an understanding of the multiple forms that makerspaces and digital platforms can take, using platform urbanism as an overarching notion with which to observe these phenomena and drawing on a range of empirically detailed cases. In particular, it assesses the claim, put forward in academic and public discourse, that digital platforms and makerspaces have the potential to (re)organise social economies and civic initiatives by providing services and goods at the scale of the town or city. Moreover, this dissertation explores the possibility of a renewal of civic life, engagement, and participation through the concept of the "Urban Digital Platform" (hereafter UDP), and related practices. As a key component of the definition, a UDP facilitates the exchange of goods and services at a smaller, generally urban scale: they are both of and for the city and its inhabitants. Thus, the research analyses how digital platforms for civic engagement and grassroots initiatives might tackle different social issues and provide tools for the strengthening of urban communities. Conversely, these initiatives may encounter limits and obstacles and might have adverse effects on inclusion, which could be related to the availability of financial resources, subsidies, and grants, as well as a lack of participation, techno-biases, media literacy, and so on. To do this, I explore first (chapters I and II) European and north American cities before moving on to more specific analysis and discussion of Amsterdam and Milan (chapters IV, V, and VI).

In the public realm, one of the most prominent buzzwords used to refer to makers, digital fabrication, and digital platform is the "sharing economy." There has been a tendency to extol–or "hype"–this form of exchange as a panacea for contemporary social problems (Morozov, 2014), that can be traced back to Botsman and Rogers (2010) who argued that, compared with the more familiar, nearly ubiquitous vertical model, sharing economies eliminate intermediaries and provide an opportunity to create business models with a horizontal structure (Belk, 2014; Karatzogianni and Matthews, 2018). Hence, it is crucial to understand these discourses and practices as they unfold in different urban settings, by asking how they (re)shape existing patterns of urban development.

The body of literature on sharing economies, platforms, makerspaces, and the emergent field of digital geography has indicated the importance of the intersection between space, digital content, and actors, through which opportunities and contradictions can be traced. From the discussion and literature review, this dissertation advances a typology and a definition of the UDP to distinguish the "other" platforms oriented towards non-profit and bottom-up practices, social economy, and common goods. Instances of this kind of platform are civic crowdfunding, Commonfare, post-welfare platforms (Mos, 2021), and local non-corporate platforms, predominantly dedicated to broadening citizen participation, grassroots mobilisation, volunteering, and urban regeneration interventions (Zandbergen and Uitermark, 2019).

This is worth of further investigation. As such, identifying the key components and main dynamics that underlined the selected objects of study is related to issues of access, openness and closure, internal mechanisms and gatekeeping, media literacy, and participation biases. By doing so, I have asked the following questions.

Research Question and Sub-Questions

The overarching research question that guides this dissertation is:

–   What are the key components of digital platforms and how are they related to the broader urban context?

The sub-questions addressed are as follows:

–   Who is involved?
–   What kind of initiatives and projects do makerspaces and digital platforms include?
–   Where are they located?
–   How do they function and how do they relate to existing urban communities in terms of accessibility and gatekeeping?
–   How are they organised in relation to users and digital content?

As a summary for the division of sub-questions addressed in each chapters see table 1 below.

Sub-question	Chapter
Who is involved?	I; III; IV; V; VI
What kind of initiatives and projects do makerspaces and digital platforms include?	III; V; VI
Where are they located?	III; IV; V; VI
How do they function and how do they relate to existing urban communities in terms of accessibility and gatekeeping?	III; V; VI
How are they organised in relation to users and digital content?	II; IV; V; VI

Table 1. Division of sub-questions based on chapters. **Source.** Author.

The introduction first explores the different definitions and debates of sharing economy, makerspaces, and digital platforms in the relevant literature. Second, I explain my research design, methods, and data collection. In this section, I lay out my research questions and connect them to my methods. Finally, I present the structure of the dissertation and outline of chapters.

Sharing Economy, Makerspaces, and Digital Platforms

This section explores the definitions and debates around the concepts of maker-space, sharing economy, and digital platforms in the academic literature. The table (2) below provides workable definitions of each of these terms

Term	Operationalised definition
Makerspace	A collaborative space where individuals work with technology (i.e. open source software and 3D printing) on common or individual projects via diverse local initiatives with a variety of organisations, such as schools, corporations, library, museums (cf. van Holm, 2017)
Sharing Economy	A new model of consumption related to the development of new technologies of information and communication. It is based on the exchange, the sharing, and collaboration between individuals of goods, services, resources, time or knowledge, with or without monetary exchanges, via dedicated digital platforms (cf. Schor, 2016)
Digital Platform	Refers to the software or hardware of a website and/or an app allowing for the interaction of its users. It is a digital space that provide facilities for users to collaborate, interact or transact. (cf. Gillepsie, 2010)

Table 2. Definitions info-box. Source. Readaptation of definitions by the author.

What do sharing economies, makerspaces, and digital platforms have in common? They are all led by the principle of sharing knowledge and information–digital content–via Peer-to-Peer (P2P) networks which are not necessarily based on monetary transactions. They define particular relationship models, where both local and global dynamics intervene, and where there is to a certain extent a (re)allocation of goods and services at the city level (Frenken and Schor, 2017). For instance, makerspaces often rely on global communities to share know-how and information, deploying local resources such as materials and stakeholders, and engaging with projects oriented to provide services at an urban scale (Greenfield, 2017). Makers in Milan, for example, have been collaborating with educational institutions, such as primary schools, to provide life skills training, such as simple electronics and robotics knowledge, and public workshops. Moreover, the initia-

tives promoted by the most active makerspaces in Milan, such as WeMake and OpenDot, are sponsored via a civic crowdfunding platform set up by local authorities (chapter 3 of this thesis). A look into civic crowdfunding initiatives in Amsterdam indicates that many of these bottom-up projects try to revitalise certain neighbourhoods by using community-building strategies and existing local resources, such as already established networks and volunteer-based activities (chapter 5 of this thesis).

According to Richardson (2015), terms associated with the sharing economy include: collaborative consumption, on-demand services, gig economy, crowd economy, digital economy, and platform economy and society. These terms essentially refer to a form of exchange that uses digital platforms to pool and share services, resources, goods, time, knowledge, and skills (Pais and Provasi, 2015). Examples of sharing economy-type services include: short-term accommodation (Airbnb; Homeaway), transportation (Uber; Bolt), food and grocery delivery (Deliveroo; Gorillas), co-working and task exchange (WeWork; TaskRabbit), as well as makerspaces and crowdfunding platforms where individuals make financial contributions to others' projects (Schor, 2016; Vallas and Schor, 2020), pre-purchase a product, or invest financial resources (Davies, 2014). Here, it is important to point out a potential distinction between the former and well-known platforms which are for-profit and corporate in their model, and the latter such as makerspaces and crowdfunding platforms which are not for-profit in their initial intentions and motivations, but they aspire to be 'alternatives'. All the chapters of the PhD are meant to investigate and problematise further this distinction.

Digital platforms that operate extensively in the urban offer solutions or services such as short-term rent (Airbnb), unconventional mobility systems (Uber), or on-demand delivery (Deliveroo), where the urban is exploited and data extracted (Srnicek, 2016). In other words, platforms facilitate all kinds of socioeconomic activity and mediate their users' relations via digital connectivity, as well as organising the exchange of goods, services, capital, and labour (van Doorn, 2020). As Rodgers and Moore (2018: 9) put it, the issue at stake here is "how the urban shows up in, through and as platforms; and at the same time, how platforms show up in, through and as urban."

The ongoing transformation of the city as a broader process, in which the diffusion and use of digital media technologies plays an important role, occurs at the intersection between digital content, people, and space (Ash et al., 2018). It is undeniable that networked technologies mediate urban spaces, places, and everyday lives, moulding our perception and conditioning the choices available to us (Barns, 2018b). Yet the implications of digital platforms and collaborative practices are significant, geographically as well as politically (Stehlin et al., 2020). Generally speaking, "platforms are digital infrastructures that enable two or more groups to interact, as intermediaries that bring together different users: customers, advertisers, service providers, producers, suppliers, and even physical objects" (Srnicek, 2016: 43). The starting point here is the recognition that platforms are entities (Gillepsie, 2010; 2018; Langley and Leyshon, 2017).

Puschmann and Alt (2016) found the most significant driver to be the ubiquitous "app economy" in which mobile devices offer on-demand, customised goods and services. Böcker and Meelen (2017) have dated the sharing economy's popularity to the period following the 2008 financial crisis, in which individuals who lost their jobs sought opportunities in companies such as Uber and Airbnb. Not only do these companies provide new avenues for business, as they claim in their promotional material; they also promise to recreate the social ties that have been lost due to modernisation and the expansion of market society, as well as to inject economic motivation with civic virtues (Arvidsson, 2018). The puffed-up rhetoric that surrounds the sharing economy–its claims of bringing people together and stimulating social cohesion–has provided the terrain for what McLaren and Agyeman (2015) have labelled as "sharing cities", in which Milan and Amsterdam are used as emblematic examples of this recent notion.

In terms of spatial articulation, platform-based activities are favoured by critical mass and proximity, from Uber and Airbnb to grassroots community activism, they are spatially concentrated in cities and build upon existing geographies whilst feeding into the wider urbanisation of economic development, environmental action, and everyday life (Barns, 2019). Thus, the spatial dynamics of digital platforms and makerspaces constitute a potential way of (re)organising social economy, civic initiatives, and complementary welfare provision particularly at an urban scale (Barns, 2018a). The diffusion of digital platforms for civic purposes and citizen participation, along with the appearance of makerspaces in cities, has led to an increasingly dominant discourse in which urban economies and sociability are considered to be the alternative or a "glitchy vignette" in the cities of the future (Leszczynski, 2020). Moreover, the Covid-19 pandemic has accelerated the processes by which digital platforms come to represent a central pillar of urban life (Rose, 2021).

These processes primarily relate to questions concerning the intersection of media technology with the urban realm. This intersection is precisely where these spatial dynamics–which are co-constituted by digital content, people, and space–might ultimately create new spatialities that inform and interact with existing patterns of urban geography (Graham and De Sabbata, 2020). The mediation of the city and the digital, as well as potential new spatial articulations of goods and services, pose urgent and critical research questions in urban studies.

The Sharing Economy and the Digital Turn in Geography

Ongoing academic and public debates about the sharing economy, as well as the digital turn in geography (Ash et al., 2015) and sociology (Marres, 2017), serve as an inspiration for this dissertation. The expanding corpus, along with the notion of platform urbanism, has established certain tools with which to grasp aspects of our contemporary experience of space (Graham, 2020). Digital geography provides the lens through which to see spaces, experiences, and exchanges as effects at the intersection of tech-

nology, society, and spatial relations (Ash et al., 2018). In this section, I frame the concept of sharing economy through the theoretical lens of digital geography. The digital turn in geography indicates a novel way to map out the geographies of digital technologies, as well as the socio-technical configurations and production of spatiality. Such body of work involves tracing the formation and flows of data, charting the spatialities of digital platforms, sketching the material geographies of ubiquitous computing, outlining the economic geographies of component resources, technologies, and infrastructures, and so on.

As Rossi (2019) argues, the very definition of a sharing economy is controversial, because it encompasses extremely diverse practices, from digital platforms to maker-spaces and other collaborative activities within urban communities. Makerspaces and digital platforms are part of these theoretical debates, in which sharing economies results as an umbrella-term for a variety of practices linked by the notion of sharing, whether this occurs via platforms or in physical spaces. The discourses around sharing economies and makerspaces promoted by local governments, policymakers, and prac-titioners treat such practices as an inclusive model through which to build more hori-zontal social relations that are oriented to grassroots activities and citizen participa-tion. Here, makerspaces and a certain subset of digital platforms are heralded as the drivers of new political and economic possibilities. Survey data collected by Andreotti et al. (2017)[1] shows that, initially, participants identified social and ecological values as the main drivers for using sharing economy-type services. Pais and Provasi (2015), mean-while, found that the users of such services valued exchanging goods and services over ownership and possession. A qualitative study conducted by Schor, and Fitzmaurice (2015) into a food-swapping platform also found that participants were almost exclu-sively female, while makerspaces and transportation services (Uber) were dominated by users that identified as male.

Another relevant notion that has emerged in recent years and in particular within the digital geography debate, "platform urbanism" (Barns, 2020). Within its broad scope, this notion examines how platforms transform urban infrastructure such as transpor-tations and service provisioning, governance, knowledge production, and everyday life (observing indeed that such transformations are multidirectional, with these dynamics shaping the trajectories of platform urbanism itself). In this line of reasoning, Hodson et al. (2020: 2) insist that "digital platforms fundamentally, and unevenly, reconfigure urban space and life itself". By observing an emergent shift and examining the process of spatial articulation of makerspaces and digital platforms, the goal of this thesis is to understand how the urban space is reconfigured.

Urban sociology and digital geography's contributions are crucial in order to carry out an analysis of the interface between digital platforms and patterns of urbanism (Harding and Blokland, 2018). More than a decade after the rise of digital platforms such as Airbnb, they remain surprisingly difficult to taxonomise and itemise coherently. At

the same time, it is important to distinguish how different platforms intersect with other urban dynamics (Ash et al., 2016) and to understand wider social and economic interests, as well as how both local and global geography (Kloosterman et al., 2018) contribute to a platform's development.

Nevertheless, the concept of platform urbanism is gaining traction as a way of illustrating the new dynamics and spatial outcomes of corporate digital platforms. Sarah Barns (2018b: 36) defines platform urbanism as "the reshaping of city infrastructures and services through platform-driven business models," where the emphasis is on data-driven forms of urban governance via the implementation of smart city agendas (Barns, 2018b), and the diffusion of corporate digital platforms (Kitchin, 2017). A review of the literature reveals an emphasis on the more sizeable body of corporate digital platforms, and a blind spot when it comes to the subset of platforms oriented to civic initiatives, cryptocurrency, and mutual or solidarity groups. I show in chapters IV, V and VI these initiatives reconfigure urban space by transforming the urban regeneration of public space into the hands of bottom-up citizen initiatives. For examples, in Amsterdam civic crowdfunding initiatives now complement government funding for constructing facilities for outdoor activities and sports, such as playgrounds.

The literature–and particularly that from digital geography–starts from the assumption that digital platforms function as critical infrastructure in urban societies (Rodgers, 2021). Given their influence on economic and social structures, digital platforms are becoming de facto (semi-)public infrastructure in cities (Rossi and Wang, 2020). Indeed, digital platforms have changed what constitutes "the field": the rise of digital content offers new forms of evidence with which to approach long-standing geographical questions (Ash et al., 2018). Cities provide the conditions in which digital platforms (particularly those for profit) can concentrate on urban areas, given the abundance of demand (Sadoswski, 2020). In facts, dense urban areas may be of strategic value because of their ability to sustain fiduciary networks and to promote "loci of innovation" to the pull of cities through agglomeration economies (Storper and Venables, 2004; Brandellero and Kloosterman, 2010).

The extensive work carried out into global digital platforms has convincingly established that large, global, profit-driven tech corporations can be labelled as: extractive, using the city to extract profits, in which the urban is a resource to be mined; exploitative, abusing the density, size, and diversity of the urban fabric; and algorithmic, operating data-driven forms of governance and computational productions of space (Rodgers, 2021). While, UDPs treat the urban as a dimension along which to (re)organise citizen-based mutual aid initiatives and solidaristic action. They do not depend on big data and algorithms; instead, their internal organisational structures are presented as bottom-up, with a limited number of users, and initiatives that are largely driven by civic motives (at least in the initial phase). The actors involved operate mostly at a local level, and the goods and services exchanged are primarily delivered at an urban scale or within a specific community.

However, the definition of UDP is a matter of distinction in terms of actors, type of projects, numbers of users, interactions and relationship between them. In real life cases, I have shown that these initial configurations might vary based on the composition of actors within different projects. However, positioning UDPs in a wider frame of urban development and the empirical findings indicate that the way in which they function shows a further problematisation that put into question their aspiration to be alternative compared to the for-profit and corporate ones. In order to grasp the complex constellation of actors using UDPs, it is necessary to take a close look at cooperatives and artistic movements, non-profit organisations, political leaders, and policymakers, as well as artist communities, activists, and software developers.

These movements, like platforms coops and behind the platform Commonfare, and alternative economic initiatives, such as civic crowdfunding, may consciously produce alternative visions of the future (Sandoval, 2020) that compete with those of platform businesses, although they draw on similar tropes (Walker, 2014).

There is, however, a lack of empirical evidence in the existing literature to indicate how the mechanisms and dynamics of these practices evolve in our cities. Potential conflicts arise, however, in the form of contributions from civil society actors as well as public institutions and businesses, that could prevent these seeds from flourishing. How this struggle unfolds is a question of politics, participation, and governance.

Dynamics and Mechanisms. Aspiring to be Alternative?

The literature has often focused on and criticized Airbnb and for-profit platform (which I also do in chapter I and II). However, largely overlooked and undifferentiated are other kinds of platforms oriented to citizen participation and alternative provisioning and allocation of services and goods at an urban scale, such as civic crowdfunding (chapter V) and Commonfare (chapter VI). These are what I call UDPs, a concept that I lay out in chapter IV. Another form of UDP I explore are makerspaces and their communities (chapter III), which rely on local resources and appear as successful projects in the civic crowdfunding campaigns. Makerspaces are often struggling to be economically sustainable, therefore their projects need to be supported by discourses and practices promoted within civic crowdfunding editions. Their spaces are located in neighbourhoods and areas of cities that are in need of urban regeneration and places for gathering. I position all of these UDPs in a wider frame of urban developing. In this section I will then explore the question of what makes these initiatives alternative, or not, by considering the dynamics and mechanisms that underly their functioning.

One of my central conclusions across chapters is that UDP undergo a kind of "mission creep" in which they begin by valorising civic and public interests but ultimately must resort to selling goods and services on the market to survive. In this way I explore how urban economies function in ways that blur the dynamics between public and private, top down and bottom up, and market and alternative. The boundaries of these conventional

dichotomies are now hybridised and forms of diverse economies co-exist with conventional marketplaces (Gibson-Graham, 2008). These new urban economies and forms of production promise to be more effective and efficient delivery of services and goods. These new markets are already transforming how established activities are organised and performed at urban scale.

Examples of alternatives arise from conflicts around platforms and different makerspaces that are now becoming well known and take various forms of economies and trajectories (d'Ovidio, 2021). Protests, occupations, petitions and blockades by those affected by platform-mediated short-term rentals and platform-based taxi services, and strikes by food delivery riders, are common (Aguilera et al., 2019). Alternative platforms or initiatives have emerged like Fairbnb benefiting from tourism (Fairbnb), and cooperative models of platform taxi or food delivery services (e.g. CoopCycle)." They result alternative due to the fact that these makerspaces and UDPs, which are spatially articulated in cities, propose a bottom-up organisation of individuals and empower a range of initiatives, from educational activities to care for vulnerable members of society.

This dissertation therefore sees sharing economy discourses and makerspaces as part of the larger transformation of our cities, as to a certain extent they both propose a collaborative form of production and the allocation of goods and services. Makerspaces in particular are seen as a potential source of unconventional systems for the provision of public services, by for example organising the complementary provision of education and healthcare (Gullino et al., 2019). Mariotti (et al., 2017) indicates a growth in makerspaces and civic initiatives that deploy technology for their mission and activities, with initiatives around energy or housing cooperatives, food teams[2], cooperative libraries, and so on (cf. chapter III of this thesis). For instance, members are responsible for producing and provisioning the goods and services themselves, just as is the case in makerspaces. Citizens promote and determine the identity of the group: members have a say in its form, bottom-up organisation, and future lines of action, often in relation to the urban contexts in which makerspaces are embedded.

Both makerspaces and digital platforms are characterised by an extensive use of digital technologies that support user interactions, multimedia material, hashtags, feedback and review systems, and the deployment of local resources within a community marketplace via P2P transactions. Thus, the analysed dynamics and mechanism concern socio-spatialised practices within makerspaces, and of the ongoing developments of digital platforms. It addresses the question of the intersection between digital platforms and cities, where different stakeholders, their networks and interactions, digital content production, and the realisation of local initiatives come together to co-constitute new spatial configurations in the urban realm. From a political economy perspective, the main dynamics and mechanisms might indicate a co-existence of diverse modes of production. The abovementioned dynamics and mechanisms indicate the key components of digital platforms that guide the analysis. The key components identified and analysed

in this study include: a) discourses and allocation: the capacity to produce and redistribute goods and services for urban communities; b) governance: the level of accessibility, openness, mutualism, and internal democratic control for users; c) urban actors and spatialities: the number and type of users involved, representation, and the location of allocated projects.

In particular, both chapters III and IV intend to scaffold the main dynamics and mechanisms, by looking at makerspaces and conceptualising the UDP. While chapter V and VI focus mainly on governance aspects, urban actors and the spatial dimension.

Research Design, Methods, and Data Collection

One of the persistent challenges of conducting research in sociology and urban studies is the use of innovative methods that do justice to the diversity of contexts and data that we encounter in social and urban life (Rodgers and Moore, 2020). Leszczynski (2017) highlights the thorny tensions that beset the application of methods within digital geography. In fact, experimenting with traditional methodological approaches and mixed techniques could enhance our understanding of social and urban life. This is particularly effective for digital objects and subjects (Lynch, 2020) that are constantly changing in their design and affordances[3]. Innovative methodologies would have to both recognise and move beyond traditional qualitative and quantitative research methods, engaging with other techniques of data collection, representation, interpretation, and the rapidly changing nature of the platforms themselves (Boy and Uitermark, 2020). As Marres (2017: 29) remarks: "it is not the digitization of methods as such, but rather the re-mediation of established social research methods in contemporary society that raises new methodological questions."

This dissertation, however, does not focus either methodological questions or epistemological ones. It starts simply by acknowledging that traditional methods need to be integrated with "unobtrusive methods" (Pink, 2016), as in digital ethnography which allows researchers to observe online interactions and digital content production, and to formulate interpretations of these. This also helps to clarify the difference between digital methods and computational ones. Whilst the latter refers to the application of techniques developed in computing (Rogers, 2013), digital methods sit at the interface between social research, media and technology studies, and sociology and urban studies.

The same is also true for the samples and small numbers of users within UDPs, compared to the massive sample and computational procedures needed when one scripts large amounts of data from Twitter, Airbnb, or Instagram. This study deploys a toolkit of different, mainly qualitative methods, and includes a variety of research techniques: interviews, participant observations, document analysis, GIS mapping, and digital ethnography. As Marres (2017: 31) notes, "digital platforms make it easier for sociologists to involve research participants more closely and actively in their research projects," and the present work is no exception. My results draw on data gathered and analysed pri-

marily through qualitative methods such as interviews, participant observations, digital ethnography, and GIS mapping.

Concerning the aim of this research, the questions are tackled following a primarily qualitative approach, to better understand subjective experiences, beliefs, and the use of concepts via the discourse of relevant actors. The main goal is to gain in-depth knowledge about the specific phenomena identified, exploring under-researched problems by generating new concepts and ideas. This qualitative research design is more flexible and inductive, accommodating adjustments based on what has been found during the research process. This design has been chosen to meet the purposes of the research, and is twofold. First, there is a considerable focus on describing and defining trends and characteristics, as well as relationships as they exist in the real world. Secondly, detailed case studies of the subjects at the heart of the research are explored (e.g. makerspaces and different types of digital platforms). Besides the primary collection of data via qualitative methods and mapping, the methodology also relies on secondary techniques: material constituting secondary data comes from official documents, press articles, promotional material disseminated during seminars, and workshops.

Data were collected using a variety of sources and methods that are described in the next sub-section. As a detailed study–carried out via data collection, extended immersion, and close observation–of the communities and organisations involved in the platforms discussed here, the research design allows for a focus on describing, analysing, and interpreting discourses, practices, and social and urban dynamics. The following diagram represents the operationalisation of the research (cf. Figure 1).
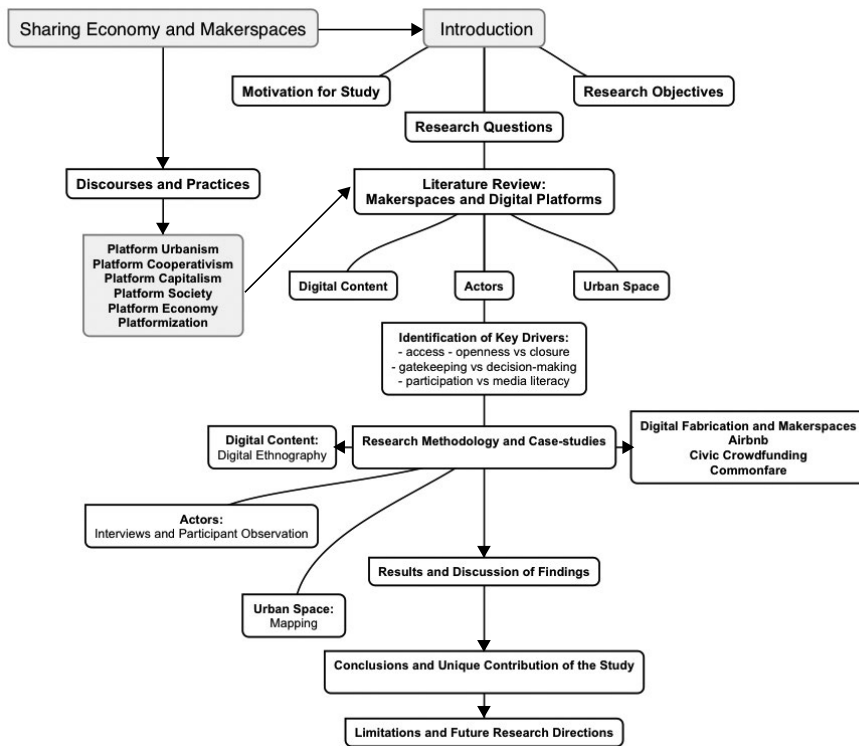
Figure 1. Operationalisation of the research. **Source.** Author.

In order to define the broad population that the research addresses, the selection of practices and participants has followed a logic of visibility; that is, what can be considered a prominent practice in public discourse, and who are the actors involved in the promotion, functioning, and implementation of the selected projects in cities? The ultimate goal in defining the demographic and the sampling strategies is to allow the largest possible collection of data about the specific context in which these practices and actors operate. The choice of case studies and actors has, however, been carefully considered to offer opportunities to observe how similar practices might be matched across different cities, such as Milan and Amsterdam. For instance, whilst discourses around digital fabrication within makerspaces and the implementation of civic crowdfunding platforms may have similar intentions, a comparison between different cities might reveal a surprising or neglected aspect of the research problem as it had previously been identified. A possible limitation here regards the impossibility of a perfect comparison between two cities; rather, the approach prioritises an exploration of the same subject in different contexts, to grasp distinct dynamics and patterns in two diverse settings.

Nevertheless, to counteract this limitation, the selection of participants is careful to include a similar group in each city, in terms of both the number of interviewees and their role. In other words, the composition of the participant group is rigorous in that it is highly attentive to an interviewee's involvement with the platforms, whether in an organisation or as a direct user, and whether in Milan or Amsterdam, or both.

Matching Research Questions and Methods: An Overview

To ensure a systematic approach within the methodology, the table below shows a summary of the method used for each sub-question (cf. table 3). The overarching procedure is therefore designed to meet the requirements of the main research question.

Sub-question	Method
Who is involved, and what kind of initiatives and projects do they include?	Interviews and participant observations
Where are the makerspaces and digital platforms' projects located?	GIS mapping
How do they function and how do they relate to existing urban communities in terms of accessibility and gatekeeping?	Interviews and participant observations
How are they organised with users and digital content?	Digital ethnography
What are the key components of digital platforms and how are they related to the broader urban context?	

Table 3. Connections between sub-questions and chosen methods. **Source.** Author.

During the fieldwork, and in particular during the observation of public events or as an active online user, the participants often gathered together, and were also aware of my positionality as a researcher. This arguably enables new forms of interaction between the actors and the researcher, as these platforms also share an "infrastructure of social life and social research" (Marres and Weltevrede, 2015: 76). The constant reciprocal presence during interactions and close personal networks permits an iteration of the results with the same participants over an extended period of time, the duration of the fieldwork between 2016 and 2020. A small cluster of respondents (about twenty key actors) have been kept up to date with the progress of the research, or have been asked for

their views on transcripts or findings, which has stimulated further interpretations. This cluster is composed of highly educated individuals who are all aware of their entanglement with the platform that they were either promoting, criticising, or simply being active on. For ethical and privacy reasons, all respondents reported in the Appendix B (Tables 14; 15) are anonymised and listed in tables by their role/position, organisation, and the date of the interview.

Moreover, to simplify the reading of the empirical material underneath each interviewee's quotes in the chapter, there is a number (#) that matches the number of the table in the Appendix B (see Tables 14 and 15). Some of the interviewees are the same in both cities, due to the fact that they are key figures in promoting the discourses at a European level. In the table they are often reported twice, because they were interviewed twice at different times and about different projects to do with the same platforms.

Interviews

This branch of the empirical material consists of sixty interviews, including follow-ups and personal communication divided equally between Milan and Amsterdam. The interviews were either semi-structured (twenty per city), with a track for questions, or entirely unstructured as in-depth interviews (ten per city). The latter were conducted with key participants, and changed based on their role and the functions discussed. The role of the interviewer in unstructured interviews is to propose broad themes to touch on, giving the interviewee the freedom to build their own narrative and story. Since the participants' roles and functions vary significantly, it was crucial to maintain this approach, which also meant that interview length varied as well. The semi-structured interviews lasted between twenty-five and fifty minutes, whereas the in-depth ones lasted for an hour or more (cf. Appendix B for more details).

The interview sample is comprised of makers, activists, academics, local authorities, software and project developers, policymakers, entrepreneurs, citizens, and users, all of whom are connected by varying degrees to the discourses and practices around sharing economies and makerspaces, or participate directly on civic crowdfunding and Commonfare platforms. Actors from Waag and Dyne.org in Amsterdam, however, were often involved in events and discourse promotion in both cities. The same also goes for prominent figures in the artistic and activist communities, such as Macao in Milan, where actors are often involved in artistic performances or collective actions to support their urban communities in both cities. I deal in particular with two cities, however my purpose is not a comparison between Milan and Amsterdam, but to examine the processes and constellations of actors that contribute to transform these urban contexts. The above-mentioned prominent actors have been interviewed in-depth. The in-depth interviews allow to describe the process and the future developments envisioned by these key informants.

This allowed participants to answer in their own words, and to explore their ideas and discourses. In both the semi-structured and unstructured interviews, the interviewees were encouraged by semi-directive techniques (Rihoux, 2006). For instance, the secondary data of official reports, white papers, and so on, enable the researcher to cover a number of pre-selected themes while remaining open to their content and sequencing. The various themes covered include the respondent's relation to the history of either the platform or single projects, the platform's activity and production of its digital content, the technology policy and data-related issues, the financing and revenue of the activity, the activity's partners and contributors, the type of work organisation, the distribution of power and involvement, the type of knowledge resources and sharing information, desired developments, and future patterns.

The orientations of the actors that belong to the scene are grassroots (i.e. makers, artists, creative workers), economic and market-focused (i.e. entrepreneurs, private firm actors), social (i.e. non-profit associations, cultural foundations), and political (i.e. policymakers, activists, academics)[4]. It is also important to point out that over half of the respondents are active on two or more of the platforms analysed, civic crowdfunding and Commonfare, in Milan and Amsterdam. The interviews were conducted during three rounds (two face-to-face rounds, one in Milan and one in Amsterdam, and one digital in both cities). The interviews were conducted by the author, in person, or by phone and online, between June 2016 and October 2020. The interviews were all recorded or directly transcribed.

Based on the literature review and analysis of secondary data, the questions for the semi-structured interviews look at categories and key components such as: the user-contributor community's participation in the form of governance within the platform; the ways in which rules and mechanisms for internal decision-making are drawn up; the hybridisation of resources (private-public, market-based, solidarity, etc.); the relation to urban space; the potential for the redistribution of common goods; resource-sharing and the attitude or approach to ownership and cooperative principles; organisation of online and offline activities in relation to the project; and users' media literacy and techno-biases.

Participant Observations

Participant observation allows for the unobtrusive collection of data, by observing characteristics, behaviours, or social interactions without relying on self-reporting (Ezzy, 2013). Observations were conducted in real-time, by taking detailed notes and writing extensive descriptions, along with supplementary audio-visual recordings for further analysis (Henry, 2015). The importance of using participant observations lies in the definition of the type of audience, the size, the content (discourses, beliefs, etc.), the location, and the venue. Sharing economy events, civic crowdfunding, and Commonfare promotions were often advertised in strategic and fashionable cultural venues in the two cities, choosing often fairly prominent locations for institutional events (such as

BASE Milano and Co-Hub in Milan, and Pakhuis de Zwijger and Waag in Amsterdam, with the Impact-Hub franchise present in both cities). These are mainly networking events intended to enlarge the community of stakeholders, engaging with civil society and specific subcontractors (i.e. citizen organisations, associations, or NGOs).

As was the case for Commonfare, the dissemination phase was crucial to recruit users and engage more people within the local communities. Eight events were held in both Milan and Amsterdam. The most relevant observation sessions took place during 16 events organised in Milan and Amsterdam, in some of the cultural and symbolical venues mentioned above (cf. Appendix B, Tables 16; 17).

Digital Ethnography

Within the digital methods paradigm (Rogers, 2013), researchers are encouraged to follow the medium as a source of new methods and languages for understanding contemporary society. Given these premises, the approach proposed here embraces the same logic that the Internet employs to gather, order, and analyse data: with tags, links, and hashtags. However, the paradigm does not intend to introduce a new methodological apparatus, but rather to propose some analytical concepts and revise some tools that could be useful for researchers who need to enter social media environments during fieldwork (Caliandro, 2017). In this particular study, I deploy a digital ethnography approach to map the sociocultural context in which participants are situated. Due to the nature of the method and its flexibility, it can be effectively adapted to online environments, although this means that it is in constant need of reshaping according to the features and mutations of online environments (Baratt and Maddox, 2016). This represents a potential drawback where the homogeneity of the material and the selection of the participants who belong to the sociocultural context are concerned. For instance, the digital ethnography was conducted on Twitter and Facebook as well as on digital platform environments. The features of these two sets of online environments are not the same (cf. Appendix B, Tables 18; 19).

From the empirical findings of the digital ethnography (for a total of fifteen Figures reported in the dissertation), it is possible to assess who are the most active types of users in terms of the promotion of makerspaces and digital platforms. Aside from the institutional websites, in Milan–where the municipality is much more involved in advertising–the city councillor Cristina Tajani and the think tanks Milano Innova and Include are the most active users when it comes to publishing posts to the public account pages on Facebook. Meanwhile, in Amsterdam, the local authorities are not visibly involved in promoting discourses on social media platforms, and Waag along with one of its founders Marleen Stikker are the most prominent profiles involved in contributing to the discussion, and promoting or criticising various practices. Both Cristina Tajani and Marleen Stikker promote via tweets and mentions, on both Commonfare and civic crowdfunding platforms, particularly during events that I have attended (see Tables participant observations 16; 17 in Appendix B).

Mapping

Digital geographers have proposed a conception of the space in which we live as an intersection between people, digital content, and spatiality. The methods discussed above cover one point of this triangle, spatiality. Spatiality–where the projects are located and how they intersect with existing urban spatialities, as well as how they contribute to the production and transformation of space and urban contexts is addressed by using GIS mapping. The use of GIS is part of a longer history of knowledge production, in which visual outputs are prioritised (Crampton, 2010). The main purpose, therefore, of using GIS is to map projects and their spatial articulation as generated by the implementation of makerspaces, civic crowdfunding, and Commonfare, allowing an overview of their location in relation to existing patterns of urban development.

The GIS mapping has produced a total of seven maps (one for makerspaces in Milan, two for the first edition of civic crowdfunding in Milan and Amsterdam, two for the multiple editions of civic crowdfunding in Milan and Amsterdam, and two for the Commonfare platform initiatives in both cities). The material produced by this mapping serves to unravel the spatial articulation of the phenomena under study.

Chapter Outlines

This thesis consists of six chapters, all of them have been previously peer-reviewed and published in scientific journals or as a book chapter in with and well-established academic publisher (cf. Appendix A list of papers[5] and journals). The chapters are ordered as follows:

I. The Greedy Unicorn. Airbnb and capital concentration in 12 European cities
II. Selling Black Places on Airbnb. Colonial discourse and the marketing of black communities in New York City
III. Deus Ex Machina. Makerspaces in Milan and their transformative potential
IV. The Urban Digital Platform. Instances from Milan and Amsterdam
V. Civic Crowdfunding as Urban Digital Platform in Milan and Amsterdam. Don't take pictures on a rainy day!
VI. Commonfare as Urban Digital Platform. Vignettes from Milan and Amsterdam

The contribution of the first two chapters is centred around a critique of Airbnb as a platform that operates in the urban realm as a "greedy" economic entity. The fourth, fifth, and sixth chapters offer contributions that explore alternative cases, such as makerspaces, civic crowdfunding, and Commonfare. The third chapter represents a transition, or hinge, from the initial critique to a search for other possibilities and alternative urban economies, which characterises the last chapters IV, V, and VI. It was written before the conceptual distinction between corporate-global digital platforms and UDPs was proposed, but it nevertheless prefigures precisely that distinction and played an im-

portant role in formulating it. This part of the work indicates the theoretical roots from which digital platforms weave alternative visions of urban futures.

All the chapters are based on empirical evidences and data gathered through the methods above mentioned. Specifically, there is a comparative analysis of twelve European cities (including Milan and Amsterdam) using the Gini-index to look at trends of capital concentration (chapter I) and a case study in New York (chapter II). Both of these chapters used datasets available from the open data base Inside. Airbnb. Chapter III is a close investigation of makerspaces in Milan, whilst chapters IV, V, and VI deploy examples from Milan and Amsterdam using a match-pairing of the same platforms, namely civic crowdfunding and Commonfare, which operate in both cities. This allows a comparison of the two platforms, in terms of discourses and practices, and the related spatial articulation.

I. The Greedy Unicorn. Airbnb and capital concentration in 12 European cities[6]

Despite discussions about how digital platforms have democratised access to the market, there is increasing evidence of their role in exacerbating concentration, as recommender algorithms and digital reputation tools usually favour a small clique of top users, which may include short term rental platforms (STR). There is also mounting evidence regarding the proliferation of negative externalities connected to the growth of Airbnb (and similar services). This contribution investigates the political economy of concentration in relation to Airbnb, employing the lens of urban studies whilst problematising digital platforms as a key element of contemporary infrastructure. Using a dataset of 6.5 million reviews from Inside Airbnb, we estimate a) yearly revenue and listing concentration, and b) the proportion of listings that are more likely to feed negative externalities in the housing sector, such as those listing full houses or those with high levels of availability, in twelve European cities. Starting with a simple measure of a phenomenon that has hardly been quantified in recent literature, we dissect the role of STR platforms in urban political economy. We show that STR platforms generate a "rich get richer" effect. Moreover, local economic context seems to make no difference, with STR platforms emerging as a new form of footloose capital. The upscaling of regulation may be required to avoid uneven urban development patterns.

II. Selling Black Places on Airbnb. Colonial discourse and the marketing of black communities in New York City[7]

Airbnb has recently become a growing topic of both interest and concern for urban researchers, policymakers, and activists. Previous research has emphasised Airbnb's economic impact and its role as a driver of residential gentrification, but the platform also fosters place entrepreneurs, geared to extract value from a global symbolic economy by marketing the urban frontier to a transnational middle class. This brings into sharp focus the cultural impact of Airbnb on cities, and its power to both symbolise and com-

municate who belongs where, often drawn along lines of class, gender, and ethnicity—and thereby potentially driving cultural displacement. Coming from this perspective, this chapter uses computational critical discourse analysis to study how white and black hosts market black-majority neighbourhoods in New York City on Airbnb, and how guests describe their consumption experience. Our analysis shows how white entrepreneurs attempt to attract guests through a form of colonial discourse: exoticizing difference, emphasising foreignness, and treating communities as consumable experiences for an outside group. White visitors, in turn, consume these cultural symbols to decorate their own identities as tourist consumers, describing themselves in the colonial tropes of brave white adventurers exploring uncharted territories: glorious conquests no longer of gold and ivory, but of sandwiches at a local bodega.

III. Deus Ex Machina. Makerspaces in Milan and their transformative potential[8]

This chapter provides a brief overview of some of the narratives and claims made in the literature around the maker movement and its suggested transformative potential. Makerspaces are seen as alternative social spaces that offer a new transformative potential to urban social life. Such spaces clearly constitute new urban meeting places that enable the convergence of diverse urban dwellers. The attention given to makerspaces arguably has its origins in the more established P2P practices within software development, whose affordances and demands have enabled new forms of organisation and production processes. This chapter discusses the maker movement as it has played out in Milan where, in comparison with other Italian cities, urban governance has been characterised by the significant and widespread involvement of civil society.

IV. The Urban Digital Platform. Instances from Milan and Amsterdam[9]

This article interrogates the concept of the urban in relation to digital platforms designed for citizen-based initiatives and local projects. We must broaden our scope as urban scholars to include this vast undergrowth of "other" platforms and study how they intersect with the social and material fabric of cities. Drawing on media and internet studies, urban sociology, and digital geography, I introduce the concept of the "urban digital platform" (UDP). I do this by bringing work from these disciplines into dialogue with the abstractness proposed by Bratton's (2016) concept of "the stack," entry points to define any kind of digital platform. Global and for-profit digital platforms exploit density, size, and diversity, extracting resources for a data-driven form of governance and a computational production of space. UDPs, meanwhile, apprehend the urban as a front along which to (re)organise citizen-based mutual aid initiatives, and solidarity actions. The core of the UDP concept lies in the ambiguous role of urban government, media literacy, and techno-biases as basic requirements for citizens to access the platform, its services, and goods. These claims are supported by examples and empirical findings from the analysis of two platforms in Milan and Amsterdam.

V. **Civic Crowdfunding as Urban Digital Platform in Milan and Amsterdam**.
Don't take pictures on a rainy day![10]

Cities are conducive to the emergence of digital platforms, whilst at the same time being reshaped by the digital spaces created by these same platforms. The key features that set Urban Digital Platforms (UDPs) apart from other digital platforms are, on one hand, the allocation of public goods and services at an urban scale (via P2P transactions), and on the other, their orientation towards civic and grassroots initiatives in areas where local state agencies play a significant role in steering urban development. This article explores the spaces and realms of interaction and engagement that UDPs have created in two major European cities, Milan and Amsterdam. By focusing on civic crowdfunding initiatives, it shows that digital platforms not only facilitate societal initiatives, but also have the potential to fundamentally change (urban) political processes, as their gate-keeping principles provide a powerful frame for the selection of projects. This chapter sheds light on the ways in which platform urbanism and the new lens of digital geography are critical to an investigation of 'alternative platforms' such as civic crowdfunding, and the mutual co-constitution of technology, sociality, and spatiality more broadly.

VI. **Commonfare as Urban Digital Platform**. '**Stories' from Milan and Amsterdam[11]**

This chapter focuses on Commonfare, a bottom-up welfare platform that has been implemented in three important European cities: Milan, Amsterdam, and Zagreb. Practices of welfare exchange include solidarity buying groups, cohabitation experiences, FabLabs, time banks, co-working spaces, self-managed crèches, social cooperatives, ethical banks, urban gardens, gyms, and initiatives related to free and open-source software. There are a number of features specific to Commonfare that distinguish it from the notorious corporate ones such as Airbnb, and which pertain to the platform's horizontal internal organisation (its principles of access, openness, participation, and representation of users), its conception of data and information as common goods (the disintermediation of information), and the capacity to redistribute goods and services within a city (the disintermediation of the provision of complementary welfare measures).

The chapter explores what Commonfare is and how it operates in Milan and Amsterdam, who the main actors are, how resources are allocated, and to what extent Commonfare, as a UDP, is able to disintermediate and redistribute at an urban scale.

Moreover, it sheds light on the real-world application of Commonfare, situating the same platform in two different cities and examining the location of projects in relation to existing urban geographies. The chapter employs a range of techniques to achieve this, from conventional qualitative methods such as interviews, to digital methods such as digital ethnography, with the aim of analysing the platform's functioning mechanisms and spatial outcomes in two different contexts, Milan and Amsterdam. The main findings suggest that the Commonfare project has been characterised by the promotion of itself as an alternative and sustainable socio-economic model, capable of meeting the

needs of vulnerable social groups without access to information about public benefits and welfare measures.

In the pages to come, sharing economies' discourses, makerspaces, and digital platforms practices will be explored in great depth. We still do not know if there will be 'glimmers of alternatives' and what the effects will be. However, what we do know is that these phenomena are already implicated in our everyday lives and will only continue to be in the years to come...

Notes

1.   The survey is part of European Union Horizon 2020 Research Project 'Participation, Privacy and Power in the Sharing Economy', conducted in the six participating countries: Germany (Leipzig), Italy (Milan), the Netherlands (Amsterdam), Norway (Oslo), Switzerland (St Gallen), and The United Kingdom (London).

2.   Grassroots Economic Organising. "Building a Co-op Alternative to Local Food Delivery Platforms." geo.coop: http://geo.coop/story/building-co-op-alternative-local-food-delivery-platforms (accessed 30 July 2018).

3.   For example, Airbnb is constantly changes "the look" of the app, by for example moving different widgets, in order to push users to adapt to different affordances in a certain way. It is often difficult to find the customer service, which is remarkably hidden in the maze of options, before recourse to chatbots is the only option. Or think about the Uber Eats notification banner that pops up during eating, with pictures and restaurant suggestions on what to eat via delivery, based on previous orders.

4.   For an overview of the participants (cf. Appendix B, list of informants, Tables 14; 15)

5.   In the following chapters, the reader might encounter the word 'paper' instead of 'chapter' as indicated in the introduction. It is due to the fact that five of these chapters are published as papers. Moreover, the original abstracts from journal publications have been readapted accordingly.

6.   Anselmi G., Chiappini L. and Prestileo F. (2021) The greedy unicorn: Airbnb and capital concentration in 12 European cities. *City, Culture and Society*, 27.

7.   Törnberg P. and Chiappini L. (2020) Selling black places on Airbnb: Colonial discourse and the marketing of black communities in New York City. Environment and Planning A: Economy and Space, 52(3), 553–572. https://doi.org/10.1177/0308518X19886321

8.   Chiappini L. and Törnberg P. (2018) Deus ex machina: Makerspaces in Milan and their transformative potential. In K J. Fisker, L. Chiappini, L. Pugalis and A. Bruzzese (Eds.) (2018) *The Production of Urban Alternative: An International Dialogue.* Routledge: London.

9.   Chiappini L. (2020) The urban digital platform: Instances from Milan and Amsterdam. Urban Planning, 5(4), 277-288.

10.   Chiappini L. and de Vries J. (2022) Civic Crowdfunding as Urban Digital Platform in Milan and Amsterdam: Don't take pictures on a rainy day! *Digital Geography and Society*, 3.

11.   Chiappini L. (2022) Commonfare as Urban Digital Platform: 'Stories' from Milan and Amsterdam. *City, Culture and Society*.

Chapter I
The greedy unicorn. Airbnb and capital concentration in 12 European cities[*]

At the time of its IPO, Airbnb was valued 47B USD, making it one of the most successful new economy 'unicorns': a 'start-up' whose evaluation sits north of 1B USD. Nevertheless, evidence of negative externalities connected with the increase of Short-Term-Rental (STR hereon) platforms has been piling up in recent years, multiple scholarly accounts describe increases in housing prices (Wachsmuth and Weisler, 2018; Yrigoy, 2019) and wealth inequalities (Schor, 2017). Furthermore, STR platforms may work as accessories to gentrification processes in the US (Törnberg and Chiappini, 2020) and EU (Amore et al., 2020) cities, as well as in other contexts (Cocola-Gant, 2016). Due to these conditions, political actors in different contexts began to regulate the activity of platforms to different extents, and at different scales, local, national, and supranational (e.g. EU) institutions tried to contain negative externalities associated with STR platforms (Aguilera et al., 2019; Garcia-Lopez et al., 2019; Lee, 2016). Nevertheless, urban studies do not often consider how the very structure of platforms, meaning its digital affordances (Rogers, 2013) produce negative externalities; namely because of how content curation algorithms to store, retrieve and display information to users, very specific negative externalities are produced. In this contribution we consider how the coming age of Airbnb, as a mature commercial platform, has produced inequality among its users: we do this by leveraging InsideAirbnb data for 12 European cities: Milan, Paris, Barcelona, Naples, Bordeaux, Seville, Lisbon, Amsterdam, Berlin, London, Vienna and Prague.

We conceptualise STR platforms as entities that bring the logic of platform capitalism (Srnicek, 2017) to traditional Urban Political economies. We have empirical proof of how recommender systems in commercial platforms engender a St. Matthew's effect (Barabasi, 2003; Taeuscher, 2019; Tan et al., 2017), leading to an increased concentration of social (and, by extension, economic) capital in a small clique of super-connected nodes (Parigi and State, 2014). Our goal is to understand whether this is happening in selected European Cities, in a context in which Airbnb is increasingly regulated: preliminary studies (Picascia et al., 2017) seem to hint at this being the case but studies that engage with the same phenomenon on a larger scale, and in present times, are needed. We will do this using InsideAirbnb data to calculate the yearly Gini heterogeneity index for each city, for two key variables: incomes and controlled listings (i.e. listings that are associated with a specific user id) in the 2011–2019 timeframe. Furthermore, we will also track in-indicators associated with negative externalities in the housing sector: the proportion of listings that are 'full houses' and listings that have 'high availability'. Increasing values for these means that an increasing number of housing units have been distraught from the regular market; conversely, lower values would hint at a different scenario, with the 'spare capacity of housing units being allocated on the market, ideally leading to lower impacts in terms of pricing increases and gentrification.

While tracing a clear connection between different varieties of residential capitalism (Fernandez and Aalbers, 2017; Schwartz and Seabrooke, 2009) and different distributions of concentration and negative externalities go beyond the scope of this paper we, nev-

ertheless, have selected cities in different political economies. With a purely descriptive outlook, we will explore whether different political economic contexts are associated with different distribution of concentration and negative externalities or if a common trend prevails.

Global platforms, local consequences

Assessing the power of real estate capital and the consequences it brings in local contexts has been a part of urban political economy, since its inception (Logan Molotch 1987; Stone, 1989): accelerating capital mobility (Cox 1993; 2017) and capital concentration (Lizieri, 2009; Anselmi and Vicari, 2019) have become key stepping stones of this theoretical approach. In this article, we would like to conceptualise the advent of STR platforms as a moment in which investment capital has become more fluid: allowing rentiers to invest in the housing market (including shifting properties from the traditional sector). Furthermore, we conceptualise STRs as digital infrastructures that promote rental as opposed to convivial sharing (see Belk, 2014 or; Pais and Provasi, 2015). In essence, STRs are digital artefacts that enable market re-intermediation of housing rental, leveraging reputation economies to solve information asymmetries; however, this comes at a cost. There is mounting evidence of a) new negative externalities connected to the disruption of local real estate markets and, in general, an increased risk of displacement for local dwellers, b) a 'professionalisation' of hosting for STR, which has, in turn, facilitated the advent of international investors.

Regarding the first point, while assuming that STRs alone cause an increase in rental prices may be a little far-fetched, we do have compelling evidence of the connection between Airbnb and price increases (Barron et al., 2018; Garcia-Lopez et al., 2019; Lee, 2016) as STRs remove housing units from the mainstream rental market (Gurran and Phibbs, 2017; Wachsmuth and Weisler, 2018). On the same subject, spatial analysis of STR diffusion seems to be organised around central clusters (Gutierrez et al., 2017; Ioannides et al., 2019) within surveyed cities. On the issue of STR-led displacement, there is a growing number of case studies finding a correlation between the rise of STRs and local displacement, employing case studies, and qualitative methods (Mermet, 2018; Richards et al., 2019). Unsurprisingly, these negative consequences reinforce the existing class (Cansoy and Schor, 2016) and race cleavages (Törnberg and Chiappini 2020; Edelman and Luca, 2015).

The other subject is, comparatively, less populated as scholarly reflections on this subject are just beginning to circulate: Cocola-Gant and Gago (2019, but see also Cocola-Gant, 2016; Serrano et al., 2020) produce compelling empirical evidence that surveyed Airbnb hosts are not local dwellers sharing their homes but are individual or corporate investors buying properties in order to specifically let those on STR platforms. Dogru (et al., 2020) and Gil and Sequera (2020) get to similar conclusions by measuring the concentration of listings. Desiree Fields (2019) follows the same path, focusing on the

role of platforms as bearers of financial logic in the housing sector, hence enabling concentration and penetration by non-local capitals. Looking at the larger picture Aalbers (2019) classifies STR-led investments as a form of fifth wave gentrification, meaning that STR platforms work as a collector of transnational financialised capital and may have very serious consequences in terms of displacement.

If we consider STRs as manifestations of platform capitalism (Srnicek, 2017), we can focus on another substantial issue, concentration and monopolisation. There is strong evidence (Langley and Leyshon, 2017; Thiel and Masters, 2014) that the business model of platforms relies on 'disruption' of markets, namely the development of a commercial strategy that aims to control a given market, reaping then monopoly profits on the VC or financial capital markets. Usually, monopolisation is analysed at the platform scale, however the same logic also applies to the 'micro scale': platforms may also work as enablers of monopolies in local contexts. Social platforms, by design, pile up connections: network effects tend to encourage connecting to higher degree nodes, as they have clearer reputations and larger feedback pools (Barabasi, 2003; Taeuscher, 2019; Tan et al., 2017).

In essence, how we conceptualise the role of platforms may be better understood using an analogy: financialization research has demonstrated that financial investors abide by a partially different set of rules (Theurillat and Crevoisier, 2013) and indicators which may very well be in contrast with practices coming from traditional RE investing, eventually those result in different outcomes in terms of built environment (e.g. the now ubiquitous large-scale mixed-use development). In a similar way, platforms may superimpose a new political economic layer over previous arrangements, this being determined by the specific affordances of online platforms which include a very high risk of furthering capital concentration because of how recommender algorithms work. Despite the increase in literature dealing with negative consequences a European level measuring of concentration furthered by STRs and accessorial externalities is still missing, so in this article we would like to: a) measure concentration in listings and earnings; b) measure negative externalities linking STRs and housing shortages; c) chart distribution of these across different contexts; comparing cities: methods and data.

Data for this paper comes from the InsideAirbnb dataset (Cox and Slee, 2016) which is rapidly becoming a de facto standard for research on Airbnb. STR platforms as a phenomenon is somewhat larger than Airbnb but, without any encompassing dataset covering all of it, it is reasonable to focus on the main player. We have gathered data for 12 cities: Milan, Paris, Barcelona, Naples, Bordeaux, Seville, London, Amsterdam, Berlin, Lisbon, Prague and Vienna. Our dataset comprises 6,5 M reviews divided among 152.338 hosts, we will track interest variables across local con- texts in the last nine years, as this period has seen a spectacular affirmation of STRs as both the number of hosts (17740 percentage) and the number of rentals (44566 percentage) has grown exponentially in the last nine years.

In this timeframe we will track four variables: 1) revenue concentration, 2) listing concentration, 3) yearly percentage of listings that feature full houses (as opposed to shared accommodations) and 4) yearly percentage of listings that have 'high availability'. To operationalised the first one, we will estimate earnings as a function of the number of re- views: namely, we will assume that a) there is a 30% of stays that do not origin reviews and b) each review signals a 3 night's stay, as InsideAirbnb and Picascia and colleagues (2017) do. We will estimate the yearly earnings for each host, then calculate the yearly Gini index for each city. For clarity's sake, we should point out that aggregating reviews at the host profile level introduces a modicum of bias, as single actors may have multiple pro- files (many corporate entities register ac- counts under fake names, see Gil et al., 2020) or, vice-versa, a single 'host profile' may act as an intermediary, managing ads for differ- ent individual homeowners. However, intermediaries charge a relevant fee and may have hundreds of managed properties, more often than not mixing with some of their own. In essence, using the Gini index may be a rough approximation but, at the same time, is an adequate proxy to measure whether a minority of super-connected nodes is acquiring more control (and obviously profits) over short-term rental.

The second item is operationalised as the (yearly) Gini index for the distribution of listings among different users and the third item does not require any explanation. The fourth one is simply the percentage of listings that are considered by InsideAirbnb as 'high availability': meaning that they list availability over 120, 60 or 90 days per year, de- pending on the city, as this measure depends upon how InsideAirbnb has assessed the level of regulation of each individual city.1 Our twelve sample cities hail from different political economic traditions. Three main criteria have guided city selection: firstly, we wanted to include cities mentioned by Aguilera (et al., 2019) to chart concentration in cases that have been recently surveyed in their regulatory approach to STRs. Secondly, to those we have juxtaposed cities in the same national environment but within regions with a lower GDP per capita. Thirdly, to account for the fact that different national polit- ical economies commodify housing to different extents and this may have an effect on concentration we have also decided to capture at least one case for each of the differ- ent 'residential capitalism' taxa proposed by Schwartz and Seabrooke (2009), respectively: Italy, Portugal, and Spain (Familial), France, Austria, Czech Republic (Statist), UK (Liberal), Netherlands and Germany (Corporativist).

Furthermore, we have registered homeownership rate in Table 4 while we did not select on this variable, we include it nonetheless as it may have an effect of concentra- tion; ideally lowering it for high values. A word of caution is in order, regarding com- paring different local con- texts: assuming any causal relationship between different regulatory environments and concentration scores would require additional in-depth research, which goes beyond the scope of this paper; nevertheless, we feel that just jux- taposing measures across different cases may help build validity for our observations. Namely, if a given feature or trend is present across all cases it is more likely to be 'uni-

versal' meaning that is likely to be an effect of the platform in itself as opposed to a specific arrangement, due to local conditions.

Trends of concentration and externalities in 12 cities

In order to represent the trends of concentration and externalities for each of the cities we have devised two scatterplots (Figs. 2 and 3) each with two sets of points: the first set of points (the one marked by a dot) charts the average of each variable across all surveyed timeframe, the second set of points (the one marked by an 'x') charts the average of each variable across the last five years[13]. Cities moving towards the bottom and/ or towards the left are, respectively, reducing their concentration or decreasing the number of negative externalities generated.
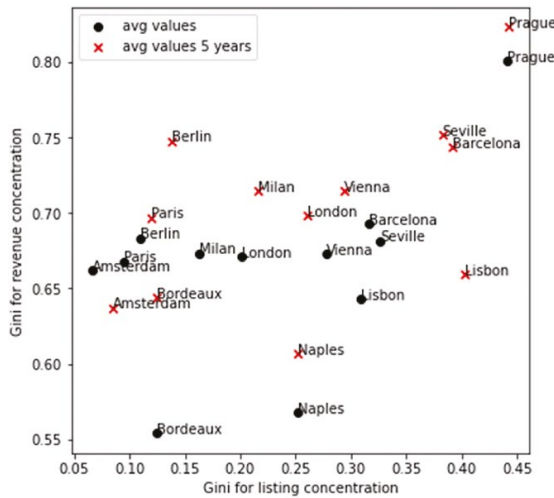
Figure 2. Average of yearly Gini for revenues and listings. **Source.** Authors.
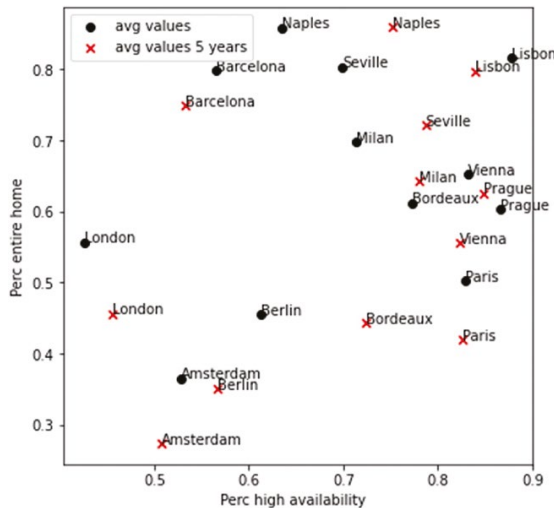
Figure 3. Percentage values for housing negative externalities. **Source.** Authors.

First of all, Figure 2 demonstrates that a) the concentration for revenues is fairly high across all cities as the vast majority of cities sits between 0.70 and 0.63 Gini, with Prague being a very spectacular outlier b) concentration of listings seems to be both lower in ranking as well as more widespread. Secondly, it is possible to appreciate how almost every city has experienced increased concentration for revenues in the last five years, with the only real exception being Amsterdam, furthermore many cities (Milan, London, Barcelona, Seville, Lisbon) have also seen a sharp increase in listing concentration in the last five years with the other ones being more or less stationary and no relevant cases of de-concentration.

City	Homeownership
Milan	73,6
Barcelona	74,32
Paris	47,58
Naples	61,33
Seville	81,66
Bordeaux	60,5
Berlin	15,34
London	49,6
Lisbon	66,06
Amsterdam	47,9
Vienna	19,03
Prague	39,71

Table 4. Homeownership in 12 cities. **Source**. Eurostat 2011 census hub.

Neither the percentage of homeownership (cf. Table 4, as it can be seen in Milan, Naples, Barcelona and Seville) nor the particular taxa within Schwartz and Seabrooke's Residen-

tial Capitalism model seem to affect concentration. However, Prague seems to be playing in its own league, incidentally it's the only city in our sample to be totally unregulated when it comes to STR. It is impossible, as of now, to draw conclusion out of this observation as a deeper understanding of the local context is needed in order to assess whether this is fully due to the platform effect vis a vis pre-existing economic and institutional conditions; nevertheless, our measurement assess that Prague could be a very interesting case to analyse with a comparative strategy.

Figure 3 paints a slightly different picture as negative externalities are more widespread, meaning that, unlike concentration, the distribution of values has no 'central band' in which most of the values fall. Furthermore, almost all of the cities have reduced their values in one or both (Amsterdam, Berlin, Barcelona, Bordeaux, Lisbon) variables in the last five years.

Juxtaposing the two figures we may attempt an interpretation of results, namely we should be aware of the fact that these variables have different interaction with local political contexts. Firstly, local political elites may be both unwilling and unable to regulate away concentration issues, this is particularly true for revenue concentration but regulating listing concentration may also present a strong challenge: as a matter of fact local regulation, in general do not tackle this issue: even cities that present stronger regulatory frameworks such as Barcelona, Paris (Aguilera et al., 2019), Berlin (Duso et al., 2020) or Lisbon do not ban multi listings per se but introduce a registration number that may be denied by the city in specific cases. That said, it should be considered that the top 20 hosts in each city have been active on Airbnb, on average, 1.2 years earlier than other users, meaning that those responsible for revenue and listing concentration have probably well entrenched positions and are, probably unlikely to be affected by this kind of regulation. On the contrary, reducing the number of listings that are full houses, as well as reducing the number of days during which each residential unit is available seem to be a priority for local administration: especially the latter one has been embedded in some local regulatory frameworks (Berlin, Paris, London Amsterdam and Bordeaux).

Conclusions, urban life with a unicorn

As it can be seen from previous data both the distribution of earnings, as well as the distribution of listings, confirm that Airbnb enables con- centration towards a small number of nodes. Furthermore, both kinds of concentration increase with time in the vast majority of cities, regardless of local economic context, it should be noted that this strong increase happens alongside a spectacular expansion of Airbnb in terms of listings, reviews and active users. In these regards Airbnb operates as a pure digital platform: just as it was measured in the case of Couchsurfing (Parigi and State, 2014) super-connected nodes are able to gather substantially more reviews, hence generating a rampant St. Matthew effect which, essentially, further extremises concentration. If we want to conceptualise Airbnb in urban political economy we can focus on two main at-

tributes, scale and monopoly rent. With regards to scale Airbnb operates as the quintessential 'lean' platform (Srnicek, 2017), meaning that it has almost no fixed assets tying it to a particular place: it has no physical assets, computing power is purchased on the cloud and, to function, it relies mostly upon the work of hosts. What little workforce it has (mainly for marketing & PR purposes) is mostly hire-and-fire, as the massive layoffs connected to the early phase of the Covid-19 pandemic have shown.

This, juxtaposed with the Global presence that Airbnb has achieved, configure a textbook example of 'territorial non correspondence' (Cox, 1993), as the platform does bring critical resources in specific areas (the more dependent upon tourism the local economy is, the more valuable they are) but at the same time regulating the platform may become a tough challenge. While this also applies to monopoly financial capital (Foster, 2006) fuelling urban renewal, Airbnb has special characteristics that warrant special consideration, namely Airbnb is even more footloose than financial investors: investments in RE backed by monopoly financial capital are usually a) long term, b) dependent upon the delivery of competitive public goods (e.g. transport, amenities, etc.) by public elites and c) tied to a small clique of 'apex' global cities. Actually, a large part of Airbnb revenues comes from small tourist towns of which there always has been an 'oversupply', meaning that relocating is easy if the need arises. Secondly, the 'diffuse' nature of STRs mean that enforcing regulation with 'boots on the ground' is fairly expensive as data on listings and accounts, which will be needed to sanction unlawful behaviour, is a strategic chokepoint, one that Airbnb fully controls.

Regarding monopoly rent data shown in this article makes it evident that the connection between Airbnb and monopolies goes beyond its dominant position in regards to STR platforms, namely Airbnb also functions as an enabler of monopoly, partly because of the St. Matthew effect, partly because Airbnb also operates as a facilitator of investments in local contexts: while we still do not have reliable estimates regarding how much capital gets funnelled through Airbnb to cities, we still can (notwithstanding the colossal damage done to tourism by the Covid-19 pandemic) observe a proliferation of companies touting international investment opportunities through Airbnb, even for 'casual' investors.

This introduces a further driver of inequality as it has become entirely possible for large scale investors to use Airbnb as a compatibility layer anchoring in local contexts: literature (Sequera and Nofre, 2020; Cocola-Gant and Gago, 2019) is beginning to report this; furthermore, there is anecdotal evidence of large scale second level corporate intermediaries operating through Airbnb, for example STR giants like Sonder or The Squa.re have consolidated their presence in Italian cities through Inside.Airbnb data on negative externalities also show that, to some extent, Airbnb can be regulated: costly as it may be, large cities can effectively force the platform to abide by some rules limiting its impact on gentrification and price spikes: how effective this will be and whether this is also true for smaller touristic cities will remain open question for the time being.

However, distinguishing between phenomena that can be regulated and phenomena (e.g. concentration) that cannot (or won't) be regulated at the local level is of paramount importance for two main reasons: firstly, because investigating how vertical integration (à la Savitch and Kantor, 2002) at a nation state or transnational (e.g. EU level) affect STR platform regulation is a promising avenue of research; secondly, because different externalities may feed upon one another. Strong regulations are hardly problematic for monopolists or even for large scale actors: as a matter of fact, powerful players may also increase their market share because of strong regulations as large-scale actors have the capacity and the skills to comply with them, while smaller actors may be out of their league in dealing with the requirements or, they may simply lack the utilities of scale to turn a profit in a (hypothetical) hyper regulated environment.

Charting concentration in STR, besides raising awareness of a critical issue in urban political economy it also opens a way to other avenues of research. Firstly, we need to consider in more detail the differences that have emerged from our measurements in Fig. 3, while it is true that increased concentration is a constant (with the notable exception of Amsterdam) different cities exhibit different degrees of increasing con- centration, the extent to which this depends upon specific configurations of the local context is still to be investigated. Secondly, we need to compare Airbnb with different STR platforms, at the present time other platforms remain understudies but Booking.com, Homeaway or Trip-Adivisor may have different concentration patterns. Thirdly, data for 2020 for 2021 hint at a strong contraction in listings and bookings if we want to understand the social repercussions of STR platforms we need to know who will 'stay alive' after a biennial meltdown in the tourism sector: will monopolistic actors divest and convert to mid/ long term rental? Or will small business operators and home sharers pay the price of the crisis? Will concentration increase or decrease? It seems that Airbnb is here to stay notwithstanding the Covid-19 crisis, all of these questions will help us understand how we will relate with this cumbersome guest.

Notes

* Anselmi G., Chiappini L. and Prestileo F. (2021) The greedy unicorn: Airbnb and capital concentration in 12 European cities. *City, Culture and Society*, 27.

13. For clarity's sake these are the actual threshold values for high availability: Paris, Bordeaux >120 days, London, Berlin, Barcelona >90 days, Amsterdam, Milan, Naples, Prague, Vienna, Lisbon, Seville >60 days.

Chapter II
Selling black places on Airbnb. Colonial discourse and the marketing of black communities in New York City[*]

The city has increasingly become a marketplace within which place is consumed like any other post-industrial product, as brands, identities or images of life are used to gain advantages in a symbolic economy (Zukin,1989; 2009). This type of marketing and consumption of neighbourhoods affect rents, but also changes the production of urban space (Lefebvre, 1991), symbolising and communicating who belongs in specific places in ways responding to questions of class, gender, and ethnicity. This makes the city an arena in which cultural dynamics are given physical expression, as symbolic value is quick to translate to rent increases, in turn driving residential displacement (Amin and Thrift, 2007; Hyra, 2015). Recently, digital platforms like Airbnb have come to play an increasingly important role in this symbolic marketplace. These platforms epitomise urban neoliberalism by making every citizen an entrepreneur in an ostensibly liberal, open and level playing field that claims to widen participation in the market to under-privileged groups, while drawing widespread criticism for their impacts on the rental markets (e.g. Barron et al.,2018; Horn and Merante, 2017), in particular in relation to disenfranchised communities (Cox, 2017; Edelman and Luca, 2014). Existing research on the effects of these platforms has in particular focused on racial biases (Edelman et al., 2017; Kakar et al., 2016; 2018; Leong and Belzer, 2016), the ways that they drive gentrification (Cox, 2017; Gant, 2016; Wachsmuth and Weisler, 2018) and rent-increase (Barron et al, 2018; Horn and Merante, 2017).

This paper focuses instead on the cultural and discursive impact of Airbnb. We argue that Airbnb provides a symbolic marketplace that helps expand cultural commodification and appropriation to previously sheltered urban arenas. Airbnb is turning citizens into "place entrepreneurs" (Logan et al., 1987; Molotch,1976), set to extract value from the tastes of a global middle class by marketing place and community to outside groups. Following the notion of gentrification as new colonialism (e.g. Smith, 2005), this paper looks at the marketing of black-majority neighbourhoods a form of colonial discourse, thus relating to a large literature documenting the ways that the stereotypes of colonial people are constructed to fit the interests of colonial rulers (Chrisman and Williams, 2015; Loomba, 2007; Said, 1978). Coming from this perspective, the paper asks: how are black-majority neighbourhoods marketed by hosts on Airbnb, and how do guests frame their consumption decisions? To answer this question, the paper carries out a large-scale computational discourse analysis (Törnberg and Törnberg, 2016) on data on Airbnb listings in New York City. This discourse analysis approach departs from viewing discourses as not only mirroring, but also contributing to perpetuating and producing social processes (Zukin et al.,1998). Discourse analysis thus permits studying how cultural tastes in gentrifying areas are constructed to enable the extraction of profit from urban land.

The results of this analysis are used for a broader discussion on the role of race within the cultural commodification of the new phase of urban neoliberalism, emphasising the conjoined racial processes of property making and property taking (McKittrick,

2011; Ranganathan, 2016; Roy, 2017). The paper begins, however, with situating platforms like Airbnb in the current era of urban neoliberalism, discussing its impact on, and role in, the urban economy: the casting of citizens into entrepreneurs in a market that enables the expansion of urban cultural commodification (Peck, 2014; Ranganathan, 2016).

Platforms in urban neoliberalism

Airbnb is part of a growing trend of online platforms that function as information hubs for connecting users, often referred to using one of a plethora of marketing pre-modifiers – "smart", "social" or "sharing" – which in practice signals their aim being the transformation of societal through an added technical intermediation (Törnberg and Törnberg, 2018). This development, which Srnicek (2017) calls "platform capitalism", can be seen as a continuation of the trajectories of urban neoliberalism. In terms of regulation, Airbnb can be seen as a state-like entity in the sense of constituting a container and plenipotentiary for a market: it sets up the regulatory mechanisms for entering and participating in the market exchange, often bypassing other forms of governmental regulation (Amin, 1994; Dunford, 2000). Airbnb is in this sense in competition with traditional state actors, and rather successfully so as its automatised mechanisms imply much lower costs than dealing with government institutions. For instance, rather than registering real estate as a hotel and starting a company, using Airbnb is as simple as creating an account and uploading some photographs. Instead of fees and taxes to the state, users pay a per cent-based commission of 5-15 percent to Airbnb for participation in the market.

This can be seen as driving a new step in the transition from managerialism to entrepreneurialism (Harvey, 1989), in which even the entrepreneurial state has become too confining as a container, and so capital is breaking out of it – just as it previously broke out of the managerial state (Aglietta, 2000; Murray, 1989). The entrepreneurial state is thus being partially supplanted by technological systems managed by private companies, acting as a form of undemocratic state-like actor, by-passing the national and local regulations of the localities in which it operates and setting up its own market rules. Platform capitalism is thus appearing as an era in which the private sector is taking over the role of the public sector as a container of a market. Unlike states, this container is not geographically bound but is just as global as capital – as it is indeed part of it. The global reach of Airbnb, in combination with platforms being natural monopolies, means that competition is decidedly lower than for neoliberal states, meaning that Airbnb in some ways brings a reduction of entrepreneurialism. This does, however, not mean that they offer a form of privatised return to managerialism: Airbnb is effectively claiming the rights of taxation without representation. As they provide very little services other than as intermediator, they seem better captured by Merrifield's (2014: 309) notion of a "parasitic mode of urbanisation", administered by an elite that seems to thrive exclusively on unproductive activities.

This regulatory shift also implies a productive shift, resulting from the new relationship between private companies and state actors. Since Airbnb remains the object of state control, it needs to be entrepreneurial in relation to traditional state actors. Airbnb is thus assuming the role of the urban "regulatory entrepreneur" (Pollman and Barry, 2016: 387), for which changing the law forms "a material part of its business plan". While traditional lobbying efforts take place behind closed doors, away from public scrutiny, contemporary regulatory entrepreneurs instead aim to make their issues as salient as possible, to thereby rally the public to their cause, and use this popular support as leverage to achieve the change they want (Pollman and Barry, 2016). This is made possible by Airbnb aligning their users interests with those of the platform itself, thereby leveraging political power – not unlike the relation between nation-states during the post-Fordist era, in which the competitiveness of a nation's companies came to seem to be in the interests of its citizens, despite often going against their interests as workers (Amin, 2011; Molotch, 1976). This realignment of interest points to perhaps the most salient feature of the effects platforms has on urban neoliberalism: the expansion of entrepreneurialism beyond states and regulation, and into the life of citizens (Foucault et al., 2008). Airbnb describes itself as providing economic opportunities and a "democratisation" of capitalism, by "fostering entrepreneurship" of citizens. The platform claims to function as a neutral arbiter that sets up the rules of the game in which these citizen entrepreneurs can participate freely, taking the shape of a technical encoding of liberalism (Feenberg, 1991). However, just like liberalism (Ranganathan, 2016), the platform acts to shape the conditions of participation, thereby shaping the outcomes of its market (Törnberg and Törnberg, 2018).

Cultural commodification in the platform economy

The engagement of individuals as entrepreneurs enables cultural commodification to seep into previously sheltered parts of the city, enabling efficient extraction of authenticity, as visitors are able to socially feel part of neighbourhood s, rather than being banished to the community-sterile areas assigned by zoning permits. Airbnb makes its hosts "place entrepreneurs" (Logan et al.,1987; Molotch, 1976), pushing them to employ discursive strategies for establishing or rebranding a place's identity to market their neighbourhoods in a way that makes it attractive for the consumption of an outside group (Boyle, 1997; Cox and Mair, 1989; Kearns and Philo, 1993; Kenny,1995; Rofe, 2004; Short,1999). This outside group is increasingly a transnational middle class, as Airbnb brings a changed relationship between urban space and global demand by providing enabling window shopping for urban ban place in physically distant cities (Sigler and Wachsmuth, 2015). This contributes to a transnational gentrification, in which local residents are forced to pay housing prices being set by global rather than local demand, as local capital extracts profit from extra local demand. This global demand is to large extent driven by "urban imaginaries" (Huyssen, 2008) as postmodern tourists treat cities

as symbolic marketplaces to be consumed like any other post-industrial commodity. This requires a construction of consumer tastes to enable extraction of profit from urban land: real estate developers are known to manipulate cultural symbols of the industrial past of a factory building they wish to convert to an office park or art gallery, to as cultural symbols and representations impact on the ability to attract capital and new residents (Kearns and Philo, 1993; Watson,1991; Zukin,1996) These representations of place have a material impact on urban growth and decline – indeed, as Amin and Thrift (2007) argue, economic life is so shot through with cultural inputs and practices at all levels that 'culture' and 'economy' cannot be seen as separate. While marketability could potentially be beneficial for the residents in an area, the benefit rather tends to go to tourists and wealthy residents rather than to improving the wellbeing of local public, who are however the ones to suffer the consequences, such as rent increases and cultural commodification of their communities (Eisinger, 2000; Hoffman, 2003; Smith, 2005; Zukin, 1996).

In other words, Airbnb provides a market place for a global "symbolic economy" - a continual production of symbols and spaces that constitutes a language of social identity, while at the same time framing and giving meaning to the city. The ways that the city is commodified in this symbolic economy also affects the experience of the city itself, signalling who belongs and feels at home in certain areas: culture is a powerful means of control, responding question of class, gender, and ethnicity (Zukin,1996). Consumption in this symbolic economy can thus drive cultural displacement (Abramson et al., 2006; Hyra, 2015; Zukin, 2009), as a neighbourhood changes so profoundly that the residents no longer recognise or identify with their home. This can in turn contribute to residential displacement, as the reduced attachment to place contributes to pushing out residents, leaving neighbourhood s as homogeneous enclaves of transient visitors, rather than integrated, mixed-income neighbourhood s (Maly, 2011).

As place is increasingly treated as any cultural commodity, this is also opening for an expansion of cultural appropriation into physical space. While aspects of black culture have been used for years to market music, it has only recently come to be applied for the marketing of place (Hyra, 2017). While labelling a neighbourhood 'black' used to stimulate white flight, it now increasingly seems to function as a rallying flag for gentrification. This illustrates the way cultural tastes and preferences, including in relation to racial outgroups, are a function of economic interests of elites, suggesting the situation of the current dynamics of urban neoliberalism in a longer history of colonialism and racialised expropriation (Desmond, 2016; Gilmore, 2002; McKittrick, 2011; Ranganathan, 2016; Roy, 2017; Smith, 2005; Uitermark et al.,2007).

While the recent cultural turn in urban studies has brought increased focus on the connection between cultural meaning of place and its economic transformation, there has been limited focus on precisely how ethnic communities are commodified and how this results in extraction of value (Huyssen, 2008; Iwabuchi, 2008; LiPuma and Koelble,

2005). Similarly, cultural displacement has received limited attention compared to residential displacement (Fraser, 2004; Hyra, 2015).

In summary, Airbnb is part of a new phase in urban neoliberalism, in which a global state-like actor markets to a global middle-class by fostering "citizen entrepreneurs", geared to extract value from a global symbolic economy by marketing the urban frontier to a transnational middle-class, thereby contributing to driving cultural commodification and displacement of racialised communities. To substantiate this argument, we now turn to a case study of Airbnb's activities in New York City, focusing on the ways that black-majority neighbourhood s are marketed by white and black hosts on Airbnb, and who profits from this. This allows us to study how cultural appropriation plays part in the dynamics of gentrification and urban change in the postmodern neoliberal city.

Method

This study uses data from InsideAirbnb (2015), from 2017-10-02, complemented using custom-made scrapers, as well as with the 2016 American Community Survey demographic and housing estimates data on NTA level. Listings were linked to NTAs using their location coordinates to allow for comparison between demographic and Airbnb data. Similar to Cox (2017), we use Face++ machine-learning API to classify images of hosts and reviewers by ethnicity (the categories being black, white and Asian). These data were then analysed using primarily Python and Postgresql. The content analysis was carried out using a combination of Critical Discourse Analysis and computational methods, developed in Törnberg and Törnberg (2016). To allow the analysis of the large corpus, we use techniques like Latent Dirichlet Allocation – a form of Topic Modeling (Blei and Lafferty, 2009) – and TF-IDF – a method to compare word frequencies in corpuses – in a process that iterates between close-reading and computational methods, zooming in and out on the discursive landscape. The computational methods were used to provide an overview and to navigate the material, enabling a qualitative analysis which identified a number of framings. In the following analysis, these will be discussed together with a number of illustrating quotes that exemplifies the specific framing.

Critical Discourse Analysis is a heterogeneous research program (Wodak and Meyer, 2009) aimed to study "the way social power abuse, dominance, and inequality are enacted, reproduced, and resisted by text and talk in the social and political context" (Van Dijk, 2001: 353), departing from the view that discourse does not simply mirror social processes but contribute to their perpetuation and production (Fairclough, 1992). Cultural and discursive aspects cannot be completely separated from the economic or political dimensions; as JanMohamad (1985: 64) puts it, there is a "profound symbiotic relationship between the discursive and the material practices of imperialism".

This approach thus provides a powerful way of exploring how culture, discourse and tastes develop in ways that serve the interests of those in power, as exemplified by a large literature on colonial discourse analysis, documenting the ways that the stereotypes of

colonial people fit into the interests of colonial rulers (Chrisman and Williams, 2015; Loomba, 2007; Said, 1978). Since discourses are reflections of real-world processes, discourse analysis allows us to see how power works through language, literature, culture and the institutions which regulate our daily lives. In the context of this study, discourse analysis can thus provide a looking glass into the way that cultural commodification is used to market urban space, and can provide hints about the larger racial and colonial hierarchy within which Airbnb operates.

Airbnb in New York City

We begin by providing a brief overview of Airbnb's activities in New York City. New York City is Airbnb's third largest market, with more than $650 million in hosts-revenue per year. Airbnb in New York has been subject to some controversy, both for functioning as a way to by-pass regulation of commercial short-term rental, but also for enabling racial bias. This Criticism following in particular from studies like Edelman (et al., 2017), showing that hosts are prone to reject African-American guests, and Edelman and Luca (2014), showing that black hosts earn 12 percent less than non-black hosts for the same kinds of housing. Airbnb (2016) has attempted to respond to this criticism, for instance in their 2016 report "Airbnb and Economic Opportunity in New York City's Predominantly Black Neighbourhood s," which used primarily anecdotal evidence to argue that Airbnb helps middle-class African-American families make ends meet. The report boasted that Airbnb usage had risen more than 50 percent faster in black neighbourhood s than in the city as a whole.

Looking at the data (Table 5), we see that compared to hotels, which are predominately located in downtown Manhattan, Airbnb indeed does have a large number of listings outside of the most central parts of the city, in particular in Brooklyn. "Super-gentrified" (Lees, 2003) Williamsburg dominates, followed by Bedford-Stuyvesant and Bushwick, both of which are in the process of rapid gentrification. While Airbnb is clearly focused on more peripheral and residential areas than traditional hotels, it does not necessarily follow that the benefits accrued from this is indeed going to the black and disenfranchised residents of these neighbourhood s. If Airbnb constitutes a blurring of the demarcation between small- and large-scale rental—serving to bring the former into the marketing of place to a transnational middle class and to allow the latter to avoid regulation imposed on traditional hotel lodging—this raises the questions which of these movements are dominant, and to what extent is Airbnb dominated by large-scale actors? We can get a sense of this empirically by looking at the revenue extraction in the platform marketplace.

Room Type	Listings	Reviews	Revenue
Entire home/apt	52%	52%	72%
Private room	46%	46%	27%
Shared room	2%	2%	1%

Table 5. Percentage of listings offering different accommodation types, and their number of reviewsandfractionofgeneratedrevenue. **Source.** Authors.

Airbnb in New York currently has 44,317 listings, owned by 37,108 hosts. These have been reviewed a total of 801,784 times by 703,685 reviewers. Entire-home listings make up half of all active New York City listings, but earn a disproportionate 72 percent of platform revenue, as they tend to be priced higher (see Table 6); 29 percent of revenue is earned by hosts with multiple listings.

Neighbourhood	Borough	Listings	Reviews
Williamsburg	Brooklyn	3,073	69,782
Bedford-Stuyvesant	Brooklyn	2,592	67,606
Harlem	Manhattan	2,111	54,548
Bushwick	Brooklyn	1,704	34,122
East Village	Manhattan	1,608	39,864
Upper West Side	Manhattan	1,483	31,194
Hell's Kitchen	Manhattan	1,399	42,669
Upper East Side	Manhattan	1,333	26,973
Crown Heights	Brooklyn	1,188	24,120
East Harlem	Manhattan	909	25,781

Chelsea	Manhattan	847	20,451
Midtown	Manhattan	838	17,652
Greenpoint	Brooklyn	816	13,331
Lower East Side	Manhattan	770	19,701
Washington Heights	Manhattan	680	11,967
West Village	Manhattan	661	14,318
Astoria	Queens	650	15,917
Clinton Hill	Brooklyn	494	11,906
Flatbush	Brooklyn	443	7,833
Prospect-Lefferts Gardens	Brooklyn	441	8,879
Park Slope	Brooklyn	404	9,389
Long Island City	Queens	361	10,038
Fort Greene	Brooklyn	354	8,360
Chinatown	Manhattan	324	7,691
Greenwich Village	Manhattan	319	6,538
Kips Bay	Manhattan	313	6,252
Financial District	Manhattan	307	4,695

Table 6. Number of Airbnb listings (that have received reviews) and reviews per neighbourhood, for neighbourhood s with more than 300 listings. **Source.** Authors.

By assuming that the number of monthly reviews multiplied by the listing price for all listings of a host is proportional to the income, we can look at the revenue distribution of the marketplace. Figure 4 shows this distribution as a Lorenz curve, i.e., comparing the cumulative share of revenue with the cumulative share of hosts. This shows that 10 percent of hosts take in about 53.8 percent of the revenue, giving us a Gini coefficient of 0.723. While this is a highly unequal revenue distribution, it is not out of the ordinary for Airbnb marketplaces, falling close to the middle of the 41 cities that this paper looked at for comparison[15]. This suggests that Airbnb is primarily a vehicle for large-scale rental, but that smaller-scale hosts still play an economic role in the marketplace that is not insignificant.
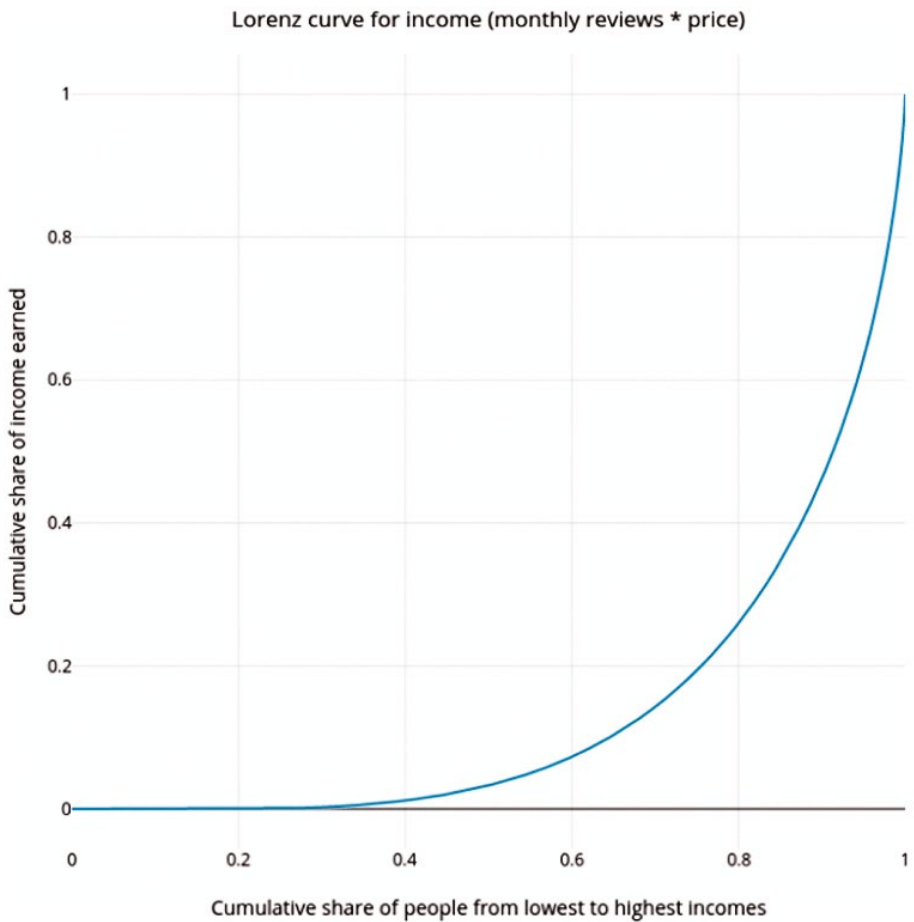
Figure 4. The Lorenz curve of host revenue for the Airbnb marketplace, showing what fraction of the population takes what fraction of the income. For instance, we can see that the 90 percent of the population represents only 46.2 percent of the total revenue, implying a highly unequal economy. **Source.** Authors.

Looking at the skin colour of hosts and guests, we can see that while reviewers overall are 8.7 percent black, reviewers of black hosts are 14.7 percent black, implying a rather strong racial homophily between guests and hosts—possibly the result of, for example, preferences among guests, discrimination in the hosts' selection of guests, or confounding factors such as lack of resources. As Table 7 shows, both reviewers and hosts are significantly whiter than the overall population of the city. This goes in particular for black-majority neighbourhood s, where 68.8 percent of hosts are white, whereas the population is only 25 percent white. This overview implies, in line with Cox (2017), that the new rent gap (Wachsmuth and Weisler, 2018) is primarily exploited by white users, in practice implying that the benefits accrued from the marketing of the cultural resources of these black communities are not primarily going to the local residents.

Room Type	Black demographics	Black hosts	Black reviewers
New York City overall	26.0%	13.3%	8.7%
BMN	75.0%	31.2%	15.1%
White hosts	--	--	8.1%
Black hosts	--	--	14.7%

Table 7. Ethnic distribution of hosts, reviewers and overall demographics of NYC, when including only black and white. For demographics data, "white" is operationalised as all ethnicities except Asian and African-American, to match the Face++ categorisation. Black-Majority Neighbourhood is defined as neighbourhood s where more than 50% of the total population identifies as African-American. As can be seen, whites are strongly overrepresented as both hosts and reviewers. Particularly notable is the exceptional over-representation of white hosts in Black-Majority Neighbourhood s (BMN). **Source.** Authors.

Selling black places

Having provided an overview of Airbnb's activities in New York City, we turn to the question of this paper: how are black-majority neighbourhoods marketed on Airbnb, and how do guests describe their consumption experience? We first turn to how hosts describe the neighbourhood s of the listing that they are marketing. These texts are attempts to market the neighbourhood by framing it in ways that one thinks will attract one's "imagined audience" (Litt, 2012), describing it as a consumable experience. The analysis focuses on comparing how black and white hosts describe the black-majority neighbourhood s that they are marketing.

To provide an overview of the differences in discourse between white and black hosts, we begin by running an algorithm which identifies what words are most statistically overrepresented in a comparison of documents. The result is shown in Figure 5. White hosts tend to use words such as "hipster," "artist," or "writer"—emphasising cultural experiences, using terms associated with narratives of classic artist-led gentrification (Ley, 2003; Zukin, 1989; 1996). Black hosts instead tend to emphasise "security," "surveillance," and "police": pointing toward a narrative of contradicting an implied understanding of the neighbourhood as dangerous. This overview can be further supported by using LDA: a technique that finds words that tend to occur together in multiple documents, thus identifying "topics" on which the documents focus (Blei and Lafferty, 2009). Here, we run the topic model as a function of the race of the host, by looking at the fraction of white vs. black hosts for each topic. This analysis (see Table 8) reinforces the view of the word frequency comparison. The white-dominated topics emphasise cultural consumption, restaurants, and walkability, whereas black-dominated topics tend to focus on security, police, and more practical consumption, such as supermarkets or access to transportation.
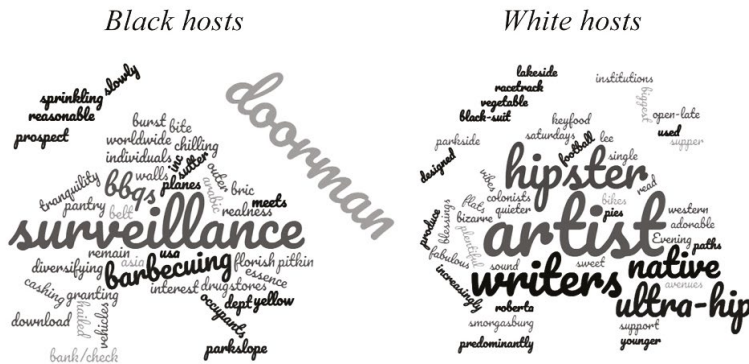
Figure 5. A word cloud representation of the most overrepresented words when comparing white and black hosts' descriptions of their neighbourhoods. **Source.** Authors.
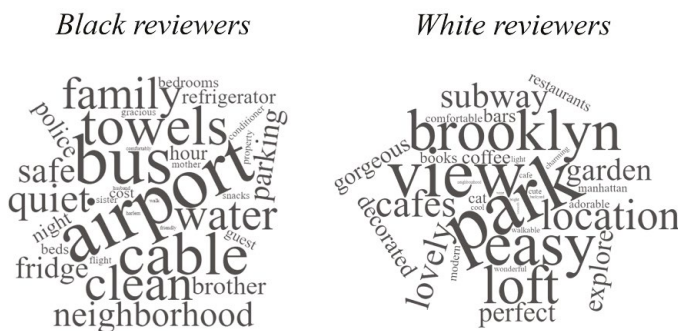
Figure 6. A word cloud representation of the most overrepresented words, comparing white and black reviewer comments of black-majority neighbourhoods. **Source.** Authors.

Black%	Topic words
15	brooklyn park prospect restaurants bars museum neighbourhood great coffee shops
18	park restaurants neighbourhood central walk great away bars minute manhattan
19	busy general block day native trains possibility away may times
21	min away walk restaurants park neighbourhood central airport many manhattan
22	book harlem neighbourhood well renowned restaurants five white shops busses
22	park blocks central restaurants area harlem away neighbourhood new bars
22	johns forest diversity simple st.commons part several new borough
22	area brooklyn lenox neighbourhood restaurant views avenue dinner located museum
32	neighbourhood also police located around rd quiet block accessible middle
34	miles restaurants min park th distance walking green street st
40	acres security india drinks doorman city town rest door via
47	park away central shopping transportation jamaica casino close neighbourhood walking
48	neighbourhood stores safe working kinds restaurants long drug street jamaican
51	jfk minutes airport away mall stores shopping several supermarkets green
57	parking salons jamaica neighbourhood hair vehicles class safe free years

Table 8. Output of an LDA of the neighbourhood descriptions of black-majority neighbourhoods. The rows are sorted by the Black (%) column, which shows the percentage of hosts whose neighbourhood descriptions are associated with this topic who are categorised as black. **Source.** Authors.

Using this initial computational analysis as a map to navigate a discursive landscape (as outlined in Törnberg and Törnberg, 2016), we move into close reading to allow in-depth study of the ways discourses are employed in the marketing. Here, we use the topic model as a way of identifying what topics and discourses are most characteristic of black vs. white hosts in these neighbourhood s. While this is the result of the systematic reading of a large number of documents, the description will be kept relatively brief.

Adventures at the urban frontier

This close reading reveals a common framing in which neighbourhood s are de-scribed as places to be explored, filled with "authentic" and "exotic" cultural experiences to be "discovered" by the daring visitor (JanMohamed, 1985; Zukin, 2009). To visit a local bodega, or to enjoy the 'neighbourliness' of the next-door African American, is described as to have a unique, cultural experience. Such narratives of exotic exploration natural-ly involve a certain level of danger, as exemplified in the description of a white host in Crown Heights, Brooklyn:

> "This neighbourhood is a diamond in the rough, especially in the summer months you will get that Brooklyn authenticity of people chilling, hanging out, barbecuing and enjoying the weather until the small hours of the morning. If you can't 'walk like you belong' then this isn't the location for you."

In these explorations, the very community of the neighbourhood is understood as part of the experience: "There are always people hanging out on their stoops, and every-one you pass greets you." This thus functions to package local culture into consumable experiences for an outsider group, as the neighbourhood is framed as a playground for touristic urban fantasies. As one white host markets his neighbourhood:

> "Bushwick has been recently named as the new Soho. A neighbour-hood full of graffiti art, alternative art galleries, artist studios, bars, coffee places and restaurants. Close to Williamsburg, a vibrant hipster neighbourhood with restaurants, bars, flea markets, concert venues."

Transnational gentrification

Aware that they are addressing an international audience, hosts often attempt to market their neighbourhood accordingly. For instance, they may describe their neigh-bourhood s using references to other famous, and often gentrifying, areas. This con-tributes to positioning the neighbourhood in the world, and decontextualising cultural capital (Hannerz, 1990; McEwan and Sobre-Denton, 2011), thus serving to emphasise the globalising tendencies of gentrification (Sigler and Wachsmuth, 2015). This fits into the notion of today's cosmopolitan middle class having stronger ties to neighbourhood s in global cities than to the city that surrounds them, thus blurring the distinction between

touristic and residential consumption of urban space (Gant, 2016; Sassen, 2016). These global neighbourhood s come with global urban imaginaries, as illustrated by a host in Bedford-Stuyvesant: "Brooklyn is where it's at. Kevin discovered this while traveling in France, when he heard 'Très Brooklyn!' used to invoke something hip and exciting.

Authentic gentrification

A central part of this urban imaginary, referred to by primarily white hosts, is the very notion of gentrification itself. Gentrification is something inherent in and characteristic of New York in general, and Brooklyn in particular, being understood as a place undergoing rapid change: this is part of its brand and urban imaginary, and so to experience "authentic" Brooklyn, one needs to experience—and indeed take part in—its gentrification process. This discourse contains within it an implicit understanding that gentrifying neighbourhood s are perishable goods; early gentrification is preferable to late gentrification, as it means the neighbourhood is "more authentic." This means that the frontier will keep moving, as if driven by manifest destiny. This is visible, for instance, in suggestions that "Williamsburg has become Manhattan," but "Bushwick is the new Williamsburg"; signifying that the urban frontier has changed, and so the fashionable visitor in search of authentic gentrification will need to follow. As a white host in Bedford-Stuyvesant, Brooklyn, notes: "Not totally gentrified yet, Bed-stuy is the new place to be in Brooklyn. Enjoy before the hipster invasion which already began!"

Hosting while black

While white hosts emphasise local neighbourhood s as cultural experiences, black hosts often seem acutely aware that they are not only speaking to a predominately white audience, but that this audience furthermore see them as "black." This seems to bring a perceived need to counter and dispel presumed stereotypes and racial anxieties. This in part expresses itself in black hosts tending to focus on safety, often emphasising security guards and proximity to police stations. As a host in Bedford-Stuyvesant puts it: "The feeling of safety as you walk outside and realise that a police station is directly across the street gives me an extra sense of security."

The insider's perspective

The neighbourhood is often said to be "family oriented" and "very safe"—or at least "relatively safe." These attempts to negate racial stereotypes at times comes to the surface in more explicit ways. For instance, some hosts reference previous negative experience with guests, motivating them to provide warnings that the listing and neighbourhood is "diverse." While these may refer to negative experiences, they are almost always expressed with the constant veneer of positivity, as illustrated by a host in Flatbush: "this is a Black neighbourhood. We are Black people. We wouldn't mention this if it wasn't an issue with some renters in the past. Bigots need not apply:)."

Black hosts furthermore tend to see their neighbourhood from the "inside" rather than through an outside perspective. First, this results in a focus on the more mundane selling points of their neighbourhood, such as access to public transit and parking, or proximity to stores and discount shopping, as illustrated by both the topic model and the word overrepresentation data in Figure 6. A typical description by a host in Bedford-Stuyvesant reads: "Family oriented neighbourhood. Close access to a Grocery Store, Family Dollar, and on street parking." This insider's perspective also makes it more difficult to tell a story using poverty, drugs, and crime as attractive, edgy, and authentic elements, as is implicit in white hosts' discourse about "adventures in the urban frontier" (Hyra, 2017). The stereotyped imaginary of a "ghetto" full of carjackings, muggings, and shootings, developed from TV shows and movies, makes it significantly easier to cast these as exciting to other outsiders, than if one has lived in the multifaceted reality of the neighbourhoods, one is marketing.

Buying black places

While hosts' neighbourhood descriptions are attempts at marketing the neighbourhood to an imagined audience of tourists (Litt, 2012), the reviews are guests' opportunities to describe their experiences. These texts are primarily intended to communicate to future potential guests of the host, but the reviewer also communicates with the specific host, as well as to the larger community of Airbnb users. Reviewers thus aim to sell themselves by managing impressions, in part by using their touristic consumption to fulfil the cultural preferences of their imagined audience (Goffman, 1970). The reviews therefore provide a lens not only on how guests view their consumption experience, but also what they believe is seen as positive in the larger community. We will here focus on the experience of white guests in black-majority neighbourhood s. The focus on white guests is motivated by race not being a universally uniform construct, making the social implications of the skin colour of a tourist difficult to interpret, in particular when it comes to the relationship to US black-majority neighbourhood s—to which these reviewers are generally still "outsiders." To provide an overview of the differences in discourse between white and black guests, we again look at the most statistically overrepresented words in a comparison of documents. The result is shown in Figure 6.

The brave gentrifier

White guests tend to frame their experiences in ways that emphasise their own adventurous spirit, often hinting that the experience requires a bit of sophistication. This frame focuses on the relationship between the reviewer and the place, presenting the reviewer as a pioneer exploring an uncharted foreign land. A common way to describe the experience of the neighbourhood in this frame is along the lines of: "at first take," "at first look," and "for the untrained eye," the neighbourhood s look "sketchy," "ghetto," and "scary," but for the more "adventurous," "metropolitan," and "well-travelled" it is in fact

"authentic," "trendy," and "cool." These positive descriptions tend to use words like "gritty," "real," and "authentic" when describing the neighbourhood s. As a reviewer of a listing in Prospect-Lefferts Gardens, Brooklyn, puts it:

> "The neighbourhood feels very authentically Brooklyn. I never felt unsafe, but it definitely had the "trendy" grunge and multicultural-ness [sic] that one would expect when thinking about stereotypical Brooklyn. It will be a shock if you're coming from a quiet suburb (like me), but I adjusted quickly."

This discourse tends to marry a narrative of "danger," often born out of actual histories of high crime rates and destitute conditions, with stories of the hidden gems of the area: restaurants, bars, and other cultural amenities that are available only to those who dare explore. As a reviewer in Crown Heights, Brooklyn, puts it: "So if you are slightly adventurous and keen on crazy life stories, this is definitely the place to go to for you."

Neil Smith (2005) referred to this as the "urban pioneer" mentality: part of lifestyle trends that encourage young suburbanites to migrate to the inner city in search of urban "grit" and "authenticity" (Lloyd, 2010; Zukin, 2011). In this case, however, it is consumed as a touristic experience by a transnational middle class, on the hunt for "exotic destinations." Just like the hosts, guests explicitly reference the neighbourhood s' ongoing gentrification processes as part of a desirable experience, as illustrated by a guest in Bedford-Stuyvesant: "This part of Bed-Stuy is about one-fifth gentrified (with the house containing this rental definitely one of the pioneers)."

In these narratives of adventure, white guests at white hosts in black-majority neighbourhood s tend to emphasise that their house provided a "safe space" to explore the area, or, in commonly used terminology illustrated by a reviewer in Bedford-Stuyvesant: "Was great to have such an oasis in this urban jungle!"

Packaging blackness

The "adventurous experience" of white guests in black-majority neighbourhood s at times becomes too adventurous. Some guests, in particular white guests staying at black hosts, describe feeling intimidated by the neighbourhood or even by the hosts, using words like "dark," "scary," or "ghetto." As a reviewer Bedford-Stuyvesant puts it:

> "the neighbourhood is pretty "SCARY", I did not feel safe walking at night. Lots of neighbours on the street but the only one that spoke to us was some guy pushing a cart full of "glow lights, sticks etc" [...] Noah tried hard to sell us on "BEDSTUY" saying its the "VENICE" of LA, sorry but I think its more like the COMPTON of LA."

Again, these racial undertones at times become explicit, as illustrated by a guest in Crown Heights, Brooklyn: "the neighbourhood in general looks very ghetto. Shahana is right in her listing, if you are intimidated by a specific race, do not book with her." This illustrates the balancing act involved in marketing blackness, as the back-side of its "au-

thentic grittiness" is a perception of "danger," at times resulting in comments such as on a listing in Crown Heights: "We did not feel safe at all in this area and if I return to NYC, I will not stay in Crown heights or even in Brooklyn."

This balancing act seems to make it easier for white hosts than for black hosts to market black neighbourhood s, as the latter are disadvantaged both when it comes to having the cultural resources necessary to frame and package their neighbourhood as a cultural experience to white outsiders, and to themselves function as culturally "safe oases" to their guests.

Colonial discourse and urban neoliberalism

We will now broaden the analysis of the results of this discourse analysis, tying to a broader discussion of the cultural effects of platform capitalism as a new stage of urban neoliberalism. The discourse analysis shows how the white place entrepreneurs of Airbnb use racial stereotypes to attract white guests, by exoticising difference, emphasising foreignness, and treating communities as consumable experiences for an outside group. White visitors in turn consume these cultural symbols to decorate their own identities of touristic consumption, describing themselves in colonial tropes of brave white adventurers exploring uncharted territories: glorious conquests no longer over gold and ivory, but over a sandwich at a local bodega. This reveals a territorial ideology (Short, 1999) within which blackness means authentic urbanity, and urbanity means poverty, danger, and excitement.

Scholars are not far-fetched in describing gentrification as the new colonialism, as these discourses fit into a long history of tailoring racial stereotypes to fit the specific needs of colonial policies (Chrisman and Williams, 2015; JanMohamed, 1985; Loomba, 2007; Said, 1978). In the historical context—in which colonialism was driven by western countries' capital facing scarcity of labour, combined with a superabundance of capital thus requiring a move to subordinate non-industrialised countries to acquire the labour needed to sustain its own growth (Lenin, 1999)—these stereotypes often took forms creating a critical dependence of wage labour among colonial people (Loomba, 2007). Today, as the post-industrial production machinery has turned to cultural production, the scarcity it faces is not primarily labour, but rather cultural authenticity and uniqueness. As commodification tends to destroy the local and unique, capital needs to find ways to maintain its supply of the uniqueness that is the basis for its appropriation of monopoly rents (Harvey, 2012; Zukin, 1996).

This brings a search for new identities and cultural symbols to commodify; an expansion into the "urban frontiers" that parallels the colonial scramble for Africa but now not in search for labour and material to feed industrial production, but for symbols to quench an insatiable thirst for authenticity and difference for the production of consumption in a post-industrial economy. This points to a phase perhaps best described as an accumulation by cultural dispossession (Harvey, 2003), in which extracting cultural authenticity becomes essential for continued growth.

This regime of accumulation expresses itself as a form of cultural neo-colonialism, extracting that unique sense of authenticity found in the suffering of those forced to live outside the fluidity of the commodified symbolic economy (Zukin, 2009). This points to a new central distinction: between those with the privilege of a postmodern fluidity of identity, able to take on or shed identities in order to communicate through a symbolic language, and those who are left with fixed identities, branded on their skin, on their bodies, or in where they live. This implies an era in which privilege means having one's identity take the form of performances through consumed cultural symbols, in which belonging to the norm implies having one's identity be a tabula rasa on which one is free to paint without risking being reduced to the crayons that one uses. Authenticity becomes a scarcity as symbols increasingly become disconnected from the real (Baudrillard, 1994), to be found and extracted from those who lack the privilege to freely move between meanings and symbols. Those who are seen as part of their place, rather than just temporary visitors; those who are seen as their ethnicity, rather than just wearing its symbols; those who are not granted the benefit of an assumed ironic distance.

This separates between two co-existing racial stereotypes, serving different purposes: the traditional colonial stereotype serving a supply of wage labour of African Americans as "dangerous," "physical," "strong," and "hard-working," invoking what Derek Hyra (2017) calls a "blatant racism," and the new stereotypes of African Americans as part of an "exciting" and "authentic" consumption experience, invoking what Hyra calls a "subtle racism." While the blatant racist stereotype has been highly profitable, by legalising displacement and housing discrimination for example, it can at times be detrimental to the interests of real estate capital, by reducing the demand for black-majority neighbourhood s. Therefore, capital needs to find a way to cast aspects of black stereotypes as part of attractive consumer symbols—even real social ills, such as poverty and crime in disenfranchised neighbourhood s, must be cast as desirable aspects of a gritty, urban experience to a gentrifying elite. Just like historic colonialism, this not only exploits but dehumanises and objectifies the colonised subject, in a reification now not as labour power but as consumption experience (Césaire, 2001). In this construction of race, subtle and blatant racism thus co-exist, the former allowing black-majority neighbourhood s to be marketed as hip and attractive, while the latter legitimises the displacement of previous residents.

While black hosts are certainly part of the real estate capital participating in marketing the urban frontier, they do not have the same discursive access to draw benefit from this new "subtle racism": they are not as readily seen as the pioneers in these dreams of colonial adventures, but rather cast as its objects—what is being consumed. Their marketing of neighbourhood s is thus left attempting to battle the old "blatant racism" of the black body as "dangerous" and "scary," by emphasising safety, policing, and security.

As illustrated by a recent example of a Brooklyn bar drilling their walls with fake bullet-holes and marketing their US$10 craft beers in brown paper bags (Helmore, 2017), the effect on local communities from this marketing is a cultural commodification which shares many features with the much-debated Disneyfication (e.g. Zukin, 1996)—but while Disneyfication tended to remove any reference to the negative, this process rather creates a virtual Disneyland of past horrors, in which poverty and suffering—whether imagined or real—are commodified and sold for touristic consumption. As their neighbourhood s are marketed, residents are forced to watch stereotyped versions of personal traumas become the vacant diversions for selfie-stick-wielding tourists. Visitors whose temporary stays permit a fleeting and fluid relationship to the cultural symbols of the neighbourhood s, allowing symbols of disenfranchisement and poverty to serve as an ironic contrast emphasising precisely privilege and affluence. The end result of this is cultural displacement, as residents lose their sense of their neighbourhoods as their home.

Perhaps the starkest expression of the way these racial cultural dynamics reinforce and drive gentrification is the way that gentrification itself is used as part of the marketing of gentrifying neighbourhoods, both as part of the urban imaginary of an "authentic" New York, but also in providing a sense of consumption urgency. In this territorial ideology, the dynamics of gentrification itself becomes yet another set of symbols in the symbolic economy used in the marketing of place. The dynamics of urban change are thus themselves made part of the dynamics, in a way that pushes forward and intensifies the very process that it describes: "gentrification" drives gentrification. This reflexivity recalls the discussions on the role of "emergence" in gentrification, showing precisely why "there is nothing natural about gentrification" (Slater, 2014; Uitermark, 2015).

Conclusion

This paper begins from the view, in line with the overall argument of this special issue, of Airbnb being part of a new stage of urban neoliberalism, giving real estate capital a vehicle to bypass taxation and local zoning regulation, and gearing homeowners to market their piece of the urban frontier on a transnational market, thus expanding entrepreneurialisation from governance structures to "entrepreneurial citizens" (Tomassetti, 2016). This creates not only a new rent gap (Wachsmuth and Weisler, 2018) but also expands on the extraction of cultural authenticity from urban place. As the platform turns homeowners into entrepreneurs, they also become its cultural agents in the city: place entrepreneurs charged with extracting value from the tastes of a global middle class by marketing place and community to outside groups, thus contributing to driving cultural displacement (Molotch, 1976).

Coming from this perspective, the paper used a critical discourse analysis approach to look at cultural aspects of racial gentrification, thinking of the marketing of minority neighbourhood s as a form of colonial discourse, shaped by economic interests. The

specific question driving this exploration was: how are black-majority neighbourhoods marketed on Airbnb in New York City, and how do guests describe their consumption experience?

This discourse analysis provided the foundation for expanded discussion of the current stage of neoliberalism and racial appropriation, showing the ways that new economic pressures are resulting in a transformation of racial stereotypes. This analysis found that despite claims of a liberal "free-for-all" market, now encoded digitally in technical code (Feenberg, 1991), the platform effectively perpetuates racial inequalities, continuing a long history within which race is foundational to the economic and geopolitical order, and white appropriation a fundamental pillar of wealth creation (Gilmore,2002; McKittrick, 2011; Ranganathan, 2016; Roy, 2017; Smith, 2005; Uitermark et al., 2007). Airbnb thus forms a lens through which the racially illiberal underbelly of liberalism is made visible for study. This lens suggests that consumer tastes in gentrifying neighbourhood s are far from being "naturally occurring" (Ball, 2014; Slater, 2014), but are constructed to enable extraction of profit from urban land: emphasising the conjoined racial processes of property making and property taking. The paper, however, also suggests methods to explore and critique this type of cultural process, using computational interpretative methods that bridge the gap between what Brown-Saracino (2016; 2017) refers to as "micro" and "macro" approaches to gentrification.

In summary, this suggests that the spatialised form of cultural appropriation—to which Airbnb provides a market—accumulates value by cultural dispossession and displacement, and thus constitutes a form of cultural postcolonialism at the urban frontier. This situates the new stage of urban neoliberalism in a long history of settler colonialism, imperialism, slavery, and racialised expropriation.

Notes

* Törnberg P. and Chiappini L. (2020) Selling black places on Airbnb: Colonial discourse and the marketing of black communities in New York City. Environment and Planning A: Economy and Space, 52(3), 553–572. https://doi.org/10.1177/0308518X19886321

15. The sample was based on the cities available from InsideAirbnb.com. Gini average: 0.691, median: 0.704, variance: 0.005652. The full list: Montreal: 0.822. Hong Kong: 0.805. Austin: 0.805. London: 0.79. Sydney: 0.774. Toronto: 0.759. Brussels: 0.758. Berlin: 0.749. Los Angeles: 0.749. Boston: 0.748. Paris: 0.746. Melbourne: 0.742. Vienna: 0.741. Athens: 0.738. Washington, DC: 0.735. Barcelona: 0.73. Madrid: 0.729. Rome: 0.728. New York City: 0.723. San Diego: 0.715. Quebec City: 0.704. Geneva: 0.699. San Francisco: 0.682. Mallorca: 0.678. Copenhagen: 0.674. Oakland: 0.666. Vancouver: 0.665. New Orleans: 0.645. Antwerp: 0.637. Northern-Rivers, Australia: 0.635. Denver: 0.634. Nashville: 0.628. Edinburgh: 0.625. Venice, Italy: 0.624. Chicago: 0.624. Amsterdam: 0.624. Seattle: 0.613. Victoria, Canada: 0.56. Portland: 0.553. Santa Cruz: 0.54. Asheville: 0.522.

Chapter III
Deus ex machina. Makerspaces in Milan and their transformative potential*

Introduction

Spaces organised around the practice of "making" are becoming an increasingly frequent sighting in cities around the world, in particular in Europe and North America. These "makerspaces" tend to provide access to a variety of equipment, including 3D printers, laser cutters, computer numerical control (CNC) machines, soldering irons, and even sewing machines, to feed the recent wave of do-it-yourself (DIY) culture. In the emerging literature, however, these spaces are portrayed as much more than merely a new locus for craftwork and urban social encounters. They have become the focal point for a growing discourse that claims urban economies of the future will be radically different from those of today and yesterday. In this discourse, the spaces are acclaimed as the driver of a fundamentally alternative mode of production, with its own distinctive spaces of work, and the potential to reinvent the industrial economy, the city, and urban governance structures.

It is hard to imagine that such narratives would not contain a hint of the exaggerated optimism and hyperbolic storylines that have often tended to surround the emergence of new technologies. But this is exacerbated by the lack of a competing and more serious social scientific understanding of the makerspace phenomenon. The literature broadly tends towards an over-reliance on theoretical speculation and conceptual discussion, and a lack of grounding in empirical evidence. Due to this, even the most fundamental questions – such as what even defines a makerspace – remain either unanswered or contested, leaving it far from clear what, if any, role these "makers" will play in shaping urban economies and urban life in the future.

This chapter aims to contribute to ameliorating this situation, by looking at the claims made in the literature in the light of an in-depth case study. The chapter first provides a brief overview of some of the narratives and claims made in the literature surrounding the maker movement and their suggested transformative potential. These narratives are then elucidated through an ethnographic case study on the maker movement in Milan – a city where makerspaces and maker-related activities have proliferated substantially in recent years. The fieldwork, conducted from 2013 to 2017, provides a detailed picture of how the maker movement has evolved in this particular urban context. This provides an empirical foundation for a more informed discussion of the claims and speculations regarding the nature and transformative potential of the maker movement, enabling us to begin moving towards a more nuanced and less hyperbolic understanding of the role of these emerging urban practices.

Makerspaces and the dreams of a coming revolution

The attention given to makerspaces arguably has its origins in the more established P2P practices within software development, whose affordances and demands have enabled new forms of organisation and production processes. In software production, the hierarchical and top-down organisational characteristics of factory production gen-

erally have been replaced by decentralised peer practices, as epitomised by the open-source movement. The emergence of technologies such as the 3D printer, capable of turning information into artefacts, implies the formation of a direct link that extends the logic of the information realm into the physical world. This development thus has been seen as poised to expand the logic and conditions of software production also into the realm of physical production.

This has inspired several authors (e.g. Benkler, 2006; Benkler and Nissenbaum, 2006; Rifkin, 2011; 2014) to associate peer production with a coming – or even ongoing – "third industrial revolution" (Hatch 2013; Troxler 2013), in which peer production is appropriated into various reformist liberal (e.g. Bauwens 2005) or revolutionary Marxist (e.g. Rigi, 2013) grammars. This literature suggests that "these new producers will reinvent the industrial economy" (Anderson 2012: 229) and that they are "poised to overhaul our political economy in unprecedented ways" (Bauwens, 2005: 1).

The literature on peer production as a technology network for useful social production is flourishing, particularly in the field of science and technology studies (Smith 2014). The argument here is that features of technology networks are relevant in practices such as participatory design and critical making (Tosh, 2008; Ratto, 2011; Disalvo, 2012; Maxigas, 2012; Smith et al., 2013). As such, the call for alternative production is embodied between prototyping activities and democratisation of production, in the so-called critical making. Again, Smith (2014: 6) insists "prototypes provided a practical means to engage people in political debate about the relationships of technology in society". This statement is based on the assumption whereby prototyping technology, for instance, producing software and microelectronics, remains a focal activity, but is presented as a catalysing device for mobilisation around associated political, economic, and social issues (Cooley, 1987).

These narratives furthermore tend to forecast the replacement of top-down and disciplined production associated with large-scale factory production with a "locally organized, decentralized, scattered production in small production facilities" (Sylvester and Döring, 2013: 223). The new factories will be a host of various forms of "open creative labs", such as coworking spaces, makerspaces, FabLabs, and urban living labs. The common features of such spaces are said to be openness, peer production, knowledge-sharing, and collaborative practices (Schmidt et.al., 2014; 2016), which delineates an alternative economic and spatial imaginary. Furthermore, when imagining the possibility of an alternative economic development, it is important to take into consideration the debate on the role of these new forms of shared-work spaces in the future of urban economies. The question of physical proximity in determining forms of collective innovation and distributed agency has been extensively discussed in economic geography literature and innovation studies (e.g. Hansen, 2014; Capdevila, 2013; Cohendet et al., 2014).

A central notion in this literature is that "open creative labs" in general, and makerspaces in particular, constitute local anchors for both local and global communities

(Capdevila, 2014). In short, the spaces function as meeting spaces that enable communities to be bound together, thus providing platforms for the formation of new forms of collective agency. This local anchoring enables them to constitute the basis for the development of social practices that also go outside the realm of production, and into other aspects of (urban) social life. The spaces are thought to be the foundation for a movement of grassroots activism that would bring the spaces into relevance also within the realm of governance, education, and welfare, laying the ground not only for new forms of production, but also for "an emerging collaborative age" (Rifkin, 2011: 5). Some authors, in other words, see makerspaces as providing bottom-up and decentralised alternatives to traditional top-down government-organised services (e.g. Bauwens, 2005; Gershenfeld, 2005; 2012; Rifkin, 2011). Peer production is seen as enabling a form of self-organised welfare system, which may provide an alternative to the current forms of welfare. One may thus extract three claims regarding the role and transformative potential of the maker movement from this literature, which we will make more explicit in order to enable them to be put under empirical scrutiny.

First, makerspaces are seen as alternative social spaces that bring a new transformative potential to urban social life. This claim goes beyond merely the provision of a meeting space, in that an alternative social space should also provide some form of protection from the pressures of market forces (Bathelt and Cohendet, 2014: 3). The notion of an alternative social space implies not only the potential for meetings, but also that there is some level of protection from the powers that be (Benkler, 2006; Rifkin, 2011; Anderson, 2012). Such social spaces are seen as central for creating the possibilities to develop alternative practices and foster oppositional virtues and consciousness.

Second, makerspaces are seen as providing an alternative mode of production that is thought to fundamentally transform the economic system or, at the very least, the economic imaginary (Smith, 2014). While this claim comes in a number of different versions, we extract from them the common claim that the mode of production supported by makerspaces is challenging the current economic system. The decentralised and collaborative form of production associated with makerspaces is thus not merely a continuation of current economic conditions, but something fundamentally alternative (Dougherty, 2012; Maxigas, 2012; Troxler, 2013).

Third, the spaces are seen as providing alternatives also outside of the realm of production. The maker movement is suggested to be capable of providing an alternative to existing systems for the provision of public services by organising services, for example, for education, healthcare, and care for the elderly (e.g. Dawkins, 2011; Torri, 2017). Again, we take this to imply that the maker movement is not merely a continuation of, but a challenge and alternative to, the current welfare regime. It is primarily these three claims that we will cast light on through the following case study on makerspaces in Milan.

Makerspaces in Milan

We will now look in detail at the maker movement as it has played out in Milan. This section is based on an ethnographic study combining participant observation (documented in field notes), document analysis, and qualitative interviews conducted in Milan between 2015 and 2017. The main data were collected from qualitative interviews; the informants were makers, civil servants, and aldermen within the Milanese metropolitan area. The section refers also to several interviews about the maker movement concentrated in Milan, conducted between 2013 and 2017, and partially used in Chiappini and d'Ovidio (2017), Chiappini and Anselmi (2017), and Anselmi and Chiappini (2017). All included quotes from interviews and statements have been translated from the original Italian by the authors.

The Milanese context

In the past decade, urban governance in Milan has been characterised by the significant and widespread involvement of civil society (i.e. non-governmental organisations (NGOs), charities, foundations, and other third sector – voluntary, community, non-profit – organisations) compared to other Italian cities. More- over, the private sector occupies an important position in terms of investments and agenda-setting within Milanese urban governance. Private actors tend to play a crucial role in the project implementation process, in particular in policy areas such as welfare, culture, and urban services (Armondi and Bruzzese, 2017). The recent transformation of Milan has been supported by strong political action and the definition of a new urban agenda, in which coworking and makerspaces have become policy subjects. In this context, the maker scene has been subsumed within a wider political strategy oriented towards revitalisation of the local economy and enhancement of social cohesion[17].

In 2013 the first open call addressed to the new phenomenon of making was created under the label of "Creative Maker". The Municipality of Milan makerspaces: in 2015 the Central Directorate for labour policies, economic development, and universities, Economic Innovation Sector, Smart City, and University allocated 500,000 euros for measures in favour of coworking and 300,000 euros for makerspaces and FabLabs. The local authority furthermore has adopted soft policy tools to support the dissemination of makerspaces, FabLabs, and coworking spaces.

First, the Municipality provides direct economic and financial subsidies: delivery of economic incentives in favour of individual subjects to set up the lab and delivery of economic incentives in favour of suppliers of services already qualified (i.e. support to the space, improvement of machinery, etc.). Second, there is a list of qualified spaces within the city of Milan, inclusion on which constitutes an important source of public visibility and credibility for the makerspace. The requirements for inclusion on the list are: the availability of digital manufacturing equipment; training courses for the use of machines; public opening times of at least twenty-five hours per week; and a website with

information on services, initiatives, timetables, fares, etc.[18]

The intervention by the local state apparatus is twofold. It includes the development of productive and cultural renewal of the city and encouragement of extensive processes of urban regeneration (d'Ovidio and Rabbiosi, 2017), with the ultimate hope of creating job opportunities. In general, the new urban economy is considered by the local state and by makers as an alternative driver of urban development, pertaining to the organisation of work and the production and provision of goods and services on an urban scale. This refers, in particular, to the horizontal organisation of work, low-intensity production for local markets (Bialsky et al., 2015), non-commercialised cultural activities, digital manufacturing, and "prosumption". Makerspaces are, by these terms, new productive centralities located in urban areas. In the case of Milan, makerspaces are often scattered public-private hubs, community labs, and open-creative ateliers (Armondi and Bruzzese, 2017). The local government deploys different existing urban resources, like abandoned buildings, brownfield sites, and former ex-industrial sites, both in central urban areas and outside of the inner city. Beyond the widely explored question of the transformation of and spatial opportunity provided by the large areas made available by the downsizing and re-localisation of Fordist production plants, today there is a need to deepen the phenomenon of reuse of minute and diffused spaces present in the mixed urban fabric in relation to the settlement demand for new types of companies: hybrids between research, production, and consumption of various kinds of goods and services, among which the maker laboratories are also situated.

The political strategy implemented in Milan, as a whole, is framed through the notions of a "smart and sharing city", in which a need to define a new urban agenda with a medium-term horizon emerges (Vitale and Polizzi, 2017). At the same time, in view of the establishment of the new Metropolitan City of Milan, the urban policy system – supporting innovation – requires an expansion on a scale appropriate to the recent socioeconomic and spatial dynamics. This is necessary in order to take advantage of the spread of new workplaces as an opportunity for territorial rebalancing and, therefore, for containing an uneven metropolisation process that penalises many sectors of the Milanese urban region.

The role of makerspaces in Milan

In Italy overall, 27.5 percent of makerspaces are concentrated in the larger cities: 20.8 percent are located in Milan, Rome, and Bologna, and the rest are distributed among seventy-five small- and medium-sized cities. The Milanese metropolitan area has the highest concentration of makerspaces of any metropolitan area[19]. There are ten makerspaces registered in the official list on the municipal website, but there are also additional creative ateliers and open creative labs that are not part of this list. Besides the makerspaces that had their origin in private initiatives, there are also spaces initiated by institutions, such as the Polifactory within the campus of the Polytechnic University

of Milan located in the former workers' district of Bovisa, and the Tinkering Zone at the National Museum of Science and Technology in the central area of Sant'Ambrogio.

Looking at the geographical distribution of the makerspaces (cf. Map 1) allows us to see whether makerspaces cluster in specific types of neighbourhoods. In the design district (Zona Tortona/Porta Genova) southeast of Milan, we can clearly observe a small cluster of makerspaces and several coworking spaces located within the same area.[4] Furthermore, we have collected data to complement the map with information about the kinds of buildings used to house these spaces. For instance, WeMake and OpenDot are located in ex-industrial areas that now form a residentialised part of the city, yet close to railroads and infrastructural nodes, which provide a high level of accessibility. When asked why they chose this location, one of the co-founders of WeMake motivated it with the low rents and the availability of spacious facilities. Unlike the two above-mentioned maker- spaces, the new Digital Arts and Manufacturing Academy (D.A.M.A.) is located in the core of the city.

Despite the physical proximity between maker labs, the creation of the community and build-up of their individual reputations through self-branding activities primarily takes place online. As one of the interviewees claimed:

> "We are part of many online networks, like MakeinItaly, FabAcademy, and FabLabsNet, also the global events like hackaton, Fab10 in Barcelona, MakerFaire around the world are front stage in which you can show your products. We are different in terms of skills and missions. In Milan, a makerspace focuses more on training, workshops. We do not do that much. Our main business is prototyping, we are good at that." (Interviewee #8) [20]
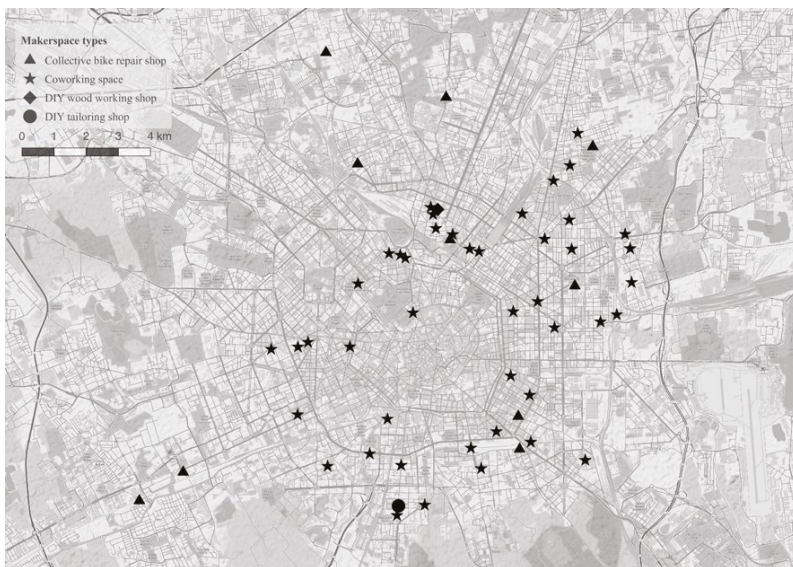
Map 1. Spatial distribution of makerspaces in Milan. **Source.** Authors.

Makerspaces are far from uniform entities, but rather notably heterogeneous. If we sketch out a simple typology of three Milanese makerspaces, we notice that they differ not only in size and participation, but also in more fundamental aspects, such as their material stakeholders, their functioning, output goals, and the type of activities that they organise (see Table 9). One may distinguish two main categories: makerspaces that are community-oriented and those that are market-oriented. The majority of our informants, however, suggested that all makerspaces share an associative side; the internal governance, in principle, is based on horizontal and informal organisation of work. For instance, OpenDot is a makerspace with many founding members and a variegated portfolio of projects, during an interview one of its founders asserted:

> "The associative side is how you manage it. There are informal rules. For example, if you need a machine, say so. So, if you want to use the same machine the same day, you know that it's not available. If you are not able to use that machine, you start a basic training course here and if you have doubts ask, we are always around. You pay a card for management fees and the insurance. Plus, free workshop and training for the dissemination of culture."
> (Interviewee #6)

Besides this common focus on the associative side, makerspaces generate part of their profit through membership, workshops, and training courses. They are a fortiori shared-work spaces; just as the majority of the coworking spaces require you to pay for a desk, in the makerspace you sign up for membership depending on your needs. If you want to produce your own artefacts and use a particular machine, you might also pay for the "time machine", i.e. the number of hours for which you use the machine to create your object. Training courses, management fees, and external commissions are vital to generate enough income to maintain the labour force and the space.

> "It is better to have a company because you can bill, and make consultancy for other firms. It's a low profit company, it's not just an association. But the goal is not profit in itself, our goal is to create social wealth. We create jobs, the people who work part-time and full-time are crucial because they run the space and offer a service to the community. Plus, we reinvest the profit in our makerspace."
> (Interviewee #10)

Makerspaces	Functioning	Material Stakeholders	Current Output
WeMake (2013) Private funds from two co-founders (+ funds from Municipality)	Association with membership and Ltd. Voucher and "candies" for using machinery	Login coworking space. Lombardy region. Cultural foundations	OpenCare (EU – Horizon 2020). PublicProduct workshop
OpenDot (2014) Private funds and many co-founders	Ltd + membership and estimated budget for using machinery	Trotec, Makerland, etc. SMEs. Design and architecture studios	EduFrame – children's education. Makeat – new craft exhibition. Lift-Bit – sofa prototype
Yatta! (2013) Public funds from the Municipality, "Creative Maker" open call – three years' use of free space	Association with membership and estimated budget for using machinery	Secondary schools and universities. Cultural foundations. Associations	Education, life-long learning, training, work-shops, and events. Yatta! School internship and stage

Table 9. Characterisation of selected Milanese makerspaces. **Source.** Authors.

Makerspaces carry out a mixed array of projects, usually in partnership with cultural foundations, private actors, and knowledge institutions. For example, the project Digital Fashion Design Pro[21] is addressed to all those who want to work in the field of digital design and fashion, digital craftsmanship, and manufacturing 4.0. It is a free course that explores new open-source approaches in fashion by the use of software adapted to create products with numerically controlled makerspace machines. This course is realised through the alliance of Fastweb Digital Academy and Cariplo Factory.

When you spend a day in a makerspace you realise that machines are scarce resources, and that there is a hierarchy governing the right to their use. During the ethnographic fieldwork in Milan, we observed how makers internally organise their activities. To use a certain machine, you need a specific set of skills, and usually not all the makers can use all the available equipment, as some are specialised in the use of a specific machine. Since it is not possible to allocate workloads in relation to a formal role within a company, what occurs is a distribution of tasks between individual makers (and micro enterprises) as a function of the skills and level of reliability that the various actors have in the reputational peer system. As a maker explained in an interview:

"The advantage is that between an exchange of goods or knowledge
there is always someone who gives something to someone who re-
ceives. In the exchange of knowledge, you both earn; the gain is also
in the relationships. Marco, our first customer, now works with us.
He has extensive knowledge on manual and electronic practices."
(Interviewee #9)

In another interview, the importance of social relations within the space is clearly a
feature that defines an alternative mode of production:

"In the past 30 years of a white-collar job, I forgot the importance
of doing things with my hands and creating practical knowledge to
share with your peers, you build social relationships and this is pro-
ducing in a socially alternative way"
(Interviewee #11)

If we look at makerspaces more devoted to community, what kind of services do they
provide? To what degree are they alternative/complementary in the provision of local
welfare? The political aims of the more community- oriented makerspaces in Milan are
particularly geared towards issues associated with ageing. They want to support healthy
and active ageing within the population (i.e. health, participation, and safety), empha-
sising the role of new digital technologies in the field of sensors and home automation
solutions (Torri, 2017). These efforts find support with the Municipality, where the offi-
cial responsible for a project called OpenCare stated:

"OpenCare happens in the context of the fourth industrial revolu-
tion. We are in the process of a relocation of production activities
within our urban environment. FabLabs and makerspaces stand as
new actors in the care ecosystem."
(Interviewee #21, during OpenCare and Digital Social Innovation in
Milan policy-making event)

The local government directly supports the OpenCare project, emphasising the im-
portance of improving the physical health and independence of an ageing urban pop-
ulation, especially in terms of accessibility and functionality of living environments and
services in urban space. Social initiatives in the healthcare system, such as OpenCare[22],
or projects of digital fabrication in former prisons[23] are examples of practical solutions
for providing social security and equitable accessibility for the "unnecessariat". The
social expression of these alternative, or complementary, efforts in traditional welfare
provision is an attempt to provide an alternative social infrastructure in which technol-
ogy is the main driver. In these kinds of projects, makers work together with vulnerable
and marginalised communities, co-designing and producing disability devices, re-man-
ufactured products, toys and playground equipment for children, community computer
networks, etc. Through these projects, makers advocate for a more democratic relation-
ship with technology.

By furnishing tools to needy segments of society, they claim to operate within an alternative paradigm that prefigures a different role for technology in society. In practice, the social change is embodied in projects that aim at low intensity production for a local market, such as the DIY shoes developed together with kids at OpenDot, or non-commercialised cultural production, like the modular urban gardening for kids, created in collaboration with MUBA, the children's museum in Milan. In the same vein, the project "Mi-Generation Lab" consists of a free training course on the use of new technologies, with participants receiving a certificate of the attended internship. The local government posits that such activities can constitute alternative forms of civic engagement, the novel spaces for digital fabrication described above represent new opportunities for citizen empowerment and the provision of alternative and complementary services that cover different social needs. In sum, the novelty lies in the digitisation of services that favour the means of sharing the experience of making and co-producing with local communities.

Dreams of revolution in the cold light of the empirical

Having now looked at the makerspaces in Milan, we will use this empirical grounding for a more informed discussion of the previously reviewed claims about the makerspace movement. As we saw in the brief review, the literature suggests makerspaces provide: (i) alternative spaces that create the potential for social mobilisation; (ii) an economic alternative, by being part of an ongoing industrial revolution that will transform the economy to a decentralised and networked structure; (iii) a social alternative, by providing alternatives to the existing capitalist provision of public services. In this section we relate each of these claims to the Milanese experience and evaluate the extent to which Milanese makers are on the route to fulfil such potentials.

Alternative spaces for mobilisation

Makerspaces clearly constitute new urban meeting places that enable the coming together of diverse urban dwellers. As we saw in the brief literature review, the literature takes this to imply more potential than merely opportunities for meetings, these spaces are seen as platforms for social organisation and the emergence of new collective agency. Such a claim, that social spaces may bring the potential for social mobilisation, is not without basis in the broader literature. The claim can be linked to a broad and sprawling social movement literature that discusses the phenomenon under names such as safe spaces, social havens, and counter-publics (e.g. Boyte and Evans, 1986; Törnberg and Törnberg, 2017). Such spaces have been characterised as protective shelters against prevailing hegemonic ideologies and as hubs for the diffusion of ideas and ideologies. A common example that shows the role such spaces can play is the way in which southern black churches – removed from white control and repression – functioned as protective pockets that nurtured and sustained southern civil rights protests in the 1950s and

1960s. Could it be, then, that makerspaces function like the black churches of the civil rights era: as a bridge between the ordinary world and the world of revolutions? Do they serve to foster a latent class consciousness among the disgruntled precariat of "creative" workers socialising within its midst, with potentially large-scale political consequences? While such potential is clearly impossible to firmly confirm or deny, some observations regarding the role of makerspaces as alternative social spaces can be made on the basis of the case study.

First, the case study does not point towards any development of a movement or mobilisation on the basis of the spaces. The maker movement itself does not yet seem to be converging towards any coherent interest or direction. Rather, as institutions that quotation marks are warranted. While makerspaces tend to describe themselves as bottom-up and democratic spaces for knowledge production, all their protagonists do not necessarily share this vision. It is furthermore clear that the development of makerspaces in Milan seems to be part of an "institutional action" by the local state, rather than a spontaneous bottom-up mobilisation. Rather than accepting the self-positioning image of makerspaces as bottom-up urban processes, they should be seen as the outcomes of a much more complex process involving both top-down initiated policy frameworks complete with funding opportunities, and bottom-up initiatives taking advantage of available funding channels and political support to realise various urban projects. It is difficult to ascertain whether these initiatives attach themselves to maker-discourses because they believe in the "revolutionary" potential of the maker movement or simply because it is an effective way of securing public funding and support.

This points towards a second observation: the spaces cannot be said to be protected from either the economic forces of the market or the political forces of the public sector, which puts into question the analogy with the free social spaces literature. The Milanese case study reveals an unholy trinity of makerspaces, market, and state. This dependence on government support is furthermore likely to crowd out some of the alternative interests that may be kindled in these spaces. This can be seen in the tension in the Milanese movement between the idea of making as a way to increase social cohesion, and making as a way to drive urban growth and increase territorial competitiveness.

These semi-traditional business models imply dependence either on government funds, for example, memberships, projects, or money from private donors, or on the market. Milanese makers therefore, to an important degree, have to operate as highly precarious private micro-entrepreneurs, in the sense that they are dependent on selling services and products on the market; makerspaces are spaces for starting your business and a platform for freelancers and designers. They sell services to companies, foundations, universities, and public and private bodies, developing design paths and highly complex training programmes, such as commissioned orders and prototyping for private sector commercial research and development, educational and social design services, and internships and apprenticeships for technical schools, and have strong ties

to certain segments of the Milan fashion industry. These factors imply that, while makerspaces are clearly social meeting places, the fact that there is little sign of any coherent movement emerging from them, and that they cannot be said to provide protected spaces, implies that one should remain reserved as to the claims that they are likely to function as incubators for the mobilisation of urban alternatives.

Alternative mode of production

The idea in the literature that makerspaces are heralding a coming industrial and economic revolution is based on the notion that makerspaces provide a new form of decentralised and democratic production, to replace the hierarchical discipline of traditional factory production (cf. Rifkin 2011; Troxler 2013; Smith 2014). We first note that such decentralisation of production does seem to be playing out, in that the work in Milanese makerspaces is informally organised through informal social groups. While these groups are not without hierarchies, these are primarily informally and reputationally organised.

The claim that this also constitutes a sign of an ongoing industrial revolution towards small-scale production, however, is significantly more dubious. It is a long-observed pattern that new business opportunities created by radical technological innovation tend to be first exploited by small firms, before they are brought into larger-scale industrial production. It seems, with this back- ground, rather likely that the new technologies enabling the makerspaces will similarly increasingly be brought into large-scale factory production. Since makerspaces are furthermore at least in part dependent on being competitive as private enterprises, this may imply an undermining of their market niche.

The value creation associated with urban producers and makerspaces is not always as alternative as it seems, in that the focus on value creation is almost exclusively on exchange value (i.e. skills, and relational and symbolic capital). While, on the one hand, the makers are inspired by visions of the community and a democratic world, they always operate within the market, where profit is the main engine of strategic choice. It therefore becomes central for the organisations to hide their economic, self-entrepreneurship aspect by referencing themselves as a movement that creates symbolic value and a cultural milieu within urban space. They want to brand themselves as social and grassroots entrepreneurs to hide the fact that they are – like virtually everyone – part of the capitalist economic system.

But this does not change the fact that increasing automation in the form of technology like 3D printing will likely produce more decentralised and self-organised work processes. This should, however, be put in the right historical context: production has gone towards exchanging blue-collar labour with white-collar labour through automation since the 1970s, in part as an effort to undermine the negotiation position of unions (Dunford, 2000). Information and white-collar labour do bring with them fewer hierar-

chical work processes, and the decentralised work organisation of makerspaces thus fits neatly into the story of post-Fordism and neoliberalism, rather than constituting a challenge or alternative. While DIY culture often embraces values of pleasure, self-reali- sation, and (consumer) choice, this transformative rhetoric often reproduces, as Dawkins puts it:

> "Neoliberalist rationalities and limiting the political potential of craft and community activism. Pleasure and self-fulfillment are often ex- changed for what might otherwise be felt to be unstable, precarious, and even exploitative work. Contemporary craftwork produces post- fordist labor subjectivities through the blurring of labor and leisure." (Dawkins, 2011: 261–279)

Alternative welfare

According to the claim in the literature, the maker movement is suggested to be capable of providing an alternative to existing systems for the provision of public servic- es, by organising services, for example, for education, healthcare, and care for the elderly. The claim that we are to discuss is that the maker movement is not merely a continuation of the current welfare regime, but an alternative and a challenge to it (e.g. Dawkins, 2011; Torri, 2017). We may begin by noting that it is clear that the maker movement in Milan is indeed providing various social services, including healthcare, childcare, and care for the elderly. It should be noted that previously these services generally have been provided by public investments or, in the case of Sunday schools, by the Catholic Church. The maker- spaces are thus stepping in to fill a hole in welfare services left by shrinking government funds and, consequently, they are indeed providing important services to the communi- ty. While this is a notable ongoing change, it does not seem to be the case that it springs from the service provision of makerspaces being in any fundamental way "alternative" to their previous organisation. In fact, in the case of Sunday schools for example, there are – despite superficial differences – striking similarities between the practices and activities in the makerspaces and those of previous regimes, even though the children are now asked to bow under a 3D printer instead of an effigy of Christ. The difference is rather in relation to organisational structuring and the way in which the services are financed. These aspects, however, seem to fit neatly into the larger narrative of ongoing economic transformations, in particular the ways in which neoliberalism has affected welfare systems throughout the world. There has been a recent upsurge in public-civic co-production of welfare services in which public authorities soften the effects of their retreat from welfare provision by gradually transferring responsibilities to civic actors, often under the banner of empowerment (McGimpsey, 2016). The private-public part- nerships shown in the Milanese case study seem to be exactly in line with such neoliberal transformations of welfare, and it is indeed quite hard to see anything progressive or alternative about them. When a publicly financed system is being replaced by public-

private-civil organisational hodgepodges, this is not a challenge against the mainstream capitalist current, but merely something that floats downstream. The makerspace type of welfare is best understood as part and parcel of the processes of welfare neoliberalisation.

Conclusion

This chapter has looked at some of the narratives that surround the maker movement and their transformative potential. These narratives clearly contain a hint of the exaggerated optimism that has often tended to surround the emergence of new technologies. The literature was found to suggest that makerspaces constitute (i) an alternative space that creates the potential for social mobilisation; (ii) an economic alternative that is part of an ongoing industrial revolution that will transform the economy; (iii) a welfare alternative, providing an alternative to the existing capitalist provision of public services. The aim of this chapter was to discuss these claims on the basis of an in-depth ethnographic case study of makerspaces in Milan, in order to begin to separate the hype from the reality.

The case study suggested that these narratives indeed tend to be overly hyperbolic, in particular concerning the notion of makerspaces as an alternative or a challenge to the status quo. Seen through the lens of empirical observation, the maker movement seems less like a radical alternative and more like the next step on the current trajectories of capitalist exploitation. The decentralised and networked production processes characteristic of the spaces are typical of a post-Fordist restructuring of labour through, for example, automation, driven in part by the interest to undermine union power. The welfare provision is similarly typical of a neoliberal era in which holes in the welfare provision left by retreating states are filled by amorphous private-public-civil partnerships with weak ties and soft boundaries. These aspects are thus, rather than challenges or alternatives, part and parcel of the neoliberal and post-Fordist developments that have been ongoing since the 1970s. The notion that they would provide a sustainable or scalable "alternative capitalism", let alone an "alternative to capitalism" (Rogers 2014), does not find much support in the empirical case study. While makerspaces seem to be part of, or at least symbolic of, ongoing important transformations, they are going with the current, not against it.

There is certainly something to be said for the creation of social spaces, as they do afford the growing precarious class of freelancers and creative workers meeting places ripe for politicisation. As we have noted, makerspace activities and practices in this way could play a role in enlarging a critical space for the deconstruction of capitalist realism (Fisher, 2009). The mobilisation of organised precariat labour struggles may still be nurtured in these spaces, but only if the makers themselves realise that all they have achieved so far is to reinforce their own precarisation. By engaging in welfare provisioning, Milanese makers have seen that they are in a position to make a difference for

other, less privileged, urban dwellers; what they still need to see is that they can also make a difference for their own collective futures as urban workers. Social spaces bring the possibilities for precisely such realisations, enabling the mobilisation and creation of new collective agency by kindling common class interests and identities. What limits the potential of makerspaces in this regard, however, is that they are in no way protected from those cold winds of market forces and government interests that tend to quickly blow out any transformative flame that such kindling may ignite. For a social space to function as tinder for the ignition of a dormant class consciousness, protection from market forces and government interests would be warranted. This underwhelming transformative impact of makerspaces, together with their generally ill-defined and amorphous nature, suggest that a more productive focus of study for future research on this movement should perhaps be on their discursive and cultural aspects. We see two main directions for such future enquiries.

The first direction focuses on the interest underlying government engagement in initiating and funding the makerspace movement. The context for such a discussion comprises the changing conditions of the public sector, implying new selection pressures for government organisations. Under conditions of neoliberalism and economic decline, governments lack an adequate tax base for the funding of necessary social services, and are thus increasingly becoming forced to turn to private investments and alternative sources of income. Governments are therefore looking to international grant processes to fill the holes left by inadequate public funds. This has created the need for them also to become competitive in such grant processes, which is primarily a question of capacity to mobilise discursive resources and form convincing coalitions. The maker movement becomes a valuable discursive resource in such a field, precisely because of the hyperbolic narratives that surround it, since the strong branding of the spaces makes them useful discursive devices in grant applications. This way of understanding the role of makerspaces implies the existence of what we might call a "grant machine" of the city, resulting in "grant coalitions rather than growth coalitions" (Bernt, 2009). This implies that, in fact, the points that have caused observers to conclude that makerspaces are "more than just empty rhetoric" – for example, collaboration, openness in urban governance, civic engagement, and grassroots entrepreneurship – in fact may be precisely part of a strategy in a new competitive realm of empty rhetoric.

The second direction unravels from the hard-to-ignore fact that making is in no way a new phenomenon. Indeed, community meeting spaces with sewing machines are not a new phenomenon; neither is community provision of childcare and care for the elderly. This begs the question: what is actually new about these spaces that could explain the sudden excitement? The answer is hinted at when considering the only reason why the international maker movement is highly male dominated is that the millions of women sewing, knitting, and weaving are not included in the term. Through this lens, the maker movement looks more like a cultural recasting of existing social practices. This type of

process will not be news to urban scholars, as parallel processes have been observed and theorised in other parts of the urban economy. For instance, while the poor and marginalised have always reused and repurposed, these practices seem to attain a new value and different signalling when done by white "hipsters". Similarly, making seems to attain another value when done by male makers, armed with the latest technological gadgets, rather than female crafters. In this way, makers seem to fulfil some of the same cultural roles as "hipsters" in attracting that ever-sought-after creative class. The maker movement is drenched in the cultural values of Silicon Valley – male- dominated, technological, and innovative – and there is perhaps some aspect of "cargo cultism" to the state's interest in supporting these entities.

The government is essentially building an airplane runway of practices associated with the creative class, with the hopes of attracting the Western airplanes of "creative workers" and international capital. This type of cultural analysis may in fact prove to be a more useful way of understanding the makerspace phenomenon than an analysis that departs from speculative claims about their innovatory and revolutionary potential.

To conclude, makerspaces and their 3D printers seem like the latest iteration of the frequently recurring story where a new machine is envisioned to come upon the stage of capitalism to resolve its difficult plot situations. But if we wait for the godly intervention of such a deus ex machina, we will not only be in for a long wait, but also continue to fall for precisely the same traps that the makerspace dreamers fell for: we will mistake technological change for social revolution, individualism for freedom, and the reinvention of capitalism for revolution. If we are to change the plot of the tragedy in which we live, we cannot wait for the intervention of an imagined celestial scriptwriter – we will have to craft our own future.

Notes

*   Chiappini L. and Törnberg P. (2018) Deus ex machina: Makerspaces in Milan and their transformative potential. In K J. Fisker, L. Chiappini, L. Pugalis and A. Bruzzese (Eds.) (2018) *The Production of Urban Alternative: An International Dialogue*. Routledge: London.

17. *"Innovare per Includere"* is a political slogan and a laboratory for public policy instituted by the public administration and an amalgamation of local knowledge composed of academics, storytellers, policy makers, and Cristina Tajani, Councilor for Labour Policies, Production Activities, Trade, and Human Resources. She is the main gatekeeper in crafting urban policies to support makers, social entrepreneurs, start-ups, etc. See the website: www.innovarexincludere.it.

18. See the list on the website: www.lavoroeformazioneincomune.it/wp-content/uploads/2015/10/Misura-A-elenco-al-9-giugno-2017.pdf.

19. It is three times more than in Rome and Bologna (5.2 percent each) and four times compared to cities like Modena (3.7 percent), Venice (2.9 percent), Padua and Parma (3.6 percent) (Manzo and Ramella, 2015).

20. For each quote the number corresponds in Tables 14 and 15 within the Appendix B. There is an indication of the function, organisation of the interviewee and date of the interview. See all the other quotes in the dissertation.

21. See the website: www.fastwebdigital.academy/digital-fashion-design-pro.

22. Since 2016, WeMake has contributed to a series of health and care projects with a bottom-up approach through the European Union-funded OpenCare project. The mission of the makerspace is oriented to support citizens, institutions, and companies in the creation of projects and solutions with a high social impact. The core of the project is the progressive automation of care solutions: from sensors to replace people dedicated to assistance, through the complete automation of performance acquisition functions, to the development of diagnostic techniques, assisted by computer algorithms. Over the course of the project, more than 400 participants made a written contribution to the online debate. In November 2017, the platform hosting the discussions on OpenCare recorded 760 threads and 4,850 posts for a total of one million words. In addition to the level of verbal interaction and storytelling, WeMake acted at the prototyping level. The online and offline solutions proposed were effectively designed, tested, documented, and shared for a total of six projects. See the website: http://wemake.cc/opencare.

23. See the website: http://wemake.cc/2018/02/13/imprese-ristrette-la-digital-fabrication-attraversa-i-muri-del-carcere.

Chapter IV
The Urban
Digital Platform.
Instances
from Milan
and Amsterdam*

Digital platforms are affecting cities in myriad ways; they impact both interurban connectivity and intraurban functionality. The existing literature on digital plat- forms defines them very broadly, namely as any digitally hosted instrument to share or enable the exchange of information or services at a global scale. Notions such as 'platform capitalism' (Srnicek, 2017) and the emergent concept in urban studies of 'platform urbanism' (Barns, 2019; Moore and Scott, 2018) capture one side of the urban transformation that our cities are facing. This one side mainly focuses on the increasingly central role of data, conceived of as a commodity, where digital platforms play a role as global capitalist forces in sourcing data and monetising it (Rose et al., 2020). In the concept of 'platform urbanism,' there is a specific urban character: Platforms that deal with the urban tend to share initiatives, information and knowledge, and be dependent on cities for their data, service, and local networks. At the same time, there is no critical eye on the differentiation between digital platforms that commodify urban resources and another subset of platforms, which digitally-mediate urban experiences, such as citizen-based solidarity initiatives, in which the local state might have a role not only as a regulator but as an active promoter.

There is still little knowledge regarding not-for-profit digital platforms which are designed for public participation, solidarity, and diverse transactions beyond those that are exclusively economic. Public participation and grassroots initiatives vary from civic crowdfunding and complementary welfare platforms (i.e. time-banks) but they also pertain to broader societal effects, such as solidarity, democratic control, and accountability. In particular, during the Covid-19 pandemic crisis, a crucial aspect has emerged. On one side, global digital platforms such as Airbnb and Uber are losing grip in cities; due to the circumstances, they are adjusting their business model to circumvent regulatory regimes and suit (again) the market (Richardson, 2019). On the other side, new types of digital platforms are gaining terrain in offering support: mutual-aid and solidarity at a city-level. For instance, the municipality of Amsterdam launched its own digital platform 'We Amsterdam' storing both offline and online civic initiatives to support citizens during the corona crisis (Mos, 2020). Elsewhere, the Milanese municipality opened another round of civic crowdfunding, offering financial support to help vulnerable citizens during the corona outbreak which severely hit Lombardy and Milan. The questions on how digital platforms affect urban geography and governance arrangements, and vice versa, as well as how cities affect digital platforms are not arbitrary within urban studies.

Urban Digital Platforms (UDPs hereafter) are potential ways to (re)organise the social economy, civic initiatives and complementary welfare provision. Besides, UDPs necessitate a revision of the role of the local government as they enable new forms of social organisation as well as new forms of both producing and delivering goods and services. Hence, this article reflects upon urban plat- forms as an alternative output form of grassroot and entrepreneurial projects, community-oriented practices and collective

actions, in which the local state might intervene to prevent or favour a particular kind of urban development and production of urban space (Fisker et al., 2019). UDPs are an alternative form of escape from the voracious and exploitative global digital platforms. The core of my argument is that certain digital platforms are urban a priori, i.e., platforms for the city, rather than platforms which feed on it: where 'the city' is conceived as an urban com- monwealth, not a growth pole. As summarised in Mark Purcell's (2008) Recapturing Democracy and in "Cities for People, Not for Profit," by Brenner and colleagues (2009), the UDP is a platform for people and not for prof- it, aiming at recapturing accountability and democratic principles.

In order to lend visibility to, and direct analytical attention toward, a wider diversity of platforms, I introduce an operationalised definition of the UDP. UDPs can be an opportunity for solidarity-based 'urban common- wealth' (Kohn, 2016), reimagining the city as an "innovative form of collective cooperation and collective corporation" (Merrifield, 2014: 390). Citizens are not re-cast in the role of consumers but rather as producers of space. Different from smart city projects or platform urbanism in which users are able to participate in mundane tactics and everyday life activities, such as using a bike-sharing service, UDPs offer the possibility to (re)create urban commons and generate solidarity and collective actions. Those observations derive from four years of fieldwork in Milan and Amsterdam. The research is a comparative perspective based on a match-pairing of two UDPs which operate in both cities: civic crowdfunding and Commonfare. The methods deployed are mostly qualitative, such as twenty interviews, participant observations, and mapping of projects within the abovementioned UDPs.

Both platforms represent potential alternatives for local arrangements and citizen engagement, without profiting from the urban or directly exploiting local resources. The UDP term is an attempt to revitalise the importance of the urban as a space of contestation and potential political rearrangements towards alternative production of space, rather than as a space for corporate- led digital platforms. The need for the UDP as a new concept is to broaden our scope to contrast the essential motive of platform capitalist firms in the collection of huge masses of data. Large cities and metropolitan areas, and in particular urban centres that have become hegemons in the collective imagination, function as living labs for key companies in western urban economies. For 'the new prophets of capital,' as Nicole Aschoff (2015) has called them in the latest book, global digital plat- forms tend to present themselves as philanthropic while conducting business in the name of the 'common good' (Rossi, 2019).

In pointing out the significance of the UDP as a separate concept, platform urbanism is conceived of as an emergent condition of the urban and a new field of study in which the concept of the UDP resonates. The proposed operationalised definition of the UDP is to emphasise that is not-for-profit, designed for small- scale and local initiatives in which the type of provision is P2P (Benkler, 2006), and often requires the intervention of the local state. With a proper conceptualisation of the UDP, critical urban scholars can

start to shape social and economic relations in a different way as opposed to reducing our role as researchers to mapping the 'impact' or negative effects of digital platforms. The attempt by Leszczynski (2020: 189) is indeed "a counter-topographical minor theory of plat- form urbanism," which explores a more nuanced under- standing of politics in platform urbanism that resonates and intersects with the definitional work of UDP presented in this article.

The article is structured as follows: The second section revises the main contribution that digital plat- forms, from an interdisciplinary perspective within media and internet studies, have made to digital geography. The third addresses the definition of the UDP with particular attention to the two cities analysed, Milan and Amsterdam, in which instances of UDPs are observed. The fourth is a level of abstraction on how the concept of 'the stack,' proposed by Bratton (2016), might engage and enrich the definition of the UDP as a separate analytical category and a gloss to platform urbanism as a new field of research.

From Digital Platforms to Digital Geography

According to Leszczynski (2017), digital platforms are disrupting what has become established within the 'field' of long-standing geographical concerns, pushing for new lines of inquiry. The digital turn in geography has called for scholars to investigate how "geographies are produced through, produced by, and of the digital" (Ash et al., 2018: 25, emphasis in original). However, the epistemological approach from digital geography does not address the diversity of global digital platforms that operate in the urban context (and benefit from the infra density in order to increase extraction of value) versus the local solutions which support citizen-based initiatives and small-scale urban projects that are unique to the place and social structure of that particular city.

Digital Platforms

Existing research within internet and digital media studies has generated a rich set of analytical categories on the social implications of digital technologies, including plat- forms (Pasquale, 2015; 2018). Those analytical categories offer a critical reading of the largely negative social consequences of the various technologies that increasingly shape the digital infrastructures of every- day life (Greenfield, 2017; Hine, 2017; Kitchin and Dodge, 2011). Digital platforms have multiple shapes: corporate, commercial, non-profit, crowd-sourced, on-demand, all bringing in a multitude of activities, services, exchanges, forums, infrastructures, and ordinary practice (Langley and Leyshon, 2017).

As Tarleton Gillespie (2010) argued, the term 'plat- form' clearly does discursive work for commercial entities such as Facebook, Amazon, and Google. It allows them to be variably (and often ambiguously) described and imagined as technical platforms, plat- forms for expression, or platforms of entrepreneurial opportunity. Following up on this, Gillespie (2018) described at length how platforms actively curate, choose, and select

content. Grounded in media and communication studies, Gillespie (2018) blends a political economy framework to show how technologies shape conditions of public dis- course and public values, with a hint of the normative vision in the analysis of policies that deal with digital plat- forms. Within this field, one of the attempts to define any kind of digital platform is proposed by Gillespie (2018: 207):

> "Platforms constitute a fundamentally new information configuration, materially, institutionally, financially, and socially. While they echo and extend traditional forms of communication and exchange, they do so by being, like computers themselves 'universal machines' for many different kinds of information exchange… moderation, far from being occasional or ancillary, is in fact an essential, constant, and definitional part of what platforms do. I mean this literally: moderation is the essence of platforms; it is the commodity they offer."

The current debate on digital platforms usually refers to hyped discourses on the 'sharing economy' (cf. Botsman and Rogers, 2010; Frenken and Schor, 2017; Richardson, 2019) and 'gig economy' (Woodcock and Graham, 2019), as well as key firms in the sector such as Airbnb, Uber, and Deliveroo. According to van Doorn (2019: 1), digital platforms such as Airbnb should be understood as "new urban institutions transforming relations between market, state, and civil society." As van Dijck, Poell, and de Waal (2018) indicate, digital platforms are indeed re-shuffling public and private values, as well as democratic processes. Schor (2016) insists on the fact that the type of provider and the orientation of the platform is crucial to understand their effect and impact on society. Table 10 shows what is widely discussed is the type of provider and the kind of platform orientation; some of the well-known platforms are P2P and Business-to-Peer (B2P). Although Airbnb, Uber, and Deliveroo are P2P, their corporative and entrepreneurial character is confirmed by the type of platform orientation which is clearly for-profit in which the value is extracted by the production of relational transactions. Yet, the relationship with the city is overlooked and does not help to sharpen the distinction between different digital platforms.

| | Type of Provider | |
	P2P	B2P
Non-profit	Time Republick (time banks), CommonFare, Civic Crowdfunding	Platform Coops
For-Profit	Airbnb, Uber, Deliveroo	SnappCar, ShareToGo

(Left vertical label: Platform Orientation)

Table 10. Platform orientation and type of provider. **Source**. Author, after Schor (2016).

Anyone seeking commonalities between all these entities faces a proliferation of terms to define them, most of them loosely revolving around the idea of digital platforms serving as intermediaries. Unlike ordinary websites and apps, platforms operate at a meta-level because they bring together different players in which the relations between the parties becomes the service itself (Karatzogianni and Matthews, 2018). The primary function of this structure is to enable the formation of networks and ways of measuring and monetising activity across these networks from which value is extracted, resulting in the so-called 'platform capitalism' (Srnicek, 2017). This may result in uneven geographies in which platforms reproduce, deepen or transform existing urban inequalities (Törnberg and Chiappini, 2020).

Most of the global digital platforms mentioned have a significant urban dimension (Artioli, 2018). Without cities and users/dwellers there is nothing to deliver, nobody to accommodate, and no-one to pick up and drive around the city. Whereas the operations of plat- forms such as Airbnb, Uber, and Foodora are by no means limited to cities, their business models are entirely dependent on dense urban settings: there is no profit without cities to operate in. However, it is not enough to claim that digital platforms might be new urban institutions, structures, and infrastructures. This argumentation ostensibly aligns with Scott and Storper's (2015: 12) more general argument that:

> "A viable urban theory should enable us to distinguish between the dynamics of social life that are intrinsically urban from those that are more properly seen as lying outside the strict sphere of the urban, even when they can be detected as a matter of empirical occurrence inside cities."

As a general statement, however, this espouses an urban essentialism in which the two scholars conflate the 'urban' with the 'city,' or rather reduce it to their narrow conception of the city. What is needed, in order to understand what is inherently urban in

digital platforms, is to retain a distinction between 'urban' and 'city.' For instance, Angelo and Wachsmuth (2015: 19) write: "Which is it? Urbanization or the city: One is a process, the other a site that is one (but not the only) outcome of that process. Surely, they are not the same thing." It is then still valid that cities are large and dense urban settlements—outcomes of urban processes—and socially heterogeneous places. All digital platforms are entangled in the process of urbanisation, but not all of them can be said to be in, of, and for the city. This is also the reason why, in the next session, I explain which are the significant analytical reasons for practising this kind of sharp distinction when it comes to my study of UDPs. It is analogous to Gramsci's claim that the state and civil society can- not be separated, only to then go ahead and separate them anyway, because he finds it analytically necessary: a reluctant conceptualisation (Gramsci, 1994). To do so, I propose an operationalised definition of UDPs which are parts of an urban common-wealth whereas global digital platforms are part of an urban growth machine. Conceived this way, the UDPs don't even have to be strictly non-profit as long as they can be seen to contribute to the production of cities for and by people. Arguably, Airbnb, Uber, and Foodora are inherently spatial in their manifestations since those platforms operate in different urban markets, such as mobility, accommodation, delivery.

Any digital platforms that intermingle with the city need an existing urban com-munity (network effect), which eventually plays out as a 'community marketplace' where social interaction is commodified through the platform in an economic trans- action (Celata et al., 2017). Digital plat- forms facilitate any type of socioeconomic activity and mediate relations, as well as organise the exchange of services, goods, capital, and labour (Artioli, 2018). However, what I observe is that in the current literature there is a larger population of corporate global digital platforms and a subset of UDPs. Hence, relatively little attention has been given to 'other' digital platforms oriented to non-profit, cooper-ative and bottom-up practices, social economy, and common goods, such as plat- forms for citizen participation, grassroot mobilisation, and urban regeneration interventions.

At first sight, one can claim that bike or car-sharing services are also urban per se. However, most of the mobility firms who provide such service are third parties or cloud platforms which collect an enormous amount of data (see the example of the Chinese company for bike-sharing, Glovo). To sharpen up the definition of UDP, I observe that they relate also to the role of the local state apparatus and material and immaterial re-sources which are deployed within the platform, such as local knowledge, funds, and citizens.

Geography and Its Digital Turn

The main contribution to digital platforms within media and internet studies of the city layer highlights the question of the relationship between digital networks and terri-tory. In political geography terms, the tension between territories and networks has been widely explored, in particular in relation to state power and sovereignty (cf. Brenner,

2004; Kitchin, 2019). As Rodgers and Moore (2018) claim, "[sovereignty] is neither generalized nor homogeneous: it manifests in geographically uneven intensities and extents." In the same vein, Painter (2010: 1090) analyses this tension, claiming that "territory and network are not, as is often assumed, incommensurable and rival principles of spatial organisation, but are intimately connected." Since they are intimately connected, digital platforms rely on the territory and its resources, along with the user-network that uses those resources. In short, users are the active components to make these platforms work within the city layer.

Digital networks, territory, augmentation of space, and diversity are discussed in the light of the digitalisation of urban geographies. Within this body of work, the focus is onto digitally augmented nature of our towns and cities (Graham, 2014), such as how a place, a monument, a shop, or an event is represented and defined online. Digital geography research often tackles problems concerning urban knowledge and information about space which are digitally mediated by any kind of technology, such as mapping, geo-localisation, and social media activities. The body of literature from digital geography has enriched our understanding of the relationship between digital platforms and their geography (Leszczynski, 2017). The significance of this strand is to be found in conceptual, methodological and empirical questions which address the 'digital turn' across geography's many sub-disciplines (Ash et al., 2018).

The question of networks in geography is not solely associated with accessibility to the territory in planning terms, but more about the 'findability' and the precision of algorithms to offer an on-demand match, geo-localised systems. Every kind of digital platform is designed to enhance a layer in which users, information, products and services meet, and—because the inter- net makes everything easy—platforms do it differently or faster. It is indisputable that global digital platforms such as Airbnb and Uber extract resources, through geo- localisation systems. For instance, when one is looking for a ride on the Uber app, the map geo-localises the user and shows that there are Uber drivers around you. In fact, these cars might be quite far from you; as a result, when one accepts the ride, they vanish and the app displays the real geo-localisation of the selected driver.

Uber and Airbnb exemplify that the design of such platforms might severely disrupt the urban fabric and the labour market. As the internet-based services increasingly evolve from being a digital network that we log into, towards an assemblage of data and infrastructures that permeate all aspects of everyday life, the questions today revolve around what those changes mean for the ways that urban environments and communities are governed, planned, lived in, and challenged. Platform-based activities, ranging from Uber and Airbnb to grassroots community activism, are spatially concentrated in cities and build upon existing uneven geographies while feeding into wider urbanisation dynamics of economic development, environmental action, and everyday life (Hodson et al., 2020).

Graham's (2005: 571) work on software-sorted geographies claims that "spaces which escape the reach of regressive software-sorting systems do and will remain. A politics

of transgressing, resisting, and even dismantling such increasingly inequitable systems is possible." If in the past, the digital divide was measured in terms of accessibility to the web, nowadays it is seen more as the capability to escape from the algorithmic regime. Conversely, the notion of a digital divide obscures the fact that what divides the included from the excluded is rarely access to the digital realm in itself: nominal access does not automatically lead to inclusion in the urban or access to services and goods. Isn't the digital divide expressed not in terms of access to technology vs. lack of access but how algorithms distribute access differentially among people who nominally have access? This seems at least as significant as the ability to escape.

The Urban Digital Platform: An Operationalised Definition

The proposed concept of UDP is positioned within the digital geography field and associates directly to the notion of platform urbanism. It complements the taxonomy (see Table 10) of global digital platforms, their corporate or profit-oriented characters, with another type of platform, operating exclusively in the urban realm and with other motives. Hence, the article further analyses how platforms for civic engagement and grassroots initiatives might tackle different social issues, providing tools to strengthen urban communities. Conversely, these initiatives might encounter limits and obstacles related to the control of the local state, the availability of financial resources, such as subsidies and grants, lack of participation, techno-biases, media literacy, and more. Notwithstanding, digital platforms do seem to have considerable implications, geographical as well as political. In this emerging research field, the article explores, from a geographical perspective, the relationship between digital platforms and urban conditions, starting from the theoretical stance on how the urban might affect digital platforms. In doing so, I analyse digital platforms which are explicitly embedded in the city. For instance, the whole array of projects analysed in the two platforms are utterly embedded in the two metropolitan areas of Milan and Amsterdam (see Maps 2 and 3).

From a political perspective implication, within a non-profit oriented platform, networks are decentralised and data are open in terms of ownership. Data is not sold to other businesses, and information and knowledge exchange is not commodified through reviews or reputation systems, but rather they are collective goods. As Table 10 shows, UDPs are similar to co-ops which man- age online platforms, in which the governance model shares the ownership of content and data are perceived as being a common good, not as a commodity for the platform itself (Scholz, 2016). What is different from the platform co-op model in the UDP is the role of the local government and the type of motive behind it. Co-ops can serve as protection for workers, such as Smart.Be which serves as a trade union for gig-economy riders. For instance, it is not based in cities, but it is a transnational entity, therefore it is not considered as part of UDPs. Besides, where UDPs are concerned, the role of urban governments cannot be underestimated. Whether they initiate and run platforms themselves or merely intervene in an ecosystem of grassroots initiatives (or both), the urban government is the single-most-important actor

in shaping the local landscape of UDPs. Understanding the (dis)contents of their role (see the following inter- view quotes) should be a top priority for research at the intersection of digital geographies and the city. However, civic crowdfunding platforms and platforms that enhance grassroots efforts, such as Commonfare, require a closer look to capture whether or not the urban government is still crucial or if they can remain utterly self-organised.

The tool-box that I propose conceptualises the UDP and makes the definition operationalised for empirical research: Firstly, a UDP operates at an urban scale and uses/redistributes local resources, it is P2P in the provision of goods and services and offers citizen-based welfare solutions, it constitutes networks which are decentralised and whose data are open in terms of owner- ship (not sold to other businesses). Finally, it considers information and knowledge as collective goods, aiming to add social value and solidarity, and to contribute to public and private civic initiatives. In order to delve into these aspects and grasp the complex constellation of actors in UDPs, it is necessary to observe non-profit organisations more closely, political leaders, policymakers, as well as community activists and software developers where empirical analysis is needed. Secondly, a UDP might also need diverse actor constellations, such as technical providers and experts, and social and community entrepreneurs. The role of the local state is another important aspect. The next section explores these aspects in greater depth, supported by quotes and mapping of projects from my fieldwork based in Milan and Amsterdam.

Instances of Urban Digital Platforms: Civic Crowdfunding and Commonfare in Milan and Amsterdam

Although there are efforts to enrich the discourse around platform urbanism, with 'vignettes,' such as the social media campaign around the hashtag #deleteUber in the US, which are defined by Leszczynski (2020) as 'glitch,' there are no attempts to describe a platform which operates exclusively in the urban, which directly involves local resources and citizens. Therefore, I introduce the concept of UDP as a supplement to platform urbanism stressing the possibilities for non-capitalistic, P2P, and community-led platforms in global European cities, which might represent the same global capitalist accumulation from a political economy perspective but a different conception from US Western-based debates of the urban in terms of the morphology and social structure of a city.

Western geographical contexts and European global cities, such as Milan and Amsterdam, are prominent cities in which platform urbanism is unfolding. Within the two national contexts, Milan and Amsterdam are classified as two models which merged economic growth and global competition (ability to intercept global funds for urban development). Although this is not the main subject of the research, it is relevant to take this aspect into consideration. For example, if one looks at the real estate values, that is, the real estate prices in the two cities, you can see that they are directly proportional to their

attractiveness. This dynamic is well illustrated by Hardt and Negri in Commonwealth: in terms of positive externalities (as economists call them) the two cities attract and concentrate innovative companies and prestigious universities, dynamic governments and efficient services in their metropolitan areas (Rossi, 2019). Furthermore, rare business services operate in these cities, such as tertiary services and financial hubs, as shown by the first global city analysts back in the 1990s (from Saskia Sassen to Peter Taylor).

Corporate platforms, such as Airbnb and Uber, surf the length of the wave, exacerbating the existing inequalities that already exist in the two cities. From this point, there is the urge to point out that another sub- set of platforms exists: those that do not directly follow the same logic to attract global capital for urban development, but which aim to strengthen urban communities and (re)create social ties. However, this is not taken for granted.

A civic crowdfunding platform is a sub-type of crowdfunding through which citizens, often in collaboration with government, fund projects providing a community service, with civic and spatial aims (Davies, 2015; Gullino et al., 2019; Pais and Pacchi, 2020). Commonfare is a welfare platform which offers complementary services, such as sharing information and knowledge and time-bank functions. For instance, one can offer an hour of babysitting in exchange for an hour of language teaching. Besides, Commonfare allows users and members of the platform to have a choice regarding privacy of their data. In these terms, they can be considered alternatives to the for-profit plat- forms which extract and sell their users' data at a global scale. UDPs are P2P in their type of provision of goods and services, and their orientation is not-for-profit. Main empirical findings of my research indicate that, instead of comparing private, public, and grassroot actors and bottom-up and top-down practices against each other, we need to look at the ways these hybridise within UDPs. The new proposal of UDPs is one way of enabling this. UDPs present themselves with a clear standard design, they are used to hold and distribute goods or services, diverse kind of resources, and even more importantly, social relationships. In the Milanese context, the local state is often directly engaged in the promotion of these platforms, as these interview quotes show:

> "Civic crowdfunding is a tool to fund ideas and projects from the bottom, aimed at social inclusion and cohesion, 89% of the projects promoted by the network and over 300,000 euros collected by web users show that today it is possible, thanks to crowdfunding, to speculate on different funding scenarios from public support to support social projects and new start-ups. Civic crowdfunding has been a sure bet. By co-financing those projects that are able to receive the first half of the initial funding from the bottom, we have supported more projects and we have been guided by the citizens in their choice".
> (Interviewee #16)

INSTANCES FROM MILAN AND AMSTERDAM

Map 2. Civic crowdfunding realised projects in Milan, 2018. **Source.** Author.

While in Amsterdam, the tone and discourses promoted by the local state are often towards a more inclusive technological development. However, there is no direct involvement in terms of funding:

> "We come from a time of many hierarchical systems. The government and the organizations around it are very top-down organized and I see that people around me have the need to determine more about their own living environment. Platforms allow citizens to participate and foster bottom-up actions".
> (Interviewee #36)

If civic crowdfunding and welfare platforms become important modes of coordination affecting cities, then the way access to these platforms is organised obviously has a political dimension. UDPs are crucial drivers of new socio-economic and local governance arrangements. In my findings, the small scale of the two examples of civic crowdfunding and welfare platforms such as Commonfare—all being within the metropolitan areas of Milan and Amsterdam—interfere with local arrangements in terms of the redistribution of local resources and oppose the extractive and exploitative nature of the corporate global platforms.

In the analysis, UDPs are defined by two main principles. The first is that these digital platforms do not pursue profit per se, rather, they are socially oriented. Revenues are reinvested in projects presented within the platform, just as we saw in the platform coop model mentioned earlier. The second concerns the internal organisation, which is open and decentralised, and, in particular the ownership of data: Users own their data, they

know where it is stored, and they are involved in the decisions about how revenues are reinvested in services within urban communities. In contrast to corporate digital platforms, they do not sell the data they produce, nor do they extract value from users and exploit the commons for individual benefit. In other words, the techno-social configuration of platforms such as Commonfare allows users and members of the platform to have a choice regarding the privacy of their data. The techno-social configuration means something a bit different: Here, platforms do not 'have' techno-social configurations but become part of them through use (Johansen and Fisker, 2020). In these terms, they can be considered to be alternatives to the for-profit platforms which extract and sell their users' data and operate at a global scale.
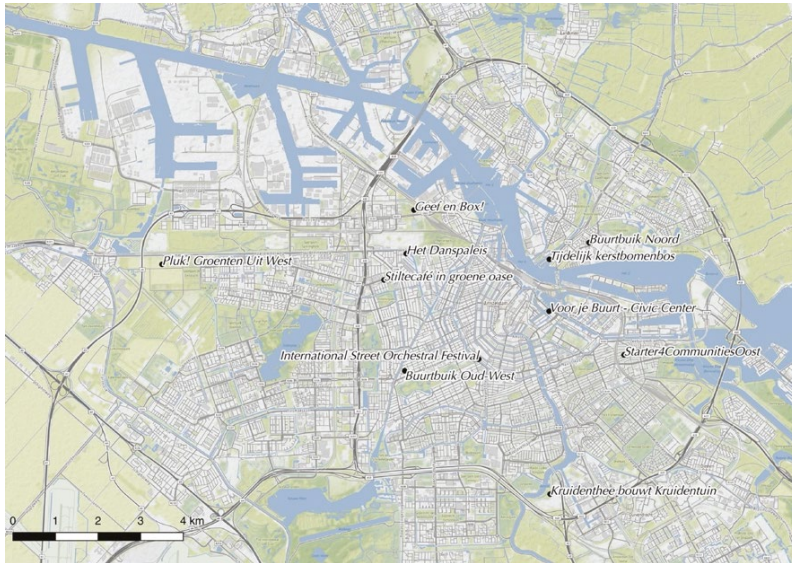
Map 3. Civic crowdfunding realised projects in Amsterdam, 2018. **Source.** Author.

However, clearly formal requirements with regard to who is allowed to use the platform is an important dimension of access. Nevertheless, access is framed in many more often implicit ways. Besides the economic capital, such as a computer and Internet access, social and cultural capital will play a role as pre-conditions for being able to access cloud platforms. The skills needed or 'media literacy' to be effective on a platform might vary from web-design skills to using the appropriate language of the particular community of that platform (Graham, 2014). As this quote from an anonymous participant of one civic crowdfunding project in Milan states:

> "It was very difficult for us running the campaign. We do not have so many digital skills, so the online part was an obstacle. We want to collect money offline, you know we have a lot of elderly people around here who do not know how to use the platform".
> (Interviewee #25)

Yet, civic crowdfunding can be considered bottom-up in the proposal of projects and initiatives from citizens, but those bottom-up flows are often coordinated in a centralised system by the local state or a private technical provider. The risk is the creation of new uneven geographies or the exacerbation of existing those that already exist, as UDPs tend to mediate certain information and represent certain spaces and social groups over others. UDPs can also be not-profit yet still serve the platform urbanism logic of extracting value and selling it to third parties. What is crucial as a criterion is, for instance, the ability for users and members of the platform to have a choice regarding the privacy of their data (see example of Commonfare, where data are treated as common goods). The urban scale is also a potential space to re-organise communities and resources, which shows ambivalence and contradictions as much as the concept of urban com mons does. As Enright and Rossi (2018: 35) claim the concept of urban commons shows contradictions that shed light "not only on multiple and even competing understandings and uses of the notion of the common(s), but also on the more general ambivalence of contemporary capitalism in its urban manifestation."

The main contradictions are in the re-appropriation of those resources. While the concept of platform urban- ism is loose in describing the forms of urbanisation that any kind of platforms contribute to, UDPs are already framed and conceived as a contested terrain. They are the site of experimentation which might entail cooperative relations resulting in urban entrepreneurship and both P2P and market-oriented projects (which are not antithetical). The urban scale is not, and should not, be utterly founded on centralised mechanisms such as large- scale projects or, as Bratton (2016) puts it, on 'the stack.' In the same vein, the concept of UDP serves as an analytical category to the contradictions that contemporary capitalism shows in its form of platform urbanism. In this ambivalence, UDPs rely on the challenge of different pat- terns of urban futures.

However, UDPs can enrich the digital urban theory which drawn both on the abstract level of the stack as a point of departure and the urban realm as essential pre-requisite to make those platform function. This is the main reason why UDPs are inherently urban: First, they rely on the urban condition, such as the density of social relations and physical proximity between users and material resources (e.g. built environment, amenities). Secondly, UDPs often require the intervention of the urban government (e.g., civic crowdfunding) or a third sector as in the case of Commonfare. Lastly, the out- put of UDPs enables a redistribution of local resources and common goods and services, resulting in an alternative production of space (Fisker et al., 2018).

The Stack' and its 'City Layer'

Elsewhere, digital platforms can also be understood as complex infrastructures. Media theorist Bratton (2016) refers to the 'stack,' a shorthand originating from programming work, as a fundamental layer of what he defines as planetary-scale computation based on cloud- based platforms. Following Bratton's reasoning, computational

technologies such as smart grids, cloud plat- forms, smart cities, the Internet of Things, and automation, are defined as accidental megastructures. The stack is composed of six layers: earth, cloud, address, interface, city, and user. One of the most important elements for the conceptualisation of the UDP is the 'city layer':

> "It is [in the city layer] that The Stack becomes an apparatus of inhabitation. Global urban networks situate mobility and settlement, combining physical, informational and ecological infrastructures. These form different envelopes from which architecturally-based and software-based envelopes subdivide and enforce different rights of access and circulation."
>
> (Bratton, 2016: 129)

Simultaneously, it has to be noticed that UDPs, or plat- forms in general, rely on existing platforms. An app, for example, that is used as a P2P crowdfunding (or any non-profit oriented platform) still relies on: Google's Android or Apple's iPhone, the cellular network (T-Mobile, AT&T), cloud platforms (Amazon) that the app connects to (which stores whatever central data is necessary), and internet infrastructure. In his terms, Bratton attempts to overcome the dualistic view of the relationship between technologies and physical space, and more precisely between virtual networks and territorial boundaries. He implies that those levels are now mutually constitutive elements of the city itself, as an extension of global digital infrastructure and the city layer brings up the importance of the relationship between territories and networks.

These theoretical axes are based on a potential new form of 'geopolitical sovereignty.' The link here to Lynch's (2020) piece on technological sovereignty activism in Barcelona is relevant to establish a clear connection with the city layer and the digital rights implied. This 'sovereignty' results in the management of networks which are not strictly linked to formally recognised territorial boundaries, as a form of sovereignty which is at least partially decoupled from the nation-state, which instigates a dialectic view with Graham's (2005: 571) work on software- sorted geographies and the concept of UDP.

Platform Urbanism as a Proposition of a New Field of Study for the concept of U.D.P.

The concept of 'platform urbanism' stems from the field of digital geography and urban governance studies and is gaining traction due to its ability to illustrate new dynamics and spatial outcomes of global digital platforms. Barns (2018: 23) defines platform urbanism as such: "[It] concerns the reshaping of city infrastructures and services through platform-driven business models." The dominant tendency of global digital platforms is to impose a top-down governance model which heavily affect important urban sectors, such as housing, mobility, and retail (Barns, 2015; 2019). In this notion, there is a certain emphasis on data-driven forms of urbanism and new constellations of platform governance, namely different alliances of technical experts, politicians and

policymakers, citizens and businesses, as well as the fact that it gives precedence to big corporate actors mostly drawn on observations in the US and global cities (Barns, 2016). In these terms, cities are local markets for global distributors. To be so, these platforms are fuelled with local knowledge and therefore local data. Short term rental platforms and food delivery platforms exploit density, size, and associated physical proximities that characterise the urban agglomerations in which they operate. Recently, Leszczynski (2020: 201) enriches the initial definitional work by proposing a minor theory:

> "Platform urbanism as theorized from the minor via the glitch reveals it to be a highly contingent, indeterminate, and necessarily incomplete phenomenon where erratic/erroneous configurations of platforms and cities are both the result of, and open to opportunities for, tactical manoeuvres rooted in everyday digital praxes that remake, unmake, and make differently platform/city interfaces."

However, platform urbanism and UDPs are both inherently sticky in place, UDPs contribute to this broader urban phenomenon of platform urbanism. Thus, there are two sequential forces that come into play: density and proximity in the physical space for the critical mass, viz. urban communities, which along with the digital infrastructure, viz. the platform, work in tandem in the production of uneven and asymmetrical urban space, viz. diversity. In both cases, information and knowledge are targeted in a specific way, digital platforms list and direct users to specific locations in the city via extensive use of maps and geo-localises providers and users. They do benefit from these elements and in fact, they depend on them. Table 11 is an attempt to itemise different digital platforms and show the diverse output.

Platform Urbanism		
Urban Digital Platforms (not-for-profit, grassroots)		**Global Digital Platforms** (corporate/business)
Civic crowdfunding (i.e. local state intervention)	Commonfare (i.e. mutual aid, tokens, self-organised)	Airbnb Deliveroo Uber
Output Alternative, redistribution of local resources and common goods and services		**Output** Platform Capitalism, extraction of values and exploitation of resources

Table 11. Itemisation within platform urbanism scholarship. **Source.** Author.

While platform urbanism is a new field of study and broadly interrogates the platform-mediated urban condition (Rodgers and Moore, 2018), the UDPs feature the novelty of the concept which emphasises the 'urban' as a battleground for alternative strategies. In the same vein of Fields, Bissell, and Macrorie (2020: 463), UDPs are a new concept for "geographers concerned with the digital urban interface are working to think about the potential for a counter-politics that is not rooted exclusively in resistance or antagonism." Finally, the article does not intend to set a false binary between platform urbanism and UDPs, rather as a continuum between these relevant concepts.

Conclusion

As a conclusion, UDPs such as Commonfare and examples of civic crowdfunding platforms are still certainly not perfect in terms of minority use with respect to global platforms. Yet they are very relevant in order to analyse whether or not they will rework on urban communities and existing inequalities and how they might be made to co-exist in mutually beneficial ways along with neighbourhood associations, solidarity, and social functions in the city. In the end, this is not only a juxtaposition between terms, I consider the advent of what I define as UDPs as a moment to reflect upon the current historical conjunction, and the potential social and collective actions that such platforms can support.

However, UDP are not necessarily forms of resistance. In the two cases analysed, civic crowdfunding still requires the intervention of the local state apparatus, insofar as it is often involved as a regulator or co-founder to develop local projects within the metropolitan areas of the two cities. During the Covid-19 pandemic, the Municipality of Amsterdam launched its own state-led solidarity platform, and in Milan they decided to open up another round of civic crowdfunding. Following empirical research, I observe that citizen-oriented practices pro- moted on UDPs often reproduce a certain unevenness in the distribution of goods and services, prioritizing certain areas of the city over others. While Commonfare represents an alternative, self-organised and autonomous UDP, the obstacles are still evident.

A future research agenda within this burgeoning field might interrogate how and in what way can something be truly non-profit/communal if at each underlying component in the stack, data is being extracted for profit? What communal possibilities exist despite the corporate reliance, the tendency toward data surveillance, and the ways in which each of them reinforces the non-communal aspects of society? How do UDPs create opportunities within these interstices for mundane tactics to escape the algorithms and go 'down the stack,' to co-opt and resist and counter the hegemonic discourse? Tokens and cooperative relations are potential incentives, but as you well know, it is not only about that.

Notes

* Chiappini L. (2020) The urban digital platform: Instances from Milan and Amsterdam. *Urban Planning*, 5(4), 277-288.

Chapter V
Civic Crowdfunding as Urban Digital Platform Milan and Amsterdam. Don't take pictures on a rainy day!*

Introduction

Urban scholars are increasingly interested in the burgeoning field of research broadly defined as 'platform urbanism'. The need to capture nuanced and new important developments that our cities are facing in relation to the diffusion of digital platforms (Barns, 2019) has accrued traction in academia, activist groups and political discussions. The co- occurrences of urban living(s) and reliance on digital platforms to navigate everyday living in these settings is not coincidental (Artioli, 2018). The influence goes both ways: cities are a conducive context for the emergence of digital platforms and at the same time cities are reshaped by the digital spaces that are opened by these platforms (Sadowsky, 2020). The importance of digital platforms is not primarily about computing and algorithms in the narrow sense (Marres, 2017). Digital platforms are also about the commodification of information, which varies by providers, types of transactions and orientations of the platforms (Frenken and Schor, 2019) and changing (local) politics (Ansell and Miura, 2020; Certoma et al., 2020; Hodson et al., 2020).

It results crucial to current urban politics dynamics, in particular, discourses and practices to understand new spatialities generated by the implementation of digital platforms in the urban realm. This article explores the co-constitution between space, technology, and people, using civic crowdfunding as an emblematic example of 'urban digital platforms' (hereafter UDPs), in two prominent European cities Milan and Amsterdam. In this article, it is assessed that those digital platforms might not only reshape socio-economic processes but also have the potential to fundamentally change (urban) political processes. By doing so, it is asked: Who are the actors involved and how do they engage in the provision of goods and services? Where are the projects located? How do gatekeeping and internal mechanisms of decision-taking affect the two cities? The main focus of the article is to detect how these types of platforms function, in terms of gatekeeping, decision-making concerning the re-configuration of allocation of resources within the urban space, as well as the role of the urban government vs the component of self-organisation within civic crowdfunding platforms.

The empirical findings are obtained from fieldwork conducted from 2015 to 2020 in the two cities, Milan and Amsterdam. The deployed methods are mainly qualitative, such as official documents analysis and semi-structured interviews with involved actors. A total of thirty interviews, including personal communication, were conducted with policy-makers, local authorities, technical providers, project managers, citizens, and entrepreneurs, to investigate the internal mechanism (i.e. How and Who: decision/making and gatekeeping by actors in the allocation of resources). To observe closely the degree of media literacy required on the selected platforms, digital ethnography (Caliandro, 2018) has been used as a supportive technique. This helped to interpret how practices of posting and describing projects, tagging localities, promotion of events, the interaction between users, images deployed within municipal websites (cf. Figs. 7 and 8), unfold on civic crowd- funding platforms, and other social media platforms. To show what is

posted and how those platforms work between different stakeholders. GIS mapping (cf. Maps 4 and 5) (Where: location of the projects) was used to identify the spatial patterns associated with crowdfunding in both cities, to validate where these projects are located in relation to existing urban configurations.

The paper is structured as follows. The second section discusses civic crowdfunding and the analytical dimensions which distinguish the concept of platform urbanism from UDPs. The third addresses the new research field of platform urbanism and its politics, within the theoretical framework of digital geography in which the paper is positioned, with a sub-section on obstacles such as media literacy and participation bias. The fourth and the fifth present how civic crowdfunding has been promoted in the two cities, with particular attention to internal mechanisms, media literacy, and its external relation to existing urban spatialities. The sixth section discusses the empirical findings to conclude with broader implications of this study for future research agendas in the urban studies domain and beyond.

Civic crowdfunding as Urban Digital Platform (UDP)

Civic crowdfunding is a form of crowdfunding in which citizens co- fund projects often providing public goods and community services (Stiver et al., 2015). These initiatives are often in collaboration and support by different government agencies and specific departments within whose purview the deliverance of the particular public good in question falls. Goods and services vary from new street markets and revamped playgrounds to initiatives to plant trees along derelict railway lines (Gullino et al., 2019). Ranging from physical structures to amenities and local services, the potential of the impact on the regeneration of urban space(s) at the intersections of civic crowdfunding and urban digital platforms remains largely unexplored across disciplinary scholarship. From these times onwards, we identify these as UDPs. It can be argued that Uber and Airbnb are also considered UDPs because they operate in urban. How- ever, we insist due to the fact they are global in their architecture, designed to be extractive in which the city and users are resources to be mined. Moreover, Airbnb and alike are exploitative in the density, size, and diversity of the urban fabric. Lastly, the algorithm is the data-driven form of governance and result in the computational production of space.

Conversely, the key feature that set UDPs apart from other digital platforms is that they are of and for the city and its inhabitants. For example, civic crowdfunding platforms benefit from the urban as a front to (re-)organise citizen-based, mutual-aid initiatives, and solidarity actions. UDPs are different in the allocation of common goods and services at an urban scale (via P2P transaction), and oriented towards civic and grassroots initiatives in which the local state agencies have a significant role in steering urban development patterns (Chiappini, 2020). Further enhancing the analytical frameworks of 'UDPs', in this article, we, first, conceive the urban both as a physical and political space, that provides the context for a specific set of socio-spatialised practices. Secondly, the

digital is the interface between the logic of computational algorithms and human behaviour (i.e. citizens' responses to particular issues and causes).

These manifestations of UPDs have the potential to fundamentally recalibrate the modalities of interactions between the different actors engaged and impact the decision-making executive powers or/and discourses on the physical space of the city in question (Törnberg and Uitermark, 2020). Third, the platform itself becomes an archive of the particular intersections of the logics of computational algorithms and citizen participation in the forms and kinds of urban spaces, irrespective of its success, that UDPs open up and the challenges ahead. Lastly, the platforms are depositories of citizen data which is both a challenge and an opportunity to be critically addressed. The UDPs data depository is open to the danger of constituent groups to be strategically identified and targeted to frame particular political discourses influencing urban politics.
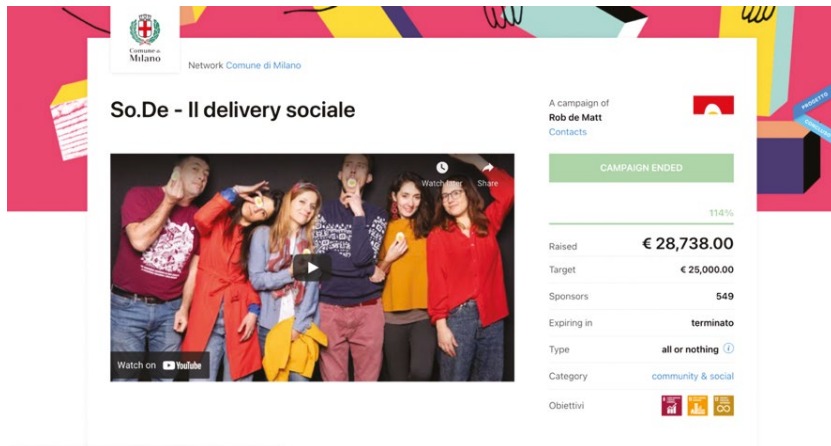

Figure 7. So.De il Delivery Sociale, one of the winning project of the Milanese civic crowdfunding (based on the platform website).

Examples of UDPs are welfare platforms like Commonfare (Chiappini, 2022), as well as different initiatives launched during the first wave of Covid-19 for solidarity, mutualism and grassroots actions (Mos, 2020). The collaborative platforms, in which the citizens play a critical role in the way of raising funds and popularity, are containers and propellers for regeneration of diverse urban spaces, which compels and complements welfare practices, from child-care to makerspaces and coworking (Chiappini and Törnberg, 2019). The emergence of the UDPs is embedded in the extractive and exploitative global digital economies (Amoore and Raley, 2017). The UDPs aim at creative, simultaneous and parallel use to harness locally embedded democratic practices. In the same vein, local non-corporate platforms exist, where governments and civil society participate in forms of cooperation to implement neighbourhood and support local-based initiatives (Rose, 2021).
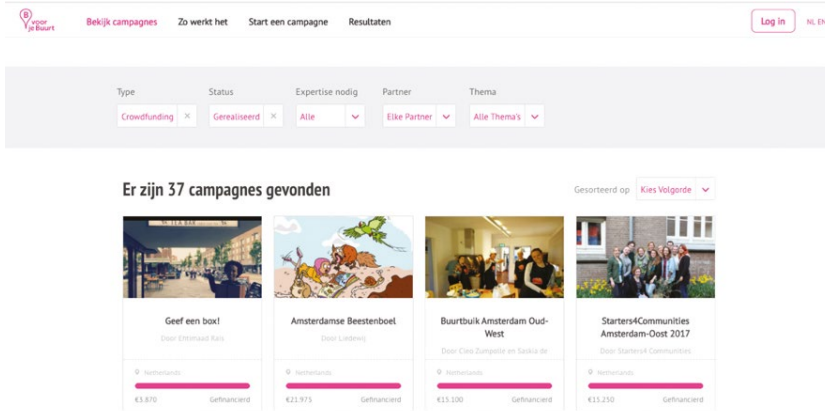
Figure 8. Voor je Buurt – thumbnails of projects (based on the platform website).

By focusing on UDPs that operate in two European cities, Milan and Amsterdam, the article explores the modalities of UDPs practices. This is about the motives of and rules of the government of these platforms. The motives behind the appropriation of these collaborative platforms by actors are reviewed, in terms of the efforts geared towards urban rejuvenation and development. Rules must be understood as both explicit and tacit, and to be embedded in the local social, cultural spaces and spatialities. Both in Milan and Amsterdam, UPDs have already become a part of political debates over the regulatory framework, planning reforms and part of smart city agendas. However, the article considers the current state of affairs mainly indicative of the potential that these platforms have to impact the dynamics of collaborative practices of urban regeneration/ revival, with a focus on both the immediate and long-term collectives, mandates, between the citizens, technology providers and the government agencies.

The politics of platform urbanism

In recent years, digital platforms have become an important facet of contemporary forms of urbanism. In a nutshell, digital platforms might entail economic exchanges (i.e. P2P), define new urban governance arrangements (Barns, 2018), as well as a more networked collaboration between different stakeholders (Sadowsky, 2020). Some urban scholars tend to neglect the pervasive nature and negative effects of digital platforms, proclaiming cities like Amsterdam and Milan as 'Sharing Cities' (Agyeman and McLaren, 2017). Nevertheless, the pervasiveness of the profit-driven digital platforms unfolds at the core of everyday life activities and urban governance (Richardson, 2020; van Dijck et al., 2018) and thereby, the relationship between urban platforms, politics, space and society is impossible to ignore.

However, the story of the UDPs cannot be reduced to only a narrative about computational, big data and algorithms regimes. The American sociologist, architectural and design theorist Bratton (2016: 18), drawing on his interdisciplinary focus on physical and

digital spaces, and the implications of the intertwining of these two spatialities, claims that the "contemporary Cloud platforms are displacing, if not replacing, traditional core functions of states, and demonstrating, for both good and ill, new spatial and temporal models of politics and publics". In this view, digital platforms introduce a new form of societal coordination between actors, specifically between market-state-communities. According to Bratton, the outcome of this interaction affects the use and trans- formation of cities and their politics as is evidenced by UDPs towards the rejuvenation and regeneration of the cities.

The rise of the UDPs, particularly during the Covid-19 crisis, reveals that these platforms have and will further assume significant roles in the local governance and will change decision-making on the use of the urban spaces which will create new dilemmas (Chiappini, 2020). In the current academic debate, these dilemmas mainly focus on issues of data ownership and privacy (Ferrari, 2020), data safety and its accountability. It is assumed that powerful interest groups, through their ownership and a manipulation of data will impact political, financial and policy decisions (Coletta et al., 2018). A prevailing analogy is that of the city as an operating system, in which its hardware, the built environment, and the software, societal negotiations, are tied together by an information processing system via the UDPs.

It has been noted that UDPs, partially, displace decision-making from the governmental realm to the societal realm (Lynch, 2020). Within the decision-making process, governments are further challenged by the fact that the public sector is lacking behind the private sector concerning its knowledge of digital technologies and the resources devoted to the digital infrastructure. How the public sector funding is cut down by making precisely the argument that it lacks the technological, technical know-how is to privilege the privatisation of key state functions (Graham and Dutton, 2014), in which governments are forced to rely on certain types of digital technologies and become dependent on the companies that provide these technologies (Gillespie, 2010). However, Mazzucato (2018) also points out that governments can be innovative and promote initiatives on a lower budget, to address complex urban policy problems, such as accountability, participation, spatial polarisation and social exclusion at the local authority levels (Hollow, 2013). Cities have deployed these tools as an alternative way of redistributing goods and services that the market and the state are no longer able to provide, directly engaging citizens in the production of space (Datta and Odendall, 2019).

Media literacy and participation bias

Previous work (Chiappini, 2020) proposed a conceptualisation of the UDP, which narrows down the scope and the object of study to grasp the diversity between digital platforms. In general terms, crowdfunding is conceived as "a collective effort by people who network and pool their money together, usually via the Internet, to invest in and support efforts initiated by other people or organizations" (Ordanini et al., 2011: 444).

Civic crowdfunding is the funding of projects which, directly or indirectly, benefit from government funds, assets, or sponsorship, and may include the development of public assets (Davies, 2015: 17) such as public parks, sidewalk maintenance, and wireless Internet. This has noticeably a direct impact on existing urban geography and governance arrangements within cities. The potential that the UDPs offer, seamlessly fits with the idea "that citizens are themselves responsible for the quality of the urban environment... [which] today [is] institutionalised through all kinds of regulatory frames" (Savini, 2017: 9). The strategic manners in which government agencies, across Europe, are employing engaging with the UDPs to solicit citizens' contributions suggest that the state agencies are keen on reducing their role in everyday governance as also their limited re-sources in public enterprises.

A last critical aspect, also common in smart city projects oriented to citizens initiatives, is the type of participation and the bias in accessing them, in terms of digital skills of users. It has a direct consequence for services and goods allocated via projects visible both on the platform and in the urban space. Mattern (2014) showed that smart city projects in which ideas are discussed and partnerships often exclude a large group, because of a participation bias towards 'young well-educated professionals'. Their needs are often not reflective of the wider com- munity interests. Other important findings by Perng, Kitchin, Donncha, and Darach (2018) suggest that hackathons and other smart urbanism initiatives are organised by companies working in partnership with city administrations, the participants are often technically literate who work in the tech sector.

Governmental strategy in Milan

In 2015, civic crowdfunding experimentations became trendy amongst several municipalities in Italy (Pacchi and Pais, 2017). Government agencies started to assume a significant role as facilitators and curators of campaigns to support local projects, particularly in the sec- tors they found their networks of deliverance and assessments limited. Milan has been one of the first cities in adopting civic crowdfunding as a policy tool. The councillors for economic and social policies of the Democratic Party launched Crowdfunding Civico[26]. The political motives behind the call for civic crowdfunding were in line with the Milano Smart City agenda, aimed at "building and communicating the Smart Milan Approach with all related stakeholders and encouraging the adoption of a smart city governance model to foster social economy in the city[27]." The first edition of Crowdfunding Civico was announced with a public tender worth 30,000 euros for the selection of the technical provider for the cloud platform, won by Eppela, a corporate Italian web company. The municipality identified thematic areas and criteria for the selection of projects that later on would have to be co-financed by citizens. The thematic areas outlined were: making the city more accessible, with special attention to the most fragile and marginalised segments of the population; technological innovation to support urban connectivity; innovative information systems for mobility, culture and quality of life; in-

novation in care services and life-work balance; sharing territorial resources among its residents (Pacchi and Pais, 2017).

Both organisations and citizens were invited via an open call on the Municipal website to propose their initiatives. In response to the call, the municipality received 54 proposals out of which 18 projects were selected by a group of experts consisting of a project developer of the platform from Eppela and civil servants. The committee acted as a gatekeeper and decided on the projects that would be promoted on the Crowdfunding Civico website, reviewing and making the final decision about which projects should be hosted on the platform. Initiatives that were successful during the online campaign, namely which reached the target level by six months of online campaigning were then eligible to be co-funded by the municipality. The maximum funds to be provided by the local government was capped at 400,000 euros. The civic crowd- funding projects were hosted and made public on the platform provided by Eppela. The citizens' contributions generated a total of euros 330,000 (1308 user donations on the platform, which was matched with euros 323,413 as a contribution by the municipality). The estimated potential impact on the local economy was assessed to be euros 653,4134[28]. The managing director of Eppela, lauded his collaboration with the Milanese municipality:

> "Thanks to the commitment of the City of Milan, among the most innovative Italian cities, civic crowdfunding is no longer a matter of the future but an indispensable tool for urban coexistence. Our experiment has opened a new way to bring citizens and local communities closer together to the public administration for the implementation of projects which were premised on the ideas related to the cultural and social regeneration of urban areas or the technological innovations related to mobility and social services."
> (Interviewee #26)

Riding the wave of success of civic crowdfunding, during the first wave of Covid-19 in May 2020, the local government has decided to launch a second edition. The initiative was announced in January 2020, just before the pandemic broke out, and another technical provider, Produzioni dal Basso (Bottom-Up Production), was selected instead of Eppela. One of the reasons, it was speculated, was that Bottom-Up Production's is located in Milan. One of its interviewed project developers framed it as follows:

> "We have offered to the municipality to promote citizen participation and the fundraising parts, offering tutoring and mentorship services to the projects throughout the steps leading to the implementation of the ideas also offline in our office in Milan. The new projects to be included in the crowdfunding platform will be promoted in 2021."
> (Interviewee #29)

One of the winning projects in the first edition and participant in the second one focuses on developing sustainable delivery mechanisms as an alternative to the gig-econ-

omy platform like Uber Eats and Deliveroo. The project is initiated by the restaurant Rob de Matt, which is located in the neighbourhood of Dergano, North of Milan. The restaurant aims at establishing a proof-of-concept of the revitalisation of the vulnerable and peripheral neighbourhoods in Milan, Dergano being one of the neighbourhoods which is representative of such peripheralization. It aims to do so by instituting delivery mechanisms and networks which are then optimised to deliver other goods, medicines and essential ser- vices, along with food which is the main focus. The founder of the initiative (So.De il Delivery Sociale, cf. Fig. 7) who is also the owner of the restaurant, however, raised some concerns regarding the procedure of the campaign:

> "It is not easy to participate, you should know the rules of the game. We are now in the second edition, after winning the first one. Citizens play a marginal role in funding; everything is decided by the municipality and the network around the new technical providers. Although technical support is offered for the campaign, most of the work has been done before the project will be visible on the platform." (Interviewee #30)

A major concern raised by the founder is that geographical location of the project correlates with a degree of media literacy required to partake in the campaign and therefore plays a significant role in the citizen contributions that make UDPs a success or not. Many projects that are promoted and supported through the UDPs focus on citizen participation, urban regeneration, sustainability, engaging the fragile and marginalised sections of the society, socially and spatially, and to give their concerns a voice.

Examples as the restaurant Rob de Matt, focus on the sustainable delivery mechanisms with focus on improving existing community centre, kitchen for communal use, free provision of tap water; support for vulnerable women, and unemployed; mutual support, providing after school care for children; urban gardening in a vacant parking lot (Pomodorti); transformation of a mafia residence into an apartment block (Facciamo Festa alla Mafia); temporary event and art exhibition against discrimination and racism made by primary schools; cultural incubator, musicians and visual artists can use the space to practice and develop their projects (Il Cantiere dell'Ortica). The digital ethnography conducted helps to observe the main features of the platform, as well as practices of posting, localities, uses of hashtags (cf. Fig. 7). The digital ethnography material shows that the platform is presented as a digital dashboard, the backend is Wordpress in which a content creator can access the range of widgets and plugins needed to publish a webpage. The webpage covers new projects, the already financed ones, the ones with a close deadline and the winning ones. On the level of each project, a money bar is shown that illustrates the progress of crowdfunding and the percentage of the already gathered amount. There is also a timeline that counts down the days to the deadline. The platform's format implied a range of requirements to those who could post a project. For

instance, it is required to post multi-media content, it only allows for a brief description of the aim and the mission of each project, a selection of keywords and hashtags.

Digital ethnography conducted during the online campaigns provided figures on the average donation per project, projects collected on an average of more than 500 euros per donation. Given the average household contribution, it is likely that civic crowdfunding has an intrinsic participation bias, the donors were often the same non-profit organisation that launched the initiative, or by entrepreneurs and philanthropists, citizens and individual households were marginal in funding campaigns. For example, the cultural incubator Cantiere dell'Ortica obtained 6,000 euros from another non-profit organisation which amounted to more than a quarter of the money raised for the project. The contributions, across the spectrum of profit and non-profit organisations and individuals, to projects with a focus on social care, urban regeneration, among others, is suggestive of a process of filling the gap which a retreating local government in Milan has created, mainly in the area of social care.

Map 4. Civic crowdfunding projects in Milan (2016-2020). **Source.** Author.

The Map 4 above shows, the two editions of civic crowd- funding have promoted diverse projects scattered in the city, in particular, several Internet-based initiatives focus on the city as a whole (e.g. So Lunch, CN Smart Hub, EcoLab, Child Explorer). Looking closer at where the projects are situated, the majority of them are located in gentrifying neighbourhoods (e.g. Rob de Matt, Facciamo Festa alla Mafia), as well as within middle-class and upper-middle-class districts (e.g. Smart City Lab, Ti Facilita la Vita). Only a few are situated in what could be called a deprived neighbourhood, in the outskirts of the city (e.g. Pomodorti, Gallab). The degree of openness of the platform can also be considered in

terms of access to physical urban space, namely 'opening- up and including more actors, as well as increasing the distribution of goods and services in areas that are not usually considered. For instance, those areas are not considered attractive for an announcement of accommodation on Airbnb. However, the limited number of projects within marginal areas show that the degree of openness and access to the platform does not take for granted a more inclusive urban development.

Social entrepreneurship rationale in Amsterdam

Since 2012, several local authorities in the Netherlands have been testing civic crowdfunding as a policy instrument (Chigova and Van der Waldt, 2021). Amongst them, the Municipality of Amsterdam is a strong supporter of bottom-up initiatives supported by digital technologies:

> "We have come from a time of many hierarchical systems. The government and the organisations around it are very top-down organised and I see that people around me need to determine more about their living environment. Platforms allow citizens to participate and foster bottom-up actions."
> (Interviewee #36)

In 2016, a total of euros 1.3 million was raised for 260 projects, from some 20,000 individual donations. The two national crowdfunding platforms which played a critical role and raised more than 90% of the funding via civic crowdfunding funding are, Voor je Buurt and 1%Club[29]. The Amsterdam think-tank Kennisland founded Voor je Buurt as a pilot project in cooperation with Network Democracy and other partners. The website was launched in 2013 and built-up successfully within Kennisland in which transparency and engagement of residents are claimed to be leading values for the organisation. In 2015 Voor je Buurt became an independent organisation. Over the past years, Voor je Buurt has been gaining popularity amongst urban governments, which inscribed civic crowdfunding as part the Amsterdam Smart City agenda and as a tool to solve urban problems[30].

From the beginning, the premise of the initiative has been to foster public-private partnerships, involving actors such as the municipalities in the Amsterdam Metropolitan Area, and both private companies and not-for-profit organisations. The private companies which partner with the Amsterdam Smart City initiatives are the firms for which the urban environment poses specific technological challenges and/or opportunities, such as a telecom company, the postal service, the grid company and multinational (urban and infrastructure) design and consultancy companies. The not-for-profit sector is represented by universities, associations, and grassroots organisations. As many other Smart City initiatives across the world, the Amsterdam Smart City is presented as a project to privilege the citizens' concerns and create innovative platforms to involve the public at

large. However, it is evident that the 'Amsterdam Smart City' project is also an advertisement for the world to showcase Amsterdam as a technology-savvy place.

The Voor je Buurt is a non-profit platform and officially certified as a charity[31]. It receives regular subsidies, from national and local governmental and non-governmental funding agencies. The platform charges a service fee of 5 percent of the sum raised by projects that have reached their target. They encourage social projects that make a 'positive social contribution' and that is 'not primarily focused on personal gain', however at the same time the platform does not forbid profit-making projects (Bakker and de Graaf, 2017). As the only gate-keeper, Voor je Buurt not only evaluates the social contribution of projects but also as- sesses the estimated impact of the projects that will be successful in raising money if hosted on their platform. In addition to offering a cloud platform, the organisation provides technical and practical support and advice to make the online campaign successful. Furthermore, the organisation acts as an intermediary between grassroots initiatives and institutional funders, both governmental and charitable mandates. Although Voor je Buurt is a national organisation, as the name already suggests, the level of intervention is primarily urban and neighbourhood scales. As one of the project developers states in an interview:

> "We offer local support to citizens who want to develop an idea in their neighbourhood. There is a volunteering principle behind campaigns [...] The campaigns are both offline and online. We offer training, technical support, and money from the campaign, to make their ideas successful and to recruit other volunteers in the area [...] There are projects oriented to business or charity like cancer organisations."
>
> (Interviewee #52)

Voor je Buurt, showcases, using simple metrics on a digital dash- board, the success and failures across the civic crowdfunding projects they have hosted. In its role as a gatekeeper, the platform assesses the impact of the proposed projects, and the metrics on success and failure factors are likely to be used to decide whether a campaign makes it to the website. The success rate of the projects on the platform is significant up to 80 percent, their statistics gives an impression that it is quite easy to apply and to obtain financial resources. However, an applicant, who was (un)successful in bidding for their project on the platform, suggested otherwise and highlighted the shady selective nature of the process:

> "It [civic-crowdfunding] is an insignificant collective effort. I mean, if you look at the small number of users on the platform and who gets the money are not citizens, but organisations that are active in the non-profit. Starter4Communities is one of the most successful campaigns. Citizens are called to support a project that is already successful in a certain way." (Interviewee #54).

In providing criteria regarding what makes civic crowdfunding projects successful, Voor je Buurt is setting, mechanisms and features that determine which projects will be promoted on the platform. In an interview with an employee at Starter4Communities, which is one of the prominent actors in campaigning, it was emphasised that there is a conspicuous workload of running a campaign both offline and online, which requires the formation of a team of people. Furthermore, the existence of a community, such as a sports club or school, that can be addressed is somewhat paradoxically mentioned as a pre-condition for a successful project, while community building is an important goal at the same time. The website also sheds light on the skills and resources that are needed. Besides, the capacity to post-digital material and technical skills are considered a pre-requisite for the success of the proposed project to be hosted on the platform.

Moreover, the online activities need to be accompanied by offline promotions (see also Stiver et al., 2015), such as making press releases and organising events. Concerning the characteristics of the projects that are deemed promising, tacitly, the project should, first and foremost, be premised on a positive and promising narrative "Crowdfunding works best with a positive message instead of a pathetic story" and "Don't take pictures on a rainy day!" For instance, raising funds for maintenance or operational costs of electricity are not considered appealing for the platform.

After the observation of dynamics about posting and interacting between users, Figure 8 above denotes that the description of the projects, captions, related images should be catchy in the thumb-nail as any other product on a platform. Concerning the funding, it becomes clear that in almost all cases the crowd is not anonymous. First, the personal network of those who start a project constitutes an important target group. Second, most campaigns on the platform are not solely dependent on small donations from the crowd but involve a larger public sector or private sponsor. Crowdfunding is also framed as a practice to convince larger (philanthropic) donors, local and national fund providers for social and solidarity initiatives. Around half of the projects involve larger donors and only two are exclusively based on small donations.

Some relevant projects to exemplify those types of interventions are De Groene van Amsterdam, temporary event 'green marathon' sport, and Pluk! Groenten van West a greenhouse and kitchen garden, where there is an exchange between citizens and local farmers without intermediaries. Other projects are more oriented to social support and community building such as Geef een box! a box with winter clothes for refugees' children and asylum seekers and a temporary event, with commercial partners like Kloffie company and T-Company which sponsored the event. Another project is Buurtbuik Oud-West*[32] as volunteering activities to reduce food waste. The most active on the platforms are the above organisations, located in all Amsterdam neighbourhoods except within the canal belt in the city centre, and Starter4Communites*, neighbourhood initiatives which provide the development of professional skills to start bottom-up initiatives and emerging social enterprises (with ShareNL as a main sponsor/partner).

Furthermore, the Map 5 below shows that the majority of the projects are not allocated in the historical city centre (canal belt), but in the late 19th/early 20th-century ring around it. Within Amsterdam, the majority of the projects is located in those areas that have been or are gentrifying.

Map 5. Civic crowdfunding projects in Amsterdam (2016-2020). **Source.** Author.

The mapping results do not show a significant degree of openness towards areas of the city that need intervention in terms of redistribution of goods and services, rather an expected concentration in neighbourhoods that are already provided.

Discussion

In this paper, the new lens proposed by digital geography scholarship helps to observe civic crowdfunding as a form of mutual co-constitution between technology, society, and space (Ash et al., 2019). The contribution helps to understand mechanisms of allocating resources. These cases show that the presence of non-professional volunteers (users and campaign initiators) has been crucial in the campaigns promoted on the platforms. However, the data generated on these platforms are still owned by the technical providers of the two platforms in the respective cities and are not accessible to the initiators of the campaign or local authorities.

In Milan the civic crowdfunding platform has been promoted directly as a governmental strategy which is in accordance with the idea that civic crowdfunding in urban policies as a tool for complementing the distribution of social goods and in the city. In Amsterdam, the primary rationale behind civic crowdfunding is to promote social entrepreneurship and community building activities. Although the role of the state agencies

in the two cities, as detailed in earlier sections, varies in terms of visibility and active promotion of civic crowdfunding plat- forms, and financial support, it can be assessed that the political motives are closely related to the Smart City Agendas and quite similar in their intentions, such as reviving public participation; replacing public funds with private funds; business interests in ICT and data production from citizens as volunteers (Trivellato, 2017). In Table 12 below, figures are shown to indicate when the two plat- forms have started operating in the two cities and editions, how many projects have been funded within the specified time-frame, and the role of local governments.

	Editions	#Projects successfully funded (2016-2020)*	Role of local governments
Civic Crowdfunding (Milan)	Two editions: 2016-2018 2020-2022	21	Initiator and Curator
Voor je Buurt (Amsterdam)	First edition in 2012 Still ongoing	19	Marginal – una tantum intervention

Table 12. Civic crowdfunding in Milan and Amsterdam. The symbol (*) corresponds to the time-frame in which digital ethnography has been conducted and to the projects that have been included in the analysis. **Source.** Author.

The cases allow for some reflections on the working of civic crowd- funding platforms as forms of urban collective decision-making. The main findings are listed below, and they will be expanded one by one in the discussion: a) While the role of government differs in Milan and Amsterdam, in both the decision-making is relatively untransparent. b) Civic crowdfunding contributes to the (further) constitution of networks and practices that cross traditional spheres of society and in doing so blur the boundaries between non-profit and for-profit. c) The combi- nation of online and offline activities is essential in the understanding of the function of these platforms. d) There is a tension between the rhetoric about civic crowdfunding as a tool to pull public resources via many small donations and the practice, in almost all cases, the money raised is only partly from small number donors, whereas a large number of small donors would be a better indicator of public support, raising issue about participation biases.

   (a) The cases provide no indications that data transparency is a particularly well-con- sidered subject. Maybe due to naivety or to avoid higher costs, the Milanese government chose to ignore the issue all together. In Amsterdam, Voor je Buurt provides some in-

formation, but as a non-governmental foundation it is not subject to strict rules about transparency such as a 'Freedom of Information act for governments'. In both cases the gatekeeping function – who decides about which proposals are allowed a chance to be promoted and raise money – could be described as a black box. In both cases, there is no indication that the data collected through the platforms are used as a production factor in other, commercial, enterprises. In Milan, the main gatekeeper remains the municipality and the technical provider of the platform (Eppela in the first edition, and Bottom-Up Production in the second one). Affected by a lack of municipal financial resources, the objectives within the Milanese Smart City agenda were to generate small but tangible outcomes with innovative ways of financing projects of public interests (Gullino et al., 2019). In Amsterdam, the only gatekeeper is the platform Voor je Buurt which has developed criteria for the pre-selection of projects. Although these criteria allow for a very broad range of projects, they also create a discretionary space for experts within the management of the platform. There is no indication that the data collected through the platforms are used as a production factor in other, commercial, enterprises.

(b) The intention of both civic crowdfunding platforms is clearly to deliver public goods – which would not be provided by the market and traditionally has been the domain of government, but as a result of its mechanisms, the boundaries with the provision of private goods and services become blurred. For both cases, proposed initiatives do not exclude profit-making or the provision of private goods and services at market rates. As is evident in the case of Voor je Buurt, which also hosts profit-making projects, where commercial activities and social objectives are combined. One of the winning projects in Milan, Facciamo Festa alla Mafia, results in the promotion of a real estate company that took the lead in the restructuring and upgrading of vacant property in the south of Milan previously owned by members of criminal organisations, and subsequently selling apartments on the private market.

(c & d) From the view of civic crowdfunding as a process, in both cases the idea that civic crowdfunding through public participation is a mode of gauging public support for a project is prevalent. This particularly comes to the fore in the fact that governments (and charities) see successful civic crowdfunding as a reason for providing funds. In addition, in both cases, civic crowdfunding is, to a certain extent implicitly, considered to be more than the expression of a preference through a donation. Being part of a campaign should lead to a more profound engagement with the project, for example through active, in-kind, participation or a sense of ownership of the project. However, the crowd is not anonymous. In particular, the Amsterdam case shows that successful crowdfunding is assumed to be based on activating an existing community. Driven by the desire to revive local democracy, while at the same time the key role of gatekeepers run the risk of undermining democratic decision-making.

Thus, civic crowdfunding platforms seem to fit in to the trend highlighted by digital geographies' approaches in which access to digitally mediated services and goods are

unequally distributed and unevenly affects the city (Ash et al., 2015). In both cities, the trend is for the government agencies to perform the role of enablers by supporting the development of civic crowdfunding initiatives. By providing an infrastructure on which external parties can build tools, governments optimise the potential for innovation, participation and experimentation across the spectrum of actors involved and accommodating the corresponding motivations. As the state provides basic arrangements, it enables the private and civic sector to flourish. In both cities, local authorities suggest an underlying policy rationale that is increasingly common: when governments deliver the digital infrastructure, the rest will resolve itself. The spatial analysis of the projects in Amsterdam and Milan seem to indicate that social inequality is not resolved and more likely reinforced by the new practices.

Conclusion: Don't take pictures on a rainy day!

To complement recent work on platform urbanism, this paper offers a narrative and mapping exercises of projects and practices that shed light on critical aspects of the notion of platform urbanism within urban politics. It does not foreclose a constructive role of platform urbanism in urban politics, but it is also critical about the legitimisation of these civic crowdfunding platforms as 'full blown' alternative to political decision making in future cities. It is meant to encourage a debate on potential counter-politics and resistance to the extractive and dominant corporate digital platforms. In the same vein of a "glitchy vignette" (Leszczynski, 2020), proposed as a minor theory of platform urbanism, civic crowdfunding led to reconfigurations of power between private-public and civil society, which might be helpful to interpret the future developments of cities.

However, there are limitations in terms of who can access to the platforms and propose initiatives that will be successful. The literature suggests that issues related to media literacy (Pais and Bonini, 2017) of users, digital skills and participation bias (Pais and Provasi, 2020) are crucial aspects to be considered. The skills needed to organise the online aspects of a civic-crowdfunding campaign, seem to border on the capabilities of a small-scale marketing consultancy firm. They at least require specific digital skills, in posting pictures and captions, as well as the ability to make short video clips (i.e. Medicinema, the video was made by the famous Italian director by Giuseppe Tornatore). The technology and the medium require projects to be 'attractive' and well-suited to the platform. The subtitle of the paper, "Don't take pictures on a rainy day!" advised by Voor je Buurt, is meant to increase the chance that a project is financially supported on the civic crowdfunding platform. It is a 'platform-genic' trait, as a house announcement on Airbnb, with great pics, accurate description, and its rate of engagement. This strategic advice confirms that technology combined with decision-making principles is forcefully framing problems of collective action positively, using eye-catching images and brief captions supported by hashtags. This applies also to the communication about civic-crowdfunding projects and the length of the campaign (usually months less than a year). As result, it is important to make an impression in a short space of time. Origi-

nality and a positive message seem to be a conditio sine qua non. This is a disadvantage for projects that aim to provide ordinary, but possible crucial, urban goods and services, that stir social conflict or that need to be well-explained to become convincing (cf. Stiver et al., 2015).

The medium also favours visual presentations that are translated in initiatives situated in the urban space; this implies that projects that have something to, literally, show for – something to be built, situated in a concrete place, involving real people – have an advantage over projects that represent more abstract or real innovative goods and services. Furthermore, the projects in both cities also show that online campaigns are complemented by offline activities, which demand a lot of time and skills from those who organise the project. This is at odds with the belief that smart applications would make urban decision-making more efficient.

Finally, it is observed that in both cities the platforms seem to re-enforce existing urban dynamics. The fact that civic crowdfunding is often based on activating a specific urban community and requires the skills that are only present in part of the population, makes it more likely that they emerge and succeed in certain neighbourhoods with a young, well-educated population and not in deprived urban areas. In our cases, civic crowdfunding is not about a process in which technology, through data collection and algorithms, 'takes over' within the decision-making. It is about the way the medium – together with its gate-keepers, determine what can be promoted as goods and services and ultimately accessible in the urban space. In the light of the critical comments above, platform-based civic crowdfunding might play a good role as an additional way – instead of replacing traditional ways – of providing urban public goods and services. In situations where there is potential, it contributes to unleashing societal energy, plays a strong role in connecting projects to relevant networks of actors and contributes to capacity building among social entrepreneurs.

Notes

*   Chiappini L. and de Vries J. (2022) Civic Crowdfunding as Urban Digital Platform in Milan and Amsterdam: Don't take pictures on a rainy day! *Digital Geography and Society*, 3.

26. Milanese Municipality: https://www.crowdfundingbuzz.it/il-comune-di-milano-lancia-un-bando-per-co-finanziare-campagne-di-crowdfunding-civico/.

27. Milanese Municipality smart city guideline: http://www.milanosmartcity.org/

28. Eppela website: https://www.eppela.com/it .

29. *Crowdfundingcijfers* [crowdfunding statistics]: Crowdfundingcijfers.nl/crowdfunding-in-nederland-2019/2020.

30. Amsterdam Smart City Network: https://amsterdamsmartcity.com/network/amsterdam-smart-city

31. See the website: https://voorjebuurt.nl/nl/pages/verhaal.

32. The symbol (*) indicates projects supported and co-financed by local and national funds, VSB and DOEN funds.

Chapter VI
Commonfare as Urban Digital Platform. 'Stories' from Milan and Amsterdam*

Introduction

Digital platforms are an urban phenomenon, both shaped by and shaping the cities in which they function. In this context, they have come to facilitate diverse forms of exchange, whether within the economy or beyond it (Hodson et al., 2020), such as the organisation of markets, work, patterns of consumption, local welfare (Kazepov et al., 2020), and citizen participation. Indeed, their growing significance has led increasingly large numbers of urban scholars to consider the "complex geographies of imbricated offline and online spaces within and across cities" (Boy and Uitermark, 2020: 5). The aim of this paper is to explore a new approach to this field of research, by engaging with the concept of "platform urbanism"[34] (Barns, 2019) and employing the lens of digital geography (Ash, Kitchin, and Leszczynski, 2019). Within these theoretical debates, the term "urban digital platform" (UDP) has recently been proposed to refer to a subset of platforms and their analytical dimensions that differ considerably from their corporate counterparts (Chiappini, 2020). UDPs are non-profit and bottom-up in terms of data ownership, and act as fora for public participation and citizen-driven initiatives. However, some important considerations remain underexplored in these nuanced discussions about digital platforms, platform urbanism, and the coexistence of diverse economies. These include the specific discourses, actors, and mechanisms that underpin UDPs, disintermediation, and redistribution (that is, their accessibility, openness, mutualism, and the internal democratic control available to their users), as well as the extent to which specific users and spaces are represented more than others.

The paper focuses on the inherent UDP Commonfare[35], a bottom-up platform designed to provide complementary welfare measures and currently active in three major European cities: Milan, Amsterdam, and Zagreb. Complementary welfare measures include solidarity buying groups, cohabitation experiences, FabLabs, time banks, co-working spaces, self-managed crèches, social cooperatives, ethical banks, urban gardens, popular gyms, and campaigns for free and open-source software. Commonfare is dedicated to supporting households and communities in more precarious positions than those with higher incomes as they face the erosion of government investment in the reproductive capacity of public life through welfare provision, healthcare, education, public space, and the environment. Feminist geographers have shown how a consideration of the spatial within social reproduction is particularly important to understanding the development of our cities (Katz, 2001). Indeed, cities have been particularly vulnerable to such erosions (Federici, 2012), and the geographically uneven impacts of austerity that followed are the result of significant cuts to public expenditure, tax changes, and welfare entitlements (James, 2020).

In light of the above, the practice of sharing material and immaterial goods and services is crucial to ensure a certain degree of social reproduction, via the use of digital platforms and other embedded digital tools such as social wallets and a given cryptocurrency. It is also the case, however, that Commonfare and initiatives similar to it may

encounter obstacles to access as a result of techno biases, media literacy, low levels of participation, or the over-representation of certain users, as well as issues related to the availability of financial resources such as subsidies and grants.

This paper's principal contribution will be to identify the discourse surrounding this particular subset of platforms, and to examine their ability to produce and redistribute goods and services for urban communities. The aim is to analyse the functional mechanisms and spatial outcomes of Commonfare in two different contexts: Milan and Amsterdam. The focus on Commonfare allows a discussion not only of the platform and how it operates in these locations, but of a number of broader questions: what are the narratives and discourses built around it? Who are the main actors involved, and how are resources allocated? To what extent is Commonfare able to disintermediate and redistribute at an urban scale?

The paper addresses these questions via a number of different routes, ranging from conventional qualitative methods such as interviews and participatory observations (Ritchie et al., 2013) in both cities, to digital ethnography (Hjorth et al., 2017; Caliandro, 2018). The discussion takes the form of a document analysis (newspapers, reports, deliverables), digital ethnography (observing practices such as posting photos, writing captions or comments, and exchanging cryptocurrency), and an analysis of digital content (websites, forums, and social media)[36]. Moreover, thirty in-depth, face-to-face, and unstructured interviews were conducted, with five representing the two cities (consortium and software developers) and the rest divided between researchers, artists, activists, and policymakers (fifteen in Milan and ten in Amsterdam).

Unstructured interviews are appropriate here because they allow participants to build up their own narratives of different techno-political trends. The interviews reveal discourses, that is, the rhetoric used to describe Commonfare and its functions, as well as the mechanisms of and obstacles to launching and implementing the platform (in terms of both offline and online activities). The empirical material collected is part of the fieldwork conducted between 2015-2020[37].

The paper is structured as follows: the first section addresses the theoretical debate surrounding platform urbanism, cooperativism, and UDPs, as well as their underlying discourses, mechanisms, and actors; the second presents the Commonfare project; the third contains an empirical analysis of the two urban contexts, Milan and Amsterdam; and the final section offers a discussion of the findings to conclude on potential avenues for future research.

Platform urbanism: discourses, mechanisms, and actors

The ways in which Airbnb, Uber, and Deliveroo mediate social relations and extract value from these transactions as they unfold predominantly in (and as) the urban realm have been extensively documented and discussed (see Armano et al., 2018; Graham and

Woodcock, 2018). In general, all digital platforms have a clear impact on the distribution of services and goods, as well as on welfare. This is particularly true in urban contexts, where social relations are condensed as a result of greater physical proximity. Within the emerging research into platform urbanism (Barns, 2019), it is clear that all kinds of digital platform benefit from the population density and spatial proximity of users/workers in cities (Artioli, 2018). For example, food delivery platforms rely on providers (such as restaurants and cafés) and users mainly located in urban areas. The denser the space, in terms of users and amenities, the more profit can be extracted by the platform. The study of platform urbanism, however, implies more than simply applying an analysis of platform capitalism to the city space (Sadowski, 2020a). The discussion around platforms appears to be expanding to encompass new configurations of urban governance (Barns, 2018), "vignettes of resistance" against the exploitation of data and knowledge (Leszczynski, 2020), and other practices designed to counter the logic of algorithms and the power of "Silicon Valley unicorns" (Amore et al., 2020).

Indeed, there are platforms that do not necessarily extract value from physical density and exploit social relations. So-called urban digital platforms (UDPs) demonstrate a different approach, and are characterised by such features as a non-profit business model, principles of self-organisation, solidarity, and complementary welfare provision. What is more, they maintain an open, horizontal internal structure in which citizens are directly involved in the production of space (Chiappini, 2020). Within urban studies, and particularly from a policy perspective, self-organisation is useful as a means of problematising concepts such as access/accessibility, internal democratic control, and the capacity to redistribute goods and services within a given community. As Savini (2016) has commented, the self-organisation principle works in conjunction with collective or individual action to "inspire visions if an urbanism beyond the state" (Savini, 2016: 1153). Gonzáles and Oosterlynck (2014) see self-organised practices as tactical, open-source, and alternative.

There is therefore an important subset of digital platforms that open up a debate about the ways in which such technologies might offer complementary welfare solutions and engage citizens in the allocation of goods and services at an urban scale. These welfare solutions vary widely, from childcare to the reinvigoration of solidarity and mutual support networks such as food swaps or time banks. The goods and services exchanged within the digital platform may be tangible or intangible, such as knowledge or cryptocurrency to be used within a community, self-organised initiatives, and grassroots practices (Marres, 2017). The self-organisation of socio-spatialised practices is understood here to describe a wide variety of governance arrangements where private actors autonomously pursue public or collective objectives, providing an alternative to both the market and the government in the allocation of goods and services in the city (Nash et al., 2017).

In order to distinguish Commonfare from better-known platforms, it is necessary to observe some of its specific features. These pertain to its horizontal internal structure (involving access, openness, participation, and the representation of its users); its conception of data and information as common goods (through the disintermediation of information); and its potential as a means for redistributing goods and services within a city (strengthening social reproduction through the provision of complementary welfare measures). A previous attempt to differentiate digital platforms that function according to solidaristic principles and offer social protection to precarious workers gave rise to the term coined by Trebor Scholz (Scholz, 2016) "platform cooperativism."

Platform cooperativism and UDPs

The definition of a UDP resonates with earlier debates around "commons-based peer production" (Benkler, 2006) and Scholz's notion of "platform cooperativism" (Scholz, 2016). Whilst the former is related to the design of UDPs, namely the production of tangible and intangible commons and their reappropriation through P2P transactions, the latter resembles the cooperative business model, which is not corporate and is characterised by open accessibility, mutualism, and internal democratic control for users. According to Scholz (2018) all platform cooperatives are bottom-up and self-organised business networks; in other words, ownership and governance are shared between users and value production follows an alternative route, with revenues reinvested in the platform and distributed amongst members just as in traditional cooperative models. Yet, little knowledge and scarcely any empirical evidence exist about digital platforms when one restricts the focus to those non-profit platforms that function as urban arenas of public participation, or as alternative or complementary modes of welfare provision within local communities.

Platform cooperativism refers to an entire ecosystem of organisational models diametrically opposed to "platform capitalism" (Snricek, 2017), those large, for-profit enterprises that thrive by controlling and exploiting networks and peer exchanges. There are several examples of platform cooperatives, such as Fairbnb.coop and GreenTaxi. coop, the latter also serving as a trade union for its workers. It should be noted that these are examples that function at a global scale and do not directly involve citizens, but rather operate as platforms owned by a group of people (i.e. the membership and salaried workers), applying conventional cooperative principles. The main difference between platform cooperatives and UDPs is the type of actor involved and the degree of direct engagement with urban space. Drivers and hosts do not necessarily live where they provide their service, nor are they necessarily connected with new spatialities and the realisation of local initiatives. Those who participate in activities such as civic crowd-funding, meanwhile, tend to be citizens directly engaged in the provision of bottom-up goods and services, and are often involved in the development of certain urban spaces. Another distinct feature of UDPs is that they are non-profit, hence their disintermedia-

tion of both information (with data no longer conceived as a commodity but as a common good) and state and market, and their capacity to redistribute goods and services at an urban scale (such as complementary welfare provision). It is true that the state and the market can also provide some services and goods, but only given certain conditions (in the case of the state) or certain financial means (in the case of the market) that many cannot afford (Polizzi and Bassoli, 2019).

Disintermediation and redistribution

Within the debate around "urban commons" (Foster and Iaione, 2016; Sassen, 2014), urban activists' experiment with spatial practices that simultaneously (re)claim the "right to the city" (Iveson, 2013), envision "post-capitalist urban commons" (Chatterton and Pusey, 2019), and posit "rebel cities" (Harvey, 2012). Behind these slogans, there is a desire for the ideal of a self-organised city, in which people are not directed by central authorities but cooperate voluntarily in communities and for the public good. This vision has empowered a range of initiatives, from urban gardening (Mattijssen et al., 2018) via technology hubs (Moisio and Rossi, 2019), to childcare facilities and makerspaces (Chiappini and Törnberg, 2018). These projects are explored to harness digital platform technology and enhance participative democracy, user-controlled data ownership, and the co-design of urban services. Crucially, they involve citizens in municipal decision-making and policy design (Lynch, 2020). A UDP's capacity to produce and redistribute goods and services for urban communities differs considerably from those platforms that are profit-oriented and global (Anselmi et al., 2021). Ultimately, the context in which such platforms operate may depend on the political discourses promoting the platform, the existing urban dynamics, any regulatory frameworks, governance arrangements, and the role of the local state.

According to Bria (2015), recent experiments in digital platforms oriented towards citizen participation prioritise the co-creation of knowledge about and solutions to a wide range of social issues at an urban scale. The existing academic literature has also analysed digital platforms and technologies as tools for citizen engagement and participation in government activity (Gullino et al., 2019). These experiments are often presented by policymakers and corporate actors alongside concepts such as collaborative/sharing economies, or as part of measures to "become" a smart city (Sadowski, 2020b). As a result, experiments that deploy digital platforms are expanding into urban realms, including transport and mobility, governance interfaces, resource allocation, and processes of decision-making. Policymaking in the field of digital platforms can be seen as part of a broader shift towards decentralised governance arrangements (Törnberg and Uitermark, 2020). Due to the fact that technical providers also come into play within the urban arena, as gatekeepers of information and data (Botto and Teli, 2017), citizen participation is all the more crucial to ensure a platform's vitality. On one hand, these platforms—hubs for meeting and coordination, disintermediated and leaderless, and

designed to solve collective problems–uphold the processes of social reproduction in which citizens are involved. On the other, in terms of the production of urban space, they may also reshape the city as a terrain ripe for the dissemination of self-organised practices and solidaristic projects to a broader segment of society.

The Commonfare project

Commonfare was set up in 2015 as a consortium of different partners: University of Trento (Italy), Basic Income Network (Italy), Centre for Peace Studies (Croatia), Bruno Kessler Foundation (Italy), Dyne.org (The Netherlands), Abertay University (United Kingdom), and Madeira Interactive Technologies Institute (Portugal). In 2017, the project received three million euros from the European Union through the Horizon 2020 programme[38], which was allocated equally between partners in the three pilot cities, Milan, Amsterdam, and Zagreb. The cities were chosen based on two criteria: their status as important metropolitan areas in their respective countries, and their different welfare regimes (Bassetti, 2019). Establishing the funding and selecting the local organisations was managed entirely by the consortium. A co-design approach to services and digital tools was adopted, and the consortium engaged with both existing and new local initiatives.

The composition of the actors involved included existing, public administrations, NGOs, and activists, who responded to the initial call by the Consortium in the three cities. One of the main partners in Commonfare is Dyne.org, a collective of hackers and software developers based in Amsterdam and responsible for the platform's digital tools (such as codes, technical support, data collection, social wallet). The platform was designed by Dyne.org to an entirely non-profit business model, in which value is produced by users sharing information, content, and stories with either tags or geographically localised initiatives and projects. Commonfare is a digital platform designed to provide complementary welfare services in the three pilot cities. Its main goals are as follows: to share stories about social collaboration in neighbourhoods and cities that respond to social needs and desires; to support the sharing of knowledge, goods, services, and skills; to develop a complementary currency to support financial networks whose goal is the autonomous and free implementation of cooperative welfare practices; and to collect and share information about public benefits and services[39].

The Commonfare model comprises four pillars, as outlined in their manifesto: unconditional basic income for communities provided by users (which means that the platform's users will pay the unconditional basic income of others within the Commonfare community); the management of common goods and commonwealth; the proposal of an alternative sharing economy; and the cryptocurrency[40]. On the digital platform one can offer and ask for help, resources, skills, and knowledge. These can be provided for free, direct trades, or exchanged for the cryptocurrency CommonCoin. On the website, one reads: "Commonfare is a place to strengthen the common good, rather than a market-

place dedicated to financial transactions." Commonfare is, therefore, a bottom-up platform that supports collective actions and local initiatives, oriented to fulfilling social functions in urban communities. Those initiatives meet basic criteria to ascertain their public benefit, in terms of the redistribution of information, knowledge, goods, and services. For instance, Commonfare aggregates and provides useful information about available public benefits and welfare state provisions, such as how to apply for preschool benefits or housing allowances.

The content is entirely user-based, with users able to share stories about social collaboration in neighbourhoods and cities, and the platform supports the sharing of information about public benefits, services, knowledge, goods, and skills. Its main digital tool is the cryptocurrency system CommonCoin, which supports a financial network that strives toward autonomy and the implementation of cooperative welfare practices. The platform is open and accessible, requiring only a simple log-in, and its ultimate goal is to map the practices of collectives, such as mutual care and solidarity, which respond to local needs and lie outside of the arena of institutional politics. Commonfare's main value is its self-organising capacity, in which individual citizens are invited to participate in the production of goods and services–in domains such as care, education, social security, and assistance–that the market and the state no longer provide[41].

Analysis

Commonfare's goal is to facilitate social reproduction at an urban scale: as a self-organised and bottom-up service, it promotes information about social provision and benefits beyond the state and the market in what is a potentially significant act of disintermediation. The analytical approach of this paper aims to explore the extent to which Commonfare, as a UDP, is in fact successful at disintermediating and redistributing at an urban scale. In order to accommodate the empirical material and different pulls of the data, the analytical dimensions have been grouped as follows:

a) discourse and allocation: the capacity to produce and redistribute goods and services for urban communities;

b) governance: the level of accessibility, openness, mutualism, and internal democratic control for users;

c) urban actors and spatialities: the number of users and kinds of actor involved, representation, and location of allocated projects.

The first rubric focuses on an individual's capacity to participate in the public arena to protect specific interests and respond to social needs, disintermediating state apparatus and market in the provision and allocation of goods and services. In particular, it entails sharing information and knowledge, namely the content produced by users via stories, and other digital tools such as cryptocurrency. These tools contribute to the process of disintermediation, the capacity to redistribute goods and services that the market and state are no longer able to provide. The second refers to accessibility, which

also affects access to urban space, and is measured in terms of co-creating knowledge, citizen engagement, and the more or less communal production of goods and services. The third pertains to the spatial outcomes of UDPs; the kinds of obstacles and limitations to social reproduction that actors face, and how they act together to shape spatialities in the city. These three dimensions are crucial to determining Commonfare's capacity of disintermediation, as well as the platform's specific features in relation to existing urban configurations that separate it from others.

a) Discourse; sharing stories and visibility on social media!

Commonfare is imbued with a principle of redistributing goods and services, and rooted in efforts to reappropriate the commons, social innovation, solidarity, and mutual help for more solidaristic ends (Fumagalli and Lucarelli 2015). The two primary tools used to pursue this are a) the sharing of stories and information about welfare benefits and allowances in the three cities, and b) the use of cryptocurrency to allow communities a basic income. The digital ethnography shows that stories on Commonfare are very heterogeneous, and may be about a user who wants to share a service or is in search of skills to exchange. Examples of such might include babysitting, yoga lessons, English language revision, expert 3D printing workshops, or gender and technology discussions on coding. These services can be exchanged for free, or paid for with CommonCoin. Within the platform, practices of exchange may refer to ethical purchasing groups, free software communities, co-housing groups, revitalising old buildings, FabLabs, co-working spaces, time banks, urban vegetable gardens, community-based self-organised gyms, mutual aid practices, and networks of artists and freelancers. CommonCoin can also be exchanged for these activities[42].

The platform's bottom-up character is due to its promotion of stories and inter-user collaboration for sharing resources such as goods, knowledge, or skills. This can happen either through the exchange of content and information about welfare measures, or through a real exchange of services or goods between users[43]. 'Stories' are promoted according to a belief that rhetoric and discourse are also a fundamental part of social change and social innovation (cf. Figs. 9; 10; 11; 12).
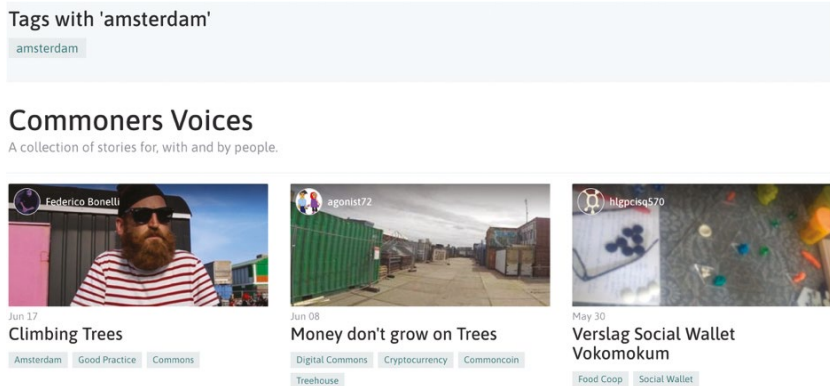
Figure 9. Example of 'stories' in Amsterdam (based on the platform website).
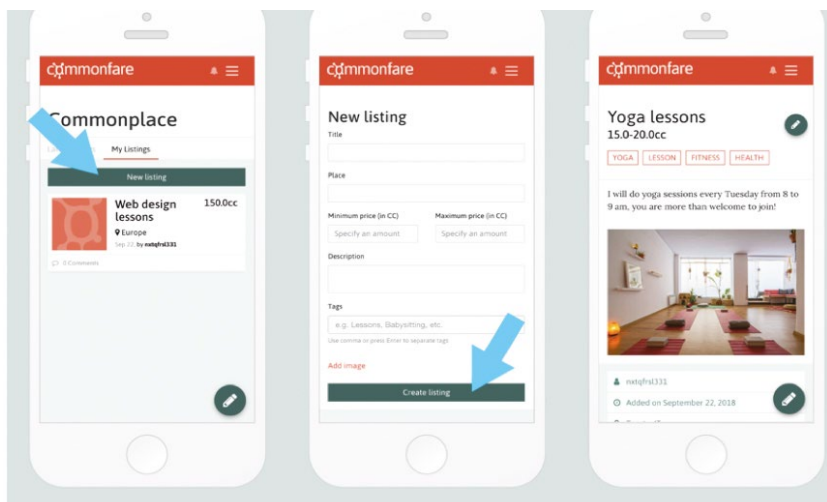
Figure 10. Practices of exchange of CommonCoins, tutorial on listing 'stories' (based on the platform website).

Figure 11. Practices of exchange of CommonCoins on Commonfare platform. (based on the platform website).

The digital ethnography material above shows examples of the dashboard and display a service's whereabouts, the provider, and the amount of cryptocurrency required for the service.

> "The visualisation of contents is relatively user-friendly. I am a commoner-voice, like a story-teller. I use hashtags in stories for other commoners."
> (Interviewee #22)

The second most important digital tool is the CommonCoin and wallet, which is where users can store digital tokens. It works as a digital interface and allows forms of exchange between members of the community. As one of the software developers described:

> "A wallet is a common place to store value, which is shared and accessible for a number of people. This can, for instance, be a group or collective that have the same interests or work on the same project."
> (Interviewee #46)
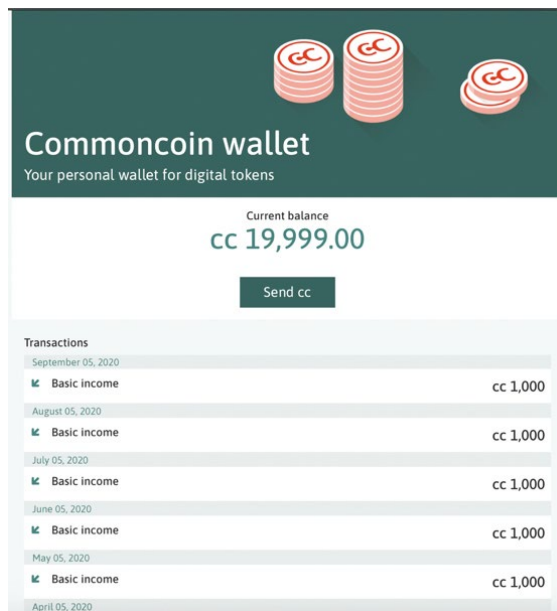
Figure 12. CommonCoin wallet and basic income amongst users (based on the platform website).

The cryptocurrency allows local communities to provide incentives for artists, such as a basic income, build up projects autonomously, and sustain their cultural events. When Dyne.org started to create the digital tools, at the beginning of the project, it was not clear how and where the cryptocurrency and the wallet could be used in the three selected cities, that is, which goods and services would be available to citizens and users.

Three years later, the tools can be used effectively, and it is clear that they have been used most by two artist/activist communities already embedded in their respective cities and that also took part in co-designing the digital tools in the implementation phase: Macao in Milan and NDSM Treehouse in Amsterdam.

For instance, in Macao, the community has its own self-organised basic income (see Figure 12 above). They can then transform this from CommonCoin into euros through a monthly fund that they have established. As an autonomous organisation with a dedicated membership, they buy goods within the faircoop system, either using the digital token or euros:

> "There are projects and people who are the same, flexible enough. Every month, people engage with the space in a variety of functions, from ordinary maintenance to democratic participation in assemblies, and occasions for activism, such as demonstrations and networking with other movements. All these assets are remunerated in CommonCoin. Those who participate in all the activities in which productive capital is a feature have access to a basic income in euros. We built a fund, with a 20 percent withholding tax on each project." (Interviewee #31)

Moreover, the project is strongly promoted by the local government of Milan and by public figures within the urban governance of Amsterdam. In Milan, the municipality was heavily involved in promoting the project's website. In addition to this, the head of economic affairs in the municipality of Milan has been particularly active (both personally and through a think-tank that she manages) in promoting and sponsoring Commonfare on social media and in public speeches. In Amsterdam the local authorities were not visibly and explicitly involved, although Waag and one of its founders, Marleen Stikker, were the most prominent and best-known figures involved in Commonfare there. Waag is, indeed, a well-known arts, science, and technology organisation, involving citizens and policymakers in decisions about the city of Amsterdam. As Table 13 shows, the role of the local authority in Amsterdam and Milan diverges in terms of promoting the platform and visibility.

Social Media Platforms & Websites	Accounts & Users	#Mentions and Tweets	Followers
Commonfare – Website	/	/	/
NDSM Treehouse Amsterdam – Website	/	/	/
Macao Milano Website	/	/	/
Twitter	Waag	4	18,6K
Twitter	Marleenstikker @marleenstikker	16	12,5K
Twitter	CommonerBeta @BetaCommoner	/	57
Facebook	Cristina Tajani (public profile)	13	6770
Facebook	Milano Innovare per Includere (private group)	3	1390

Table 13. Digital ethnography of social media platforms and accounts (December 2016 to December 2019. Table updated in August 2020). Source. Author.

b) Governance: Disintermediation and Information on Welfare Measures

The initial purpose of the platform was to have a governance arrangement characterised by a decentralised network to disintermediate market and state in local welfare provision, relying entirely on the exchange of immaterial and material resources between users in a P2P model. Commonfare does not depend on tech multinationals for its digital infrastructure and domain. All users become a member of Commonfare and are the actual owners of data produced on the platform. To evaluate the accessibility of the platform, it is important to consider how open access is, or in other words, what data is required to have an account and be eligible to receive services relating to welfare provision

and exchange goods. The platform is built on a discourse of disintermediated welfare, as information and data are created and shared by users. The content and information shared on the platform are considered common goods. From the empirical material collected as part of the digital ethnography, it appears that there are no admins, with every user entitled to share posts and stories, and what is more, pieces of information are not prioritised or hierarchically ordered via algorithms.

> This model differs from the capitalist one based on exploitation and accumulation, as it embeds tools of participatory welfare based on solidarity and practices of care within people and communities. [it is] a digital platform and a complementary currency–CommonCoin– with the aim of fostering the networking of people, and supporting initiatives of alternative welfare."
> (Interviewee #23)

Besides the technical design of the platform, the governance arrangement shows a process characterised by a high degree of democratisation: issues of access and the agency of Commonfare are shared and discussed between the community, with data conceived as common rather than sold to third parties. As expressed in the manifesto (2018: 134): "by common goods we mean the governance of tangible and intangible goods which are the basis of human existence and survival."

> "We have created our own infrastructure; we are not talking about big data extraction or mining. This is key because the tech giants, via data and algorithms, affect our society. And the grounds on which these algorithms are designed is too ethically flawed to be treated a-critically."
> (Interviewee #48)

In line with the platform's openness, based as it is on democratic values and horizontal relations, the discourses and values voiced on the platform are also quite homogeneous. These quotes indicate the ideological and political values of Commonfare's users, who clearly share a strong commitment to protecting the artist communities facing eviction in Milan and Amsterdam.

c) Urban actors and spatialities: Initiatives for all users but benefits for a few!

Commonfare was initiated by activists, hackers, and a constellation of academics able to mobilise a network and find the resources to implement the platform in Milan and Amsterdam. Operating within the context of technology and media activism, Dyne.org is one of the primary actors to have participated in and animated the Commonfare platform. The empirical analysis reveals a high degree of homophily in user composition (i.e. age, education, involvement in activism for digital rights). Moreover, similarities in terms of values and intentions can also be found between the two artist communities that have participated in the project. It can then be argued that the level of required media literacy

is high, therefore limiting the practical application of the platform and its digital tools for regular users. Finally, the project's strong values of disintermediation, welfare as a common, the bottom-up structure, and so on, are an important factor in users' (self-) selection. Indeed, one of the interviewees claims that those who responded to the call were to some extent already part of networks around Dyne.org and the educational institutions that won the Horizon2020 grant, namely those involved in the consortium.

> "Our target audience was citizens and workers that are excluded and precarious. At the very beginning, we tried to create a critical mass around Commonfare. In 2017 a Gmail group called 'Precarious work costs us too much!' was created."
> (Interviewee #47)

Considering the project's trajectory up to June 18th, 2019, the digital community represents around 5,662 users, opening 9,153 sessions and viewing 15,959 pages with a 69,52 percent bounce rate. The community is composed mainly of millennials and gen X individuals, often with an educational background in science and technology. However, sharing stories and using CommonCoin are not necessarily immediate, but require digital knowledge and skills comparable to a savvy se of a social media platform such as Twitter or Facebook. Based on the observations, it appears that those most active on the platform are artists, activists, and members of organised networks or non-profit organisations who have been involved in designing the platform since the beginning. Individual citizens, meanwhile, were poorly represented on the platform.

As the work of feminist geographers reminds us, it is crucial to observe the spatial component in production and social reproduction. As the two maps below demonstrate, Commonfare–like all UDPs–has a significant spatial outcome within the two cities, which has further established and reinforced the presence in the urban space of two existing and well-known artist communities: Macao in Milan and NDSM Treehouse in Amsterdam. Both venues are organised following a cooperative model (d'Ovidio and Cossu, 2018), and currently use the cryptocurrency and wallet for internal activities with a specific codebase adjusted for them. As one of the founders of Macao laid out:

> "As a self-organised community, the collective has chosen the digital tools for internal transparency, to exchange CommonCoins when we organise cultural events, and to distribute a basic income every month through the CommonCoin. […] We also gain extra coins when we take care of public spaces around Macao."
> (Interviewee #32)

As described above, Macao and NDSM Treehouse have, through Dyne.org, been involved in the project since the beginning. They have participated as main partners, and their projects have been financially supported both through the Horizon 2020 funds and by users of the platform. Furthermore, the communities of the two venues have been gaining visibility through public events organised in the two cities. During these

events, stories of welfare provision via Commonfare were celebrated as best practices for offering a form of social protection to vulnerable segments of society.

A final point can be made, showing how Commonfare relates to urban space. Indeed, policymakers at different levels in Milan and Amsterdam are involved in supporting the platform either explicitly (in Milan) or implicitly (in Amsterdam). Remarkably, during an interview, a policymaker claimed:

> "Digital communities need face-to-face relationships in order to build trust. The social wallet and Culto CommonCoin are digital tools that have a direct outcome in everyday activities. NDSM is a place in the city in which you can experiment with new digital solutions." (Interviewee #60)

Map 6. Location of Macao, Milan. **Source.** Author.

Maps 6 and 7 show the location of the venues that have benefitted the most from Commonfare, two well-known artist communities involved since Commonfare's beginning in the decision-making process. The two communities have also proved the most active on the platform in the promotion of discourses about sharing and collaboration, as well as the use of cryptocurrency. The consortium, in which Dyne.org was the most prominent force in terms of providing the digital tools and their relational capital, was the one that engaged Macao and NDSM Treehouse. The constellation of these actors was critical in shaping the platform's homogeneous culture in terms of its discourses, practices, activities, and the final allocation of resources.
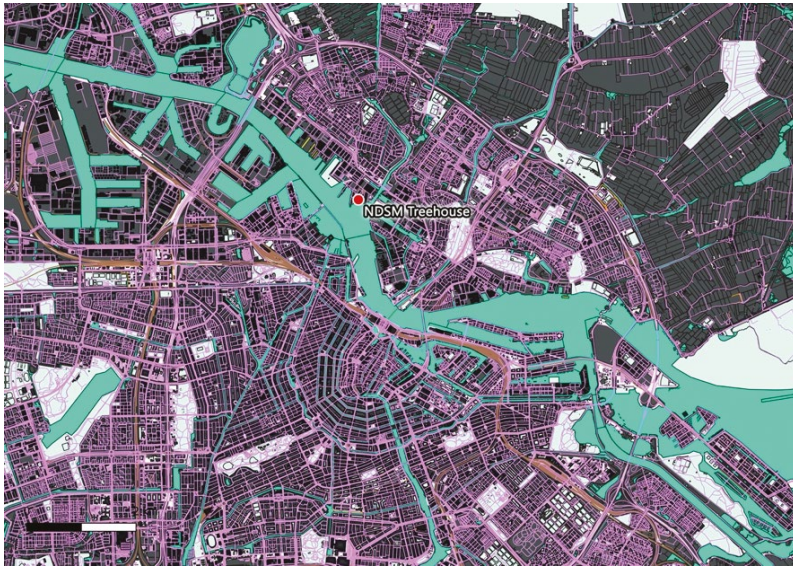
Map 7. Location of NDSM Treehouse, Amsterdam. **Source.** Author.

Discussion and Conclusions

Commonfare offers an illustrative example when it comes to empirically testing the concept of UDPs further. For three years, the Commonfare project has been set on promoting a digital platform as an alternative and sustainable socio-economic model, capable of meeting the needs of vulnerable social groups with little or no access to information about public benefits and welfare. Today, Commonfare has emerged as an impressive container of different stories and a site of "good practice" to be replicable in other contexts. The settings of Milan and Amsterdam have been essential in offering a range of mundane activities, a real-world social fabric, and a political milieu in which to transform digital incentives into physical outcomes, as they are both socially and physically dense urban areas with a significant proportion of creative workers, freelancers, and cultural capital (d'Ovidio, 2018; Kloosterman, 2018). As concerns the digital layer of the platform, networks appear accessible, open, and self-organised, although their capacity to produce and redistribute goods and services for a larger segment of society is debatable.

On one hand, the capacity to produce and redistribute goods and services for urban communities depends to a great extent on users' media literacy, their ability to navigate the platform, share stories, and use CommonCoin and the social wallet. On the other hand, despite a required minimum of media literacy, the homogeneity of users, content, values, and political and ideological views shared on the platform demonstrate a high degree of homophily which makes the Commonfare project ineffective for a broader segment of society. This is due to two interconnected factors: 1) The ethical motivations underlying the project, which are very pronounced and seem to produce a sort of ideological adhe-

sion within the communities involved; 2) The fact that the project is physically situated in two cities with well-defined networks in each. More than ten participatory observations revealed that the same groups were attending such events (members of Macao, Dyne.org, and NDSM Treehouse), which might indicate a closed and restricted network of actors with a large stock of social and relational capital even outside of the platform. More broadly speaking, the rise of UDPs such as Commonfare reveals a growing awareness of the unsustainability of current forms of capitalism via global digital platforms, in favour of more equitable, alternative economies (Gibson-Graham, 2014). In both cities, the ideological, political, and ethical motives behind Commonfare are oriented to ideas of a digital right to the city, as exists in discussions around urban commons. Commonfare supplements a critique of techno-optimism with principles of solidarity and mutual aid, and is inscribed in wider efforts to revive public participation and community-building.

Finally, the growth in mutualistic initiatives can be read as a response to the decline in welfare measures at the urban scale, plus urban communities' desire to participate in society. This fits the thinking behind socially innovative practices and forms of participatory society which, in cities such as Amsterdam (Savini, 2017) and Milan, see citizens identify resources that could be redistributed as common goods among their communities (Vicari and Mulaert, 2009). These resources may include information, knowledge, or involve the reappropriation of primary public goods and the reclaiming of urban spaces for local communities. However, as far as Commonfare is concerned, the platform's capacity to effectively support mutualism and empower vulnerable social groups is disputable. Indeed, Commonfare appears to be particularly ineffective at reaching marginalised, excluded, or vulnerable individuals who either struggle to connect to the platform or do not necessarily hold the same values as the communities already dominant there.

While, the platform does play an important role in disseminating a narrative of alternative, bottom-up, community-based welfare actions. Notwithstanding the relative homogeneity of its users, Commonfare manages to attract those interested in discourses related to welfare provision, the importance of narrative and, although to a lesser extent, to reach people who would not otherwise hear those stories. Since a large part of the sharing experience is to tell stories and inform others about existing welfare services (mainly but not only public services), the platform also plays an important function in helping people to approach welfare measures, as well as even promoting advocacy to make citizens' rights more visible.

Also important, of course, is the location of those projects and how they relate to existing urban spatialities. This also reflects where and how resources have been allocated: Macao in Milan and NDSM Treehouse in Amsterdam, as we have seen. Macao is located in the outskirts of Milan to the southeast, in an area that lies outside of the municipality's broader urban regeneration plan (see Map 6). Likewise, NDSM is a neighbourhood in Amsterdam, located on the grounds of what was once the Nederlandsche Dok en Scheepsbouw Maatschappij (NDSM) shipbuilding company. Amsterdam Noord

is a hip and cool neighbourhood characterised by an active community of artists and a vibrant clubbing scene (see Map 7). This type of spatiality is the product of both content shared on online platforms and existing networks of like-minded actors, all contributing to a co-creation of place in physical space on an urban scale.

By way of conclusion, Commonfare and other UDPs cannot be the only tools available when it comes to a community's capacity for self-organisation in the development of complementary welfare solutions. A question that remains to be answered is how these platforms can prevent the precarity and expulsions perpetrated by platform capitalism. There are, however, phenomena that seem to offer promising options when it comes to reviving social ties and creating a more inclusive society, most notably decentralised networks and P2P exchange. These may prove transformative in an era in which the uni-corns of the sharing economy can no longer be tamed, our data is hoovered up and sold to third parties, and our digital futures and urban space remain contested.

Notes

*   Chiappini L. (2022) Commonfare as Urban Digital Platform: 'Stories' from Milan and Amsterdam. *City, Culture and Society*.

34. The term "Platform Urbanism" has extended beyond the public debate, and was the central theme of the 2021 Venice Architecture Biennale.

35. See the link to the website: https://commonfare.net

36. The author has been an observer of the project Commonfare; there is no relationship with the larger European Horizon 2020 funding programme in which Commonfare is embedded.

37. All the interviews were conducted between 2017 and 2019, and were mostly in English, except when talking to Italian organisations and actors. For those interviews the transcripts are in Italian. The quotes reported in this paper have been translated by the author. 'Sic!' may occur due to the recording and consequent translation from the original Italian transcripts.

38. The PIE News / Commonfare project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 687922. Duration 1st July 2016 – 30th June 2019 (36 months). See Commonfare's official first delivery report.

39. See Commonfare website: https://commonfare.net/en/pages/about .

40. See also https://networkcultures.org/wp-content/uploads/2018/01/MONEYLABREADER2OVERCOMINGTHEHYPE.pdf for the complete version of the manifesto.

41. For instance, in the Netherlands they use *broodfonds*, a collective that allows independent entrepreneurs to provide each other with temporary sick leave. The recommended minimum is 25 people; the maximum is 50.

42. For example see the online tutorial: https://commonfare.net/en/stories/commonplace-tutorial?fbclid=IwAR3KkbTQeAVlNLHV6Kzf NflwuWoS98fHrouPG6MSusWuEwVk7X5CiazWphk (accessed October 2020).

43. Every user receives a digital incentive of 1000 CommonCoins, which can be spent as "welfare cards" on the stories that have welfare provision as a tag (cf. tags: "misure di welfare," "socijalna zaštita," "sociale voorziening"). CommonCoins and tokens in general are automatically generated by the platform once a new user signs up and creates a profile. Tokens can be cryptographically generated once numbers are stored on a database or blockchain and are algorithmically validated (Saurs and Bonelli, 2020; Cila et al., 2020). Every month, each user receives a basic income of 1000 tokens to spend on the platform.

Conclusions

"Platforms reflect the counterculture demands of earlier generations:
eschewing big government and vertical corporate culture while
encouraging personal fulfilment and flat organizational structures.
Today you can be a coder and a DJ, an Uber driver and a travel blogger,
a Sand Hill Road suit and a Robot Heart Burner"
The Internet didn't kill counterculture You just won't find it on Instagram
Busta (2021)

This dissertation has sought to explore the key component of digital platforms and makerspaces in relation to broader urban transformation patterns. By looking at the mechanisms of these practices and the conditions in which they unfold, I have investigated who are actors, where these projects are located, as well as how they function and how are spatially articulated in cities and within existing urban communities. Through detailed examinations of a number of cases such as short-rent, makerspaces, citizens and public participation, and care provision and mutual help platforms. Moreover, the relevance of such enquiries is not limited solely to the academic world, for the practices examined here might have considerable implications for wider social issues such as participation, inclusion and exclusion, and the future development of our cities more broadly.

The public discourses that promote sharing economies, digital fabrication, makerspaces, and platforms generally celebrate the accompanying business opportunities and potential recovery of social ties through technology. At the same time as problematising digital platforms and the optimism of such promotional discourses, this research has found that in the observed cities of Milan and Amsterdam[44], local authorities champion digital technology as a tool with which to regenerate neighbourhoods, considering it to favour small-scale production and the allocation of goods and services at an urban scale. Civic crowdfunding initiatives and volunteering platforms, for example, have multiplied significantly over the course of the Covid-19 pandemic in both cities (Mos, 2020). However, these phenomena harbour a diversity of stories and projects that make the effect on urban society somewhat ambiguous and uneven in terms of urban development. On the one hand, there are those platform companies that claim to belong to and participate in the sharing economy, despite being designed to capture, process, and control increasing volumes of data (cf. chapters I and II). On the other, there is a subset of platforms and digital fabrication practices within makerspaces that aim to operate outside of purely commercial principles, and that uphold the values of sharing and solidarity as central to their activities (cf. chapters III, IV, V, VI).

The following sections are organised thus: first, I discuss the principal dynamics and mechanisms of digital platforms and makerspaces, as derived from a review of the literature, by linking them to the empirical results obtained during the fieldwork; secondly, I interrogate the main features of makerspace and digital platforms by asking if and what they are alternatives to; and thirdly, I explore the limitations of the research as well as future avenues for projects with a similar focus, concluding with a section on digital platforms and their discontents.

Dynamics and Mechanisms

The empirical results obtained from the research fieldwork has contributed to and expanded the concept of platform urbanism, as well as having implications for the ways in which we analyse "platformisation" as an economic, cultural, social, and political process (Poell et al., 2019). Moreover, the debate around contentious processes of "data-

fication" (Beraldo and Milan, 2019), and the move towards more emancipatory social and political goals, resonates with the transformative potential of civic initiatives conducted partly through digital platforms. Thus, the body of literature and academic work adopted here–from urban sociology, through digital geography, and to media studies– and the proposed definition of UDPs, allows the identification of key components which are related to issues of access (openness vs closure), internal gatekeeping and decision-making, and technological and participation biases (media literacy and representativeness of communities and users). In short, UDPs are both the toll used to explain dynamics as underlying processes, and the result of such explanation. The process of platformisation, therefore, underlines specific dynamics which could exacerbate inequalities and uneven patterns of spatiality (Ash et al., 2018). From the initial identified key components which characterised digital platforms, four rather different mechanisms emerged from empirical findings along the all chapters: (i) spatial embeddedness, digital mediation, and habitus; (ii) the black box of gatekeeping and decision-making; (iii) inclusion vs exclusion: digitally mediated inclusion and spatial exclusion; lastly, (iv) the uneven distribution of opportunities and challenges in relation to existing urban geographies.

I also argue that these mechanisms – intended as a process which generates other effects are interconnected and mutually inclusive, as they can co-exist and manifest to different degrees. They have been extracted using the theoretical framework, and by adding the empirical results obtained from the case studies in this research, I intend to complement and enrich certain features that might be overlooked in the existing literature.

i) Spatial Embeddedness, Digital Mediation, and Habitus

The online realm itself has always had a corresponding geographical reality (Graham, 2020). Hence, the development of platforms appears to be "a path-dependent process that is institutionally embedded in national and urban settings" (van Doorn et al., 2021: 740). The concept of spatial embeddedness describes how networks and local resources can become entangled and depend on certain spatial arrangements (Brandellero and Kloosterman, 2010) Although makerspaces and platforms appear open in terms of access – anyone can log-on to a civic crowdfunding site and support a project or create a profile on Commonfare – the actual use of the services offered can be restricted according to location and related forms of spatial embeddedness. Also significant is the location of the projects themselves and how they relate to existing urban spatialities, which are already a reflection of how and where resources have been allocated. Examples of this dynamic explored here are Milan's Macao and Amsterdam's NDSM Treehouse (cf. chapter VI). Macao is located in the outskirts of Milan to the South East, where the Fondazione Prada is also to be found. The area is part of the Municipality of Milan's broader plans for urban regeneration. NDSM, meanwhile, is a neighbourhood in Amsterdam located on the grounds of the former Nederlandsche Dok en Scheepsbouw Maatschap-

pij (NDSM) shipbuilding company. Part of Amsterdam Noord is now a fashionable neighbourhood characterised by an active community of artists and a vibrant club scene. This type of spatiality is created both via related content shared on online platforms and by existing networks of like-minded actors who contribute to the collaborative creation of places in physical space at the urban level.

The results in this thesis show that at the digital interface of the platform, namely the user log-on, appear accessible, open, and self-organised in terms of digital content production (i.e. there are no external content mediators like on Facebook). Compared to traditional market-based on-site systems, both makerspaces and UPDs facilitate circulation of goods that follows a different logic than purchasing commodities, by establishing, consolidating, renewing and continuing relations. From a political economy perspective, there is a co-existence of diverse modes of production in all the analysed cases. However, their capacity to produce and redistribute goods and services for a larger segment of society is debatable. To study this dynamic, I looked at how users interact, and how those social relations are organised in terms of digital content. This took the form of commenting, posting, sharing stories and knowledge, and involved existing networks building communities on platforms around shared values, a process of course linked to the exclusion of certain social groups due to discrepancies in media literacy.

The starting point, which derives from debates around platform urbanism, is that digital technologies do not substitute city functions, but rather mediate social, physical, economic, and cultural relations (Törnberg and Uitermark, 2021). Digital platforms have changed what constitutes "the field," with the rise of digital content producing new forms of evidence with which to approach long-standing geographical concerns (Ash et al., 2015). My main findings strengthen the claim that spatial embeddedness is a significant factor, and includes direct interventions in space, such as the spatial articulation of projects or initiatives in existing geographies (cf. map 3; 4; 5). Economic mediations occur– as Chapter VI shows–either via cryptocurrency or non-monetary transactions, such as life skills training on Arduino or a different open software offered P2P on Commonfare. The empirical results of Chapter VI show a mediation of cultural aspects such as values, jargon, and beliefs.

In particular in chapter V and VI, the cultural aspects that resembles the theory of action built around the concept of habitus (Bourdieu, 1990; d'Ovidio, 2015; Ignatow and Robinson, 2017) are further addressed. The theory contends that social agents employ coping/adaptation strategies embedded in, and influenced by, the societal structures that they inhabit. These strategies can be discursive models, bodily logics, and can include forms of resistance and counteraction. As such, actors engage with every day practises within the platformisation process in a system of disposition. This disposition, in combination with an individual's coping/adaptation strategies, results in a system of beliefs, values, and forms of action that Bourdieu defines as a habitus. Bourdieu's conception of the habitus is useful to interpret individual or collective actions within a group and their

propensity for sharing knowledge and values given their belonging to certain communities. As in the case of Commonfare, the two main local communities–artists and activists–share the same set of values, and these are mediated both online via the posting of digital content, and offline during events. Empirical data drawn from in-depth interviews and digital ethnography indicate that their discourses and narrative are crucial to be included in the platform and benefit from it, as well as to maintain and sustained their internal relationships. The values of these particular groups, for example, have to do with digital currency and the relationship to data ethics (cf. chapter III and VI).

Commonfare's ideological, political, and ethical motives are oriented to ideas of digital rights to the city, and are positioned within conversations around urban commons. Theirs is a critique of techno-optimism supplemented with the principles of solidarity and mutual aid, aimed towards the same revival of public participation and community-building in which Commonfare is inscribed.

ii) The Black Box of Gatekeeping and Decision-Making

Research in media studies has emphasised that, within the governance arrangements of digital platforms, there is often a conflict between private interests and the maintenance of public values at a societal level (van Dijck et al., 2018). Digital platforms partially displace decision-making from the governmental realm to the societal (Lynch, 2020). However, Mazzucato (2011) also points out that governments operating at the level of local authorities can be innovative and promote initiatives on a lower budget to address complex urban policy problems such as accountability, participation, spatial polarisation, and social exclusion. Certain cities have deployed these tools as a way of redistributing goods and services that the market and the state are no longer able to provide, thereby directly engaging citizens in the production of space (Datta and Odendall, 2019). In chapters III, IV, and V, the role of the Municipality of Milan resembles attempts to be innovative and promote sharing economies as a means to make the urban economy flourish.

> "The administration has seen the sharing economy and platforms
> such as Airbnb as a means to facilitate new social relationships, as
> well as stimulate our urban economy."
> (Interviewee #20)

Airbnb has been promoted in Milan as a key player to stimulate urban economies (cf. chapters I and II), whilst in Amsterdam it was completely banned in the canal belt area in 2020 (Gemeente Amsterdam, 2021). This goes to show that the process of platformisation is neither monolithically nor homogeneously adopted in cities, and that a platform's regulatory framework will vary significantly depending on the city and the urban government.

Thus, experiments and pilot phases involving new forms of co-production have been trialled by local governments, which shift from the role of regulator to enabler as

a "partner state" (Bauwens and Ramos, 2018). Common to most urban governance arrangements is the shape that the public-private-civil partnership takes. Partnership therefore becomes a strategic device, and a heterogeneous boundary resource, allowing platforms to generate "dependencies, become embedded, and gain power in other [public and private] domains" (Helmond, 2015). It is then assumed, however, that powerful interest groups, through their ownership and manipulation of data, will be able to influence political, financial, and policy decisions (Coletta, 2018). Such interest groups may be technical experts or platform providers.

The local state can also become a partner in the case of UDPs, supporting grassroots activities and citizen-based initiatives. These partnerships are based on weak ties and soften the boundaries of conventional dichotomies such as private/public and top-down/bottom-up. These partnerships are the product of often tense negotiations over regulation, in which decision-making processes often lack transparency and questions about gatekeeping arise (cf. chapter VI). As was indicated in chapter V on civic crowdfunding campaigns in Milan and Amsterdam, it remains largely a black box.

For instance, the results of the digital ethnography on Twitter show that public figures have been promoting discussions and practices to do with sharing economies. Social media can therefore be used as a complementary source of interesting and insightful findings. This qualitative approach (cf. chapters III, IV, V, VI) has been combined with computational techniques such as scraping data from the InsideAirbnb database (cf. chapters I and II).

In the two cases analysed, civic crowdfunding and makerspaces still requires the intervention of the local state apparatus, insofar as it is often involved as a regulator or co-founder in the development of local projects within the two cities' metropolitan areas (cf. chapter III and V). Since its arrival in Milan, the civic crowdfunding platform has been promoted directly by the local government as a strategy for complementing the distribution of social goods in the city. In Amsterdam, it was seen to promote social entrepreneurship and community-building activities.

Whilst the case of civic crowdfunding makes evident the shifting role of the state and its attempts to be innovative in both cities, what remains unclear is the process by which certain projects are selected over others, and how a project becomes eligible for promotion on the platform. Indeed, local governments' decision-making and gatekeeping processes often lack clarity, with something of a black box policy on how and by whom decisions are reached. Discourses around civic crowdfunding and Commonfare, meanwhile, are often oriented to making the city more accessible (cf. chapter V; VI), with special attention paid to the most vulnerable and marginalised in society, technological innovations to support urban connectivity, innovative information systems to improve mobility, culture, and quality of life, innovations in care services and the work-life balance, and territorial resources for residents (Pais and Provasi, 2020).

The findings in this thesis corroborate those of the literature, which indicate that in

order for a project to be successful, not only is it necessary to shape a project according to the thematic categories proposed (that is, it is not enough for a project to fit the dimensions and requirements of the platforms), but that a solid network and a certain set of skills (i.e. blogging, digital marketing) are also essential (cf. chapter V; VI). An example (cf. chapter V) of this is the ability to make short video clips, as did one of the winning projects of the first edition of the civic crowdfunding program Medicinema in Milan, for which Giuseppe Tornatore, a famous Italian director, made the video. In Amsterdam, the platform Voor je Buurt recommends "Don't take pictures on a rainy day!" to increase a project's chances of receiving financial support on the civic crowdfunding platform. Another example is the cryptocurrency of Commonfare which requires the knowledge of the Application Programming Interface (API), by enabling applications to exchange data or resources and functionality securely. Therefore, not all the users were able to use the token and exchange services via the platform (cf. chapter VI).

The research indicates that initiatives promoted through UDPs need to be "platform-genic" similar to an Instagram post, story, or reel, with enticing pictures, accurate captions, and catchy hashtags. Such strategic advice confirms that technology can, when combined with decision-making principles, frame problems of collective action positively and effectively. By grasping internal mechanisms and how networking dynamics operate in realising local initiatives, my research outcomes have demonstrated that offline and online activities are mutually essential in a project's development.

iii) Inclusion vs Exclusion. Digitally Mediated Inclusion and Spatial Exclusion

The aforementioned skills and media literacy needed to promote civic crowdfunding campaigns, or exchange cryptocurrency for an online yoga class on Commonfare, for example, are also the reason why certain social groups and communities are included as opposed to others (cf. chapter VI). Digital platforms are a space for social interactions, hosting the user-generated content that has become a standard feature of new technologies in which "digital" and "social" are synonymous (Marres, 2017). Social interaction happens both on the platform through online activities, such as posting or sharing stories, and at offline events in which users gather to exchange goods or services. These goods and services may vary, from new street markets and revamped playgrounds to planting trees along derelict railway lines, for example (Gullino et al., 2019). Such activities are visible in civic crowdfunding initiatives and on Commonfare (cf. chapters V and VI). The findings indicate that makers and local artists are often involved in civic crowdfunding campaigns as initiators of workshops and urban community projects, such as for instance WeMake, a makerspace in Milan, which is also one of the most active profiles on Commonfare in terms of advertising their activities and projects.

Like the habitus of the platform users, the key issue here is that these communities are composed of like-minded people: the majority of civic crowdfunding campaigners are quite similar in terms of age group, educational background, and professional

profile. Commonfare was set up by activists, hackers, and a constellation of academics able to mobilise a network and find the resources needed to establish the platform in Milan and Amsterdam. Operating within the contexts of technology and media activism, Dyne.org and Waag in Amsterdam are the most significant actors to have participated in and animated the Commonfare platform in both cities. From the empirical analysis in chapters V and VI, a high degree of homophily in user composition (in terms of age, education, digital rights activism) is evident; moreover, similar values and intentions can also be found between the two artist communities that participated in the project. There is a form of digitally mediated inclusion, due to the fact that those platforms are open in terms of access to the production of digital content for any type of users, but rather exclusive in terms of who can benefit from the allocation of goods in the urban space. For instance, Macao and NDSM Treehouse, along with the artists communities that gravitate around those spaces, are the only ones that have conspicuously benefitted compared to the other local organisations and single users active on Commonfare. The have received monetary founds to build up artists residences and launched events in those venues using the digital tools, such the cryptocurrency and the 'social wallet'.

Moreover, this inclusion of individuals and communities that share the same set of values is necessarily accompanied, however, by a form of exclusion, affecting the most vulnerable segments of society and producing participation biases in terms of access and the representation of users and spaces. Despite a degree of digitally mediated inclusion, which makes the platforms appear open, only a limited number of actors can become central to the building of a narrative, by endorsing the values of open-source communities and commons-based peer production, and translating these values into the spatial exclusion of communities who do not share the same habitus. This last process plays an important role in the organisation of Western societies, where public values such as privacy, accessibility, democratic control, and accountability are considered in relation to the development of platforms. In fact, the findings align with what Mariotti (et al., 2017) has described, namely that confidence in digital platform use does not appear to correlate directly with a more mature and critical approach towards the role of such interfaces at either the individual or the collective level. What these dynamics and the related arguments do show is that digital platforms may generate an uneven spatial distribution of goods and services which potentially will deeply affect the existing urban geography of our cities. As the next paragraph explains, these dynamics lead to an uneven distribution of goods and services due to the fact that a high media literacy degree is required. Furthermore, the lack of transparency in the decision-making contributes to exclusive dynamics rather than inclusive for a broader segment of society (cf. chapter V, VI).

iv) Uneven Distribution of Opportunities and Challenges

An overarching theme discussed throughout this dissertation is uneven spatial distribution and the unequal allocation of goods and services. In chapters I and II, my

findings strengthen what Rossi and Wang (2020) have extensively detailed as a tendency to expand forms of small, individual business entrepreneurialism. His analysis has provided a useful tool with which to disentangle this dynamic. The main findings of my research indicate that these platforms are global in their service provision, corporate in their business model, and that their consequences favour capital concentration in cities (Anselmi and Vicari, 2020). From an urban political economy perspective, and particularly in relation to the housing sector, this kind of digital platform generates a "rich get richer" effect (Arundel and Ronald, 2021), hence the argument in chapter I that they be seen as a new form of footloose capital. Indeed, the analysis of discourses relating to Airbnb and user-produced digital content reveals that social stratification along ethnic, gender, and socio-economic lines is visible in the virtual spaces of a sharing economy. In short, Airbnb and like platforms produce spaces that are often sketched by capital rather than urban denizens. These platforms work under the incentive of extracting data as a form of capital (Sadowski, 2019). Chapter II makes quite evident how Airbnb exploits diversity in favour of white users who operate as hosts and guests in New York, and this resonates with path-dependency and the dynamics of spatial embeddedness.

> "We need to invest in new, open, fair, and inclusive forms of value creation and strategies to allow cities and communities to benefit from digital platforms, not be exploited by them."
> (Interviewee #40)

The recurrent finding is that UDPs are often focused on activating a specific urban community, and require certain skills only present in parts of the population. As such, they are more likely to emerge and thrive in certain neighbourhoods (those with a young, well-educated population), as opposed to deprived urban areas. This highlights a very problematic feature that is readily translatable into forms of participation bias within makerspaces and UDPs. Opportunities are therefore limited to those who can access the platform first and who share the same values, with these same actors ultimately benefitting from the allocation of resources deployed in the physical space. The type of spatiality created here is digitally mediated, created both via the content shared on online platforms and by existing networks of like-minded actors, and comes to contribute to the collaborative creation of places in physical space at the urban level.

The location of these UDPs and their projects in relation to existing urban patterns is also crucially important. In the case of Commonfare, this is reflected in where and how resources have been allocated, in Milan's Macao and Amsterdam's NDSM Treehouse. Maps (6; 7) show the location of these initiatives in the two cities. The relation with existing urban geographies is one of mediation: opportunities and constraints are spatially mediated through a location as it exists, as well as through the values of the communities that use and frequent it. In chapter III, looking at the geographical distribution of the makerspaces (Map 1) allows us to see whether makerspaces cluster in specific types of neighbourhoods. In the design district (Zona Tortona/Porta Genova) southeast

of Milan, we can clearly observe a small cluster of makerspaces and several coworking spaces located within the same area. Furthermore, we have collected data to complement the map with information about the kinds of buildings used to house these spaces. For instance, WeMake and OpenDot are located in former industrial areas that are now a residentialised part of the city, yet close to railroads and infrastructural nodes, which provide a high level of accessibility. When asked why they chose this location, one of the co-founders of WeMake motivated it with the low rents and the availability of spacious facilities. Unlike the two above-mentioned makerspaces, the new Digital Arts and Manufacturing Academy (D.A.M.A.) is located in the core of the city.

These empirical insights have expanded theoretical approaches to platform urbanism as well as current knowledge by highlighting discourses, digital media content, and practices in relation to their spatial articulation and the geographies of local communities. It tells a part of the story of how our cities have been transformed materially, culturally, and politically by a range of digital logics and socio-spatial practices. Moreover, it allows one to observe new facets in the ongoing transformation process: the participation of the user-contributor community in a platform's governance, the ways in which rules are drawn up, the hybridisation of resources (whether market-based, non-market-based, tokens, or digital currencies), the relationship to a given territory, the relationship to public action, resource sharing and the relationship to ownership, the factoring-in of different forms of work, and the mechanisms by which users and partnerships are involved in decision-making and organising activities both offline and online. However, there are issues related to the temporality of these initiatives and their capacity to thrive once the resources from the crowd or the platform have dried up.

Alternative to what?

The implication to be tentatively gleaned from the above is that, in contrast to extractive and exploitative capitalist forces such as Airbnb in the city, we may be witnessing a resignification of potential urban alternatives. The dynamics discussed here show that digital platforms not only unleash social initiatives but also have the potential to fundamentally change (urban) political processes, as their gatekeeping principles provide a powerful frame for the selection of projects. UDPs, and to a certain extent makerspaces, can provide alternative spaces for work, exchange, and encounters. The potential to be alternative does not have to do with numbers or a mere quantification of them. In 2021 the number of active UDPs in Milan was two (Commonfare and civic crowdfunding), and the number of makerspaces gravitate around seven shared working spaces. The number of people involved is not countable since every single project change in terms of organiser, users who has contributed to fund the projects, and so on. In Amsterdam, in 2021, there are two UDPs active (Commonfare and Voor je Buurt). Despite their discrete presence in urban contexts, makerspaces and the analysed UDPs are alternative model of urban economies and social relations which co-exist with the conventional ones.

The makerspaces in Milan offers work places under a monthly membership, while Macao and NDSM Treehouse both offer artist residencies, as well as alternative spaces for public life and events around their communities, such as a workshop on cryptocurrency or board games oriented to tokens and blockchain. In other words, they both have the potential to provide spaces for social mobilisation, that is, alternative processes for people to organise via the digital platform, enabling collective actions within patterns of spatial development and the allocation of goods and services via local initiatives.

With their own distinct axes of inclusion and exclusion, these local initiatives are based around the promotion of discourses by actors within like-minded communities, who have access to the platform and become central to the construction of a certain narrative around values of openness (including open-source movements and commons-based-peer-production) and techno-solutionism. The makers, artists, and activists involved in Commonfare, in particular, see the revamping of self-organising principles and the emergence of digital currency as both a novel model and a solution to our societal problems, claiming that such technologies and practices offer an alternative to the extractive and exploitative model of platforms such as Airbnb.

> "So, our alternative was to try to create a network of small producers who didn't want to change the system altogether, but who were trying to combine small-scale production with new values of self-management and trust within our communities."
>
> (Interviewee #11)

From the in-depth interviews reviewed in Chapter VI, the principal actors involved in Commonfare claimed that they sought to challenge the social and political status quo with their initiatives. Important works that look at digital civic initiatives and how alternative technologies empower citizens (cf. Taylor et al., 2014; Shelton, 2017) indicate that, rather than reinforcing corporate power and enshrining the value of technical expertise, they use data analysis and visualisation to promote critical and counter-hegemonic understandings of social and urban problems. However, as the case studies examined in this dissertation have shown, no project relating to digital civics initiatives and UDPs can be inclusive tout court; rather, the main actors (i.e. hackers, software developers, artists, and activists) show their particular political position that is pro-technology and pro-cryptocurrency, thereby contributing to emerging forms of "contentious datafication" (Beraldo and Milan, 2019). This contentiousness goes beyond calls for open data and digital sovereignty, and is seen as a means of heightening exclusion at an urban scale. On the contrary, a potentially valuable feature here is the flexibility of these technologies for different purposes, from urban gardening via Arduino to cryptocurrencies adapted to diverse communities and events, such as Culto-coin in the NDSM Treehouse in Amsterdam, or Commoncoin at Macao in Milan. But these conditions do not seem to favour the most vulnerable segments of society. Rather, they are oriented in such a way as to allow certain urban communities with a specific set of digital skills to take advantage of these opportunities and self-organise.

However, there will always be contradictions and tensions in scaling up these practices and in reshaping citizenship and participation, as well as an exacerbation of patterns of urban exclusion and inequality.

Limitations of the Research

As a first limitation, I refer to a methodological amendment. A risk to consider when using social media and data on user-produced content is the active role of the researcher, which can actively transform and recontextualise any data collected (Caliandro, 2017). For instance, Tweets or Facebook posts by a public profile, such as in the picture above, only reveal a façade, that is, how discourses are made public. It was necessary, therefore, to supplement this with additional and related data through interviews and observations, as this research has sought to do. The strategy was one of pinning down digital content from platforms and social media around a discrete data point: the individual units of accounts and users. Civic crowdfunding platforms, for instance, were observed by looking at the number of projects on the dashboard, users, comments, cross posting on other social media platforms, and features (such as donations or design). The data points are locations, images, captions, hashtags, and the "story" format.

Secondly, I deliberately forewent a detailed analysis of the role of the local state apparatus. I observed the role of key figures within the urban governance, in which public authorities result – to a certain extent – as part of the promotion of discourses and initiatives. The "Sharing City" slogan is part of a promotional discourse, but is also a normative term used by political actors to label their cities. Nevertheless, there is a body of literature concerning how urban activists experiment with spatial practices that (re) claim the right to the city (Iveson, 2013), prefigure post-capitalist urban commons (Chatterton and Pusey, 2019) and self-organise as "rebel cities" (Harvey, 2012). This thesis does not engage directly with these debates. Rather, the initial choice to distinguish a subset of different platforms prioritised an approach that does include commons, or visions of future cities.

To sum up, cities are used to showcase this dissertation's objects of study: Airbnb, makerspaces, and UDPs. It does not follow a rigorous comparative analysis between cities, however, instead aspiring to eschew positions where particular cases are seen as different expressions of a general process. This somewhat echoes Jennifer Robinson's (2016: 11) definition of a relational analysis in urban studies, prioritising the general, or what she calls "key processes"; those that are "constituted in relation to one another through power-laden practices in the multiple, interconnected arenas of everyday life." She goes on to say "that clarifying these connections and mutual processes of constitution – as well as slippages, openings, and contradictions – helps to generate new understandings of the possibilities for social change."

Future Avenues

As an advice, the empirical material presented here, when considered in the context of the dynamics that underline the ongoing process of platformisation, may be useful at a societal level to inform policymakers, practitioners, and citizens about the potentially transformative roles of a certain type of platform, as well as the possible consequences of its implementation. At the same time, it may prove helpful in ameliorating the transparency and accountability of decision-making processes, and in providing a foundation for the ethical deployment of digital technology in the urban realm.

Given that the rapid development of platforms and the all-pervasive process of platformisation remain relatively unpredictable, the task of proposing avenues for future research is a complex one. Nonetheless, questions within this burgeoning field pertaining to platform specificities and affordances may offer a rich field of study, particularly looking at the ways in which genuinely non-profit/communal platforms might be established in cities. In the above, I argued that Milanese makers, engaging in the provision of welfare through makerspaces and Commonfare, have seen that they are in a position to make a difference for other less privileged urban dwellers. However, forms of complementary welfare such as makerspaces and UDPs cannot be delegated exclusively to self-organising users. This echoes what Thomson (2021) has labelled "platform municipalism" and is worth acknowledging because it resembles the public-private-civic partnership seen in civic crowdfunding initiatives and subsidies for makerspaces.

An area that would reward further investigation are the attempts of "platform municipalism" to democratise digital platforms as part of a wider project of urban-economic democratisation. Issues remain, however, concerning the scalar geographies and spatialities of emerging municipalism, regionalisms, and the apparent reliance on centrality. Thomson (2021: 22) suggests that further research is also required into how technological sovereignty is advanced by municipal platforms, and how platform municipalism evolves in contestation to, and dialectical interplay with, platform capitalism. A question that still remains unanswered is how platform municipalism contends with the contradictions inherent to platform urbanism, "not least the paradoxical pull between the decentralisation of data production among platform users and its recentralisation in programme projections and articulations" Thomson (2021: 28).

Digital Platforms and their Discontents

One question still to be answered concerns how UDPs or makerspaces might contribute to minimising the precarity and exclusions that platform capitalism perpetrates. The decentralisation of networks and P2P exchange are, after all, promising principles for strengthening social ties and building a more inclusive society. Such projects could well prove transformative in an era in which sharing economy unicorns cannot be tamed, our data is hoovered up and sold to third parties, and the future of both digital and urban spaces looks set to be highly contested. To return to Gibson-Graham's work (2008)

on diverse economies, although makerspaces and UDPs seem to be part–at least symbolically–of important ongoing transformations, the revelation of contradictions within their functioning indicates that they are in fact going with the current, not against it. This begs the final question still in need of an answer: Can we, as urban scholars, activists, and citizens, imagine more just and inclusive forms of urban development through these technologies? How do we contest the "greedy unicorns"?

It seems we are all "stuck on the platform", in which a declaration of digital sovereignty is not enough (Lovink, 2022), we need to stick to digital platforms. As Lovink (2022: 24) remarks, we cannot ignore "the present political moment in favour of an invented tradition of thinking that must be preserved." If local authorities are expecting the divine intervention of such a deus ex machina, then not only is society in for a long wait, but we will continue to fall in to precisely the same traps as the makerspace dreamers. We will mistake technological change for social revolution, and individualism for freedom. If we are to change the plot of the tragedy in which we live, we cannot wait for the intervention of an imagined celestial scriptwriter: we will have to craft our own future.

Notes

44. As it is specified in the introduction, the two cities are used not as case-studies in methodological terms, rather as illustrative examples of innovative European cities in terms of technological implementation within their urban agendas. Furthermore, Milan and Amsterdam are both considered as 'sharing cities' by McLaren and Agyeman (2015) and according the European alliance called 'Sharing City Network'.

Appendix A
List of papers and chapters

This dissertation is based on the following chapter and articles (Chronological order of publication: status all published)

1.   Chapter (first author): Chiappini L. and Törnberg P. (2018) Deus ex machina: Makerspaces in Milan and their transformative potential. In K. J. Fisker, L. Chiappini, L. Pugalis and A. Bruzzese (Eds.) (2018) *The Production of Urban Alternative: An International Dialogue*. Routledge: London.
     Data was collected and analysed by the PhD candidate. The paper was jointly written by the PhD candidate and P. Törnberg.

2.   Paper (second author): Törnberg P. and Chiappini L. (2020) Selling black places on Airbnb: Colonial discourse and the marketing of black communities in New York City" *Environment and Planning A, 52(3)*, 553 – 572.
     Data was collected by the PhD candidate and analysed by P. Törnberg. The paper was jointly written by P. Törnberg and the PhD candidate.

3.   Paper (solo author): Chiappini L. (2020) The Urban Digital Platform. Instances from Milan and Amsterdam. *Urban Planning 5(4)*.

4.   Paper (second author): Anselmi G., Chiappini L. and Prestileo F. (2021) The greedy unicorn: Airbnb and capital concentration in 12 European cities. *City, Culture, and Society*.
     Data was collected by G. Anselmi and analysed by the three authors. The paper was jointly written by the PhD candidate, G. Anselmi and F. Prestileo.

5.   Paper (first author): Chiappini L. and de Vries J. (2022) Civic Crowdfunding as Urban Digital Platform in Milan and Amsterdam. Don't take Pictures on a Rainy Day! *Digital Geography and Society*.
     Data was collected mainly by the PhD candidate and analysed by the two authors. The paper was jointly written by the PhD candidate and J. de Vries.

6.   Paper (solo author) Chiappini L. (2022) Commonfare as Urban Digital Platform. Vignettes from Milan and Amsterdam. *City, Culture, and Society*.

Co-edited books and other related grants

–   Fisker K. J., Chiappini L., Pugalis L. and Bruzzese A. (Eds.) (2018) *The Production of Urban Alternative: An International Dialogue*. Routledge: London.

–   Fisker K. J., Chiappini L., Pugalis L. and Bruzzese A. (Eds.) (2019) *Enabling Urban Alternatives Crises, Contestation, and Cooperation*. Palgrave MacMillan: London.

–   Bogers L. and Chiappini L. (Eds.) (2019) *The Critical Makers Reader: (Un)learning Technology*. INC Reader; No. 12. Institute of Network Cultures. https://networkcultures.org/blog/publication/the-critical-makers-reader-unlearning-technology/.

–   CUS seed grant: "Alternative Urban Futures – Towards a Critical Research Agenda" Awarded to Letizia Chiappini (September 25, 2019, one day of event oraganised both at UvA and Pakhuis de Zwijger).

–   Global Digital Cultures grant: "Global Boss, Local Workers? How context influences food delivery riders' relation to platforms (GLOBLOW)" Awarded to Letizia Chiappini and Dr. Davide Beraldo.

Appendix B
Empirical material

List of Interviews

The list of interviews below is organised according to the fieldwork conducted in Milan and Amsterdam, with two rounds of fieldwork and follow-ups interviews within both cities. In Milan, the first part of fieldwork has been conducted from June 2016 to February 2017, the second round between January and February 2018, with follow-ups interviews carried out in October 2020. The number of interviewees in Milan is 32. In Amsterdam, the first wave of fieldwork has started in March 2017 until December 2017. The second period in which interviews material has been collected was from March 2018 to March 2019, with follow-ups interviews conducted in October 2020, counting 28 interviewees. For a total of 60 interviews conducted in both cities. Interviews conducted in October 2020 have been directed online, due to the spread of Covid-19 and relative consequences. The list of the informants is chronically listed based on the two main waves of collection of data, in Milan and Amsterdam between 2016-2020, based on their functions and connected organisations. Informants asked to remain anonym. The numbers are used as a cross-reference, underneath each of the reported quotes from interviews.

Milan, Italy

#	Function	Organisation	Date
1	Project manager	Municipality of Milan	10/06/2016
2	Researcher and consultant	Catholic University of Milan	12/06/2016
3	Story-teller and advisor	Sharing Economy advocacy	17/06/2016
4	Policy-maker	Municipality of Milan	02/07/2016
5	Researcher and consultant	Municipality of Milan	01/09/2016
6	Maker and entrepreneur	We Make	25/09/2016
7	Maker and user	We Make	25/09/2016
8	Maker and entrepreneur	Open Dot	03/10/2016
9	Maker and user	Open Dot	03/10/2016
10	Maker and project developer	Yatta!	10/10/2016
11	Maker and social entrepreneur	Yatta!	10/10/2016

12	Policy-maker	Municipality of Milan	09/11/2016
13	Entrepreneur and user	Airbnb	14/11/2016
14	Project manager	Airbnb	08/01/2017
15	Alderman	Economic affairs-Municipality of Milan	10/01/2017
16	Alderman	Social policies-Municipality of Milan	23/01/2017
17	Civil servant	Municipality of Milan	09/02/2017
18	Researcher	University of Palermo	12/02/2017
19	Story-teller and advisor	Sharing Economy advocacy	18/02/2017
20	Project developer and advisor	Sharing Economy advocacy	19/02/2017
21	Academic and co-founder	Commonfare platform	09/01/2018
22	Academic and co-founder	Commonfare platform	12/01/2018
23	Project developer	Civic crowdfunding	14/01/2018
24	User	Civic crowdfunding	03/02/2018
25	Technical provider expert	Civic crowdfunding (Eppela)	18/02/2018
26	User	Commonfare platform	21/02/2018
27	User	Commonfare platform	23/02/2018
28	Technical provider expert	Civic crowdfunding (Bottom-Up Prod.)	16/10/2020
29	User	Civic crowdfunding (Bottom-Up Prod.)	17/10/2020
30	Activist	Macao	19/10/2020
31	Activist	Macao	19/10/2020

Table 14. List of interviewees in Milan. **Source.** Author.

Amsterdam, the Netherlands

32	Civil servant	Municipality of Amsterdam	11/04/2017
33	Researcher and consultant	Utrecht University	13/04/2017
34	Story-teller and advisor	Share.NL	17/04/2017
35	Policy-maker	Municipality of Amsterdam	02/05/2017
36	Researcher and Consultant	(HvA) University of Applied Science	01/06/2017
37	Founder	Critical Makers Consortium	25/06/2017
38	Project Manager	De Waag	25/09/2017
39	Founder	De Waag	03/10/2017
40	Maker and user	Technologia Incognita	09/10/2017
41	Founder	ZB45	10/10/2017
42	Maker and user	ZB45	10/10/2017
43	Project Manager	Voor je Buurt (Civic Crowdfunding)	30/11/2017
44	Software Developer	Voor je Buurt (Civic Crowdfunding)	02/12/2017
45	Software Developer	Dyne.org	16/04/2018
46	Software Developer	Dyne.org	02/05/2018
47	Software Developer	Dyne.org	02/05/2018
48	Project Developer	Maakplaat21	18/05/2018
49	Project Manager	Maakplaat21	18/02/2018
50	Founder and Professor	Institute of Network Cultures	12/09/2018
51	Community Entrepreneur	Starter4communities	06/12/2018

52	Technical provider expert	Voor je Buurt (Civic Crowdfunding)	14/12/2018
53	User	Voor je Buurt (Civic Crowdfunding)	16/12/2018
54	Researcher and Consultant	(HvA) Minor Maker Lab	07/03/2019
55	User	Commonfare platform	11/03/2019
56	User	Commonfare platform	07/10/2020
57	Artist	NDSM Treehouse	12/10/2020
58	Artist	NDSM Treehouse	12/10/2020
59	Project developer	Municipality of Amsterdam	20/10/2020

Table 15. List of interviewees in Amsterdam. **Source**. Author.

Participatory Observation (Events)

As a starting point to set sessions of participant observations, an overview of the cultural venues where the related events take place was needed. These venues are BASE Milano, Fondazione Giangiacomo Feltrinelli, Piano Terra, and Macao, in Milan. While in Amsterdam, Pakhuis de Zwijger, Waag, Impact-Hub as a franchising co-working located in both cities. The two tables underneath illustrate the list of relevant events in which participant observations have been conducted, indicating the date, the type of events, the audience and the approximate size involved.

Milan, Italy

Event/Theme	Date	Type	Audience and Size
La famiglia naturale: le sue gerarchie, le sue ambiguità, la sua violenza – Fondazione Giangiacomo Feltrinelli	October 15, 2016	Public seminar – Workshop	Scientific community, civil society (approx. 20 participants)
Conference: Capitalismo delle Piattaforme – Macao	February 3-4, 2017	Public seminar – Panel discussion	Scientific community, civil society (approx. 50 participants)
Second Edition of Jobless Society Forum – Fondazione Giangiacomo Feltrinelli	February 27, 2017	Closed event – Official presentation	Policy makers, scientific community, private actors (approx. 100 participants)
Digital Week Milano – Makerspaces (different locations in the city)	February 15, 2018	Closed event – Official presentation	Policy makers, private actors (approx. 300 participants)
Presentation of the book "The Riot of the Cooperation" – Piano Terra	February 23, 2018	Public seminar – Official presentation	Civil society (approx. 20 participants)
Casa delle Associazioni e del volontariato – Municipality of Milan	February 27, 2018	Public seminar – Official presentation	Civil society (approx. 20 participants)

Event/Theme	Date	Type	Audience and Size
Valorizzare la singolarità e costruire un legame individuo – società. Uscire dalla polarizzazione tra isolamento individualistico e chiusure comunitarie – Macao	January 19, 2019	Public seminar – Official presentation	Civil society (approx. 50 participants)
Discussion of the book "Reinventing the world" with the author, Silvia Federici – Piano Terra	January 29, 2019	Panel discussion	Civil society (approx. 70 participants)

Table 16. Events - participant observations, Milan. **Source.** Author.

Amsterdam, The Netherlands

Event/Theme	Date	Type	Audience and Size
Promoting Commonfare – De Waag	June 23, 2017	Official presentation	Scientific community, civil society (approx. 60 participants)
Prelude to the Carnival of Oppressed Feelings – Commonfare (different locations in the city)	October 2-6, 2017	Official presentation	Policy makers, scientific community, cultural workers, asylum seekers (approx. 20 participants)
The Amsterdam Clojure Meetup – De Waag	May 10, 2018	Workshop	Software developers, IT specialists (approx. 25 participants)
Launch of "Good Societies" event at Nieuwland Centre	May 15, 2018	Workshop	Civil society, activist (approx. 35 participants)
Sharing economy and resilient neighbourhoods University of Applied Sciences (HvA)	June 18, 2018	Workshop, official presentation	Scientific community (approx. 30 participants)

COST Action - From sharing to caring - WG1 meeting (HvA)	September 24, 2019	Official presentation	Scientific community (approx. 70 participants)
NDSM Treehouse	October 17, 2019	Official presentation, workshop on implementation of Commoncoin	Civil society, Activists (approx. 20 participants)

Table 17. Events - participant observations, Amsterdam. **Source.** Author.

Digital Ethnography

As a supplementary method, digital ethnography has been chosen to grasp the complex, fluid and fragmented online environments such as digital platforms, websites, social media platforms like Twitter and Facebook. By looking at online activities and interactions between engaged communities and key actors, the two tables below propose a summary of the main visited online environments. The selection of the websites and accounts have been taken into consideration the other collected empirical material from participant observations and main informants, as well as their connections with the selected practices on civic crowdfunding and Commonfare platforms. Hence, it works in synergy with the other proposed methods. A few excerpts from the digital ethnography are reported below the two tables.

Social Media Platform	Account	Username	Followers
Twitter	Eppela	@Eppela_IT	6K
Twitter	Produzioni dal Basso	@betapdb	7,5K
Twitter	ShareNL	@share_NL	3,5K
Twitter	Voor je Buurt	@voorjebuurt	3K
Twitter	Waag	@waag	20K
Twitter	Marleen Stikker	@marleenstikker	12,5K

Twitter	Starters4Communities	@Starters4C	2K
Facebook	Commonfare	@Commonfare	3K
Facebook	Cristina Tajani (public profile)	@CristinaTajani	6K

Table 18. Digital ethnography on Twitter and Facebook, main relevant accounts (timeframe of the conducted digital ethnography from December 2016 to December 2019. Table updated in December 2020). **Source**. Author.

Websites and UDPs

Municipality of Milan – website

Treehouse Amsterdam – website

Municipality of Amsterdam – website

Macao – website

Civic Crowdfunding – I edition Milan – Eppela platform

Civic Crowdfunding – II edition Milan – Produzioni dal Basso platform

Civic Crowdfunding – Amsterdam Voor je Buurt platform

Commonfare platform

Table 19. Digital ethnography on relevant websites and UPDs (timeframe of the conducted digital ethnography from December 2016 to December 2019. Table updated in December 2020). **Source.** Author.

Excerpts, Milan and Amsterdam

Figure 13. Second edition of civic crowdfunding in Milan, repair caffes and makerspaces initiatives. Excerpt taken from the platform Produzioni dal Basso (based on the platform website).
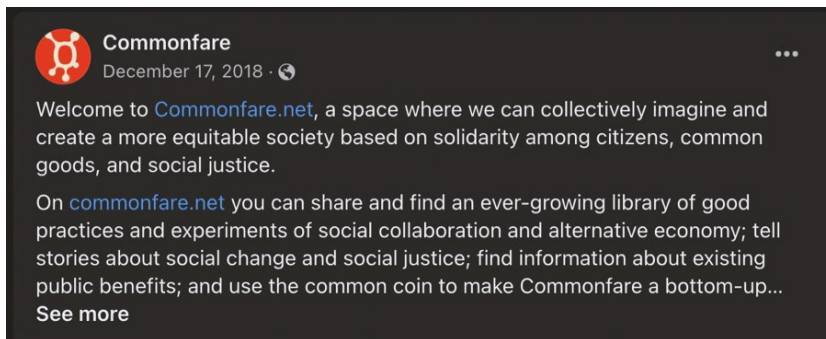
Figure 14. Commonfare promotion (excerpt taken from Facebook, account page Commonfare).

Figure 15. Voor je Buurt account on Twitter, post about "We are looking for a new #project leader and #advisor for our programs for social #initiatives #vacancy #socialentrepreneurship #impact". Translation by the author from Dutch to English (excerpt taken from the account page).

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Summary

This dissertation investigates what are the key component of digital platforms in relation to a wider process of urban transformation. The thesis aims to contribute to an understanding of the multiple forms that digital platforms can take by focusing on alternative spatial articulation and modes of production. By systematising the various normative claims to sharing economy, in which digital platforms and makerspaces are inscribed, I analyse discourses and practices in different urban contexts. After looking at the definitions of sharing economy, digital platforms, and makerspaces as given in the literature, I propose the concept of Urban Digital Platform (UDP). A UDP is oriented to citizen participation and facilitates the exchange of goods and services at a smaller, generally urban scale: they are both of and for the city and its inhabitants. Hence, I position the UDPs in a wider frame of urban development.

The definition of UDP is based on empirical findings, starting from a critique of Airbnb to the investigation of civic crowdfunding and Commonfare, as platforms oriented to community development and citizen participation. UDPs interact with those parts of the society interested in alternative discourses and practices, which co-exist with conventional urban economic patterns. However, their promoted activities, projects, and practices might encounter obstacles and a "mission creep" tendency, in which they might sell products to survive and function. These dynamics and mechanisms are contested, by blurring the boundaries between top-down and bottom-up in the decision-making phases and exacerbating existing unevenness in the provision of goods and services within the urban space.

This dissertation examines UDPs using empirical evidence and data gathered through different methods (i.e. interviews, GIS mapping, and digital ethnography) and comparatively across cities. Chapter I uses the Gini index to do a comparative analysis of trends of capital concentration in twelve European cities, including Amsterdam and Milan, by looking at Airbnb as an example of a global digital platform. Chapter II provides a case study of New York. Like Chapter I, this paper uses datasets available from the open database Inside Airbnb. The reviews of white and black hosts are analysed in relation to the spatial articulation of listings and their revenues. Chapter III is a close investigation of makerspaces in Milan. Makerspaces are conceived as alternative spaces that favour an inclusive urban development and a mode of production which stimulates complementary urban economies in terms of allocation of goods and services. Chapters IV, V, and VI deploy examples from Milan and Amsterdam using a match-pairing of the same platforms, namely civic crowdfunding and Commonfare, as use-cases to exemplify the UDP, which operates in both cities. This allows a comparison of the two platforms, their related discourses and practices, as well as to grasp obstacles and limitations in the implementation of such platforms at an urban scale.

From a political economy perspective, the main dynamics and mechanisms might indicate a co-existence of diverse modes of production. In particular, both chapters III and

IV intend to scaffold the main dynamics and mechanisms, by looking at makerspaces and conceptualising the UDP. While Chapters V and VI focus mainly on governance aspects, urban actors and the spatial dimension.

Through detailed examinations of different cases such as Airbnb, makerspaces, civic crowdfunding platforms, and Commonfare (care provision and mutual help platform), I have aimed to expand existing knowledge about the relationship between media technology and the city. The empirical material has been deployed to broaden the academic and societal debates concerning digital platforms. Indeed, the relevance of such enquiries is not limited solely to the academic world, for the practices examined here might have considerable implications for wider social issues such as participation, inclusion and exclusion, and the future development of our cities more broadly.

Samenvatting

Deze dissertatie onderzoekt wat de belangrijkste componenten zijn van digitale platformen in relatie tot het bredere kader van stedelijke transformatie. De studie wil bijdragen aan een beter begrip van de vele gedaantes die digitale platformen, gespecialiseerd in alternatieve ruimtelijke articulatie en productiewijzen, kunnen aannemen. Door het systematiseren van de verschillende normatieve claims van de deeleconomie waarin digitale platformen en makerlabs zijn opgenomen, analyseer ik discoursen en praktijken die gesitueerd zijn in verschillende stedelijke contexten. Na een uiteenzetting van de definities van de deeleconomie, digitale platformen en makerlabs, zoals die in de literatuur worden gegeven, introduceer ik het begrip Urban Digital Platform (UDP). Een UDP is gericht op burgerparticipatie en faciliteert de uitwisseling van goederen en diensten op een kleinere, doorgaans stedelijke schaal; ze zijn zowel van als voor de stad en haar inwoners. Ik plaats de UDP's hiermee in het ruimere kader van de stadsontwikkeling.

De definitie van het UDP is onderbouwd met empirische bevindingen, van een kritiek op Airbnb tot onderzoek naar civic crowdfunding en Commonfare (gericht op zorgverlening en wederzijdse hulp), platformen die gericht zijn op gemeenschapsontwikkeling en burgerparticipatie. UDP's communiceren met die delen van de samenleving die geïnteresseerd zijn in alternatieve vertogen en praktijken die naast conventionele stedelijke economische patronen bestaan. Hun gepromote activiteiten, projecten en praktijken kunnen echter stuiten op obstakels en een "mission creep" tendens, waarbij producten verkocht worden om te functioneren en te overleven. Deze dynamiek en mechanismen worden aangevochten door de grenzen tussen top-down en bottom-up in de besluitvormingsfasen te vervagen en door de bestaande ongelijkheden in de levering van goederen en diensten binnen de stedelijke ruimte verder te vergroten.

In dit proefschrift worden UDP's onderzocht aan de hand van empirisch bewijs en gegevens die zijn verzameld met behulp van verschillende methoden (d.w.z. interviews, GIS-kartering, en digitale etnografie), in vergelijking met andere steden. Hoofdstuk I gebruikt de Gini index om een vergelijkende analyse te doen van trends van kapitaalconcentratie in twaalf Europese steden, waaronder Amsterdam en Milaan, door te kijken naar Airbnb als een voorbeeld van een wereldwijd digitaal platform. Hoofdstuk II biedt een casestudy over New York.

Net als hoofdstuk I maakt deze analyse gebruik van datasets die beschikbaar zijn via de vrij toegankelijke database Inside Airbnb. De beoordelingen van witte en zwarte verhuurders worden geanalyseerd in relatie tot de ruimtelijke articulatie van verhuurders en hun inkomsten. Hoofdstuk III is een nauwkeurig onderzoek van makerlabs in Milaan. Makerlabs worden hier opgevat als alternatieve ruimten die een inclusieve stedelijke ontwikkeling bevorderen en een productiewijze die complementaire stedelijke economieën stimuleert in termen van allocatie van goederen en diensten. In de hoofdstukken IV, V en VI worden voorbeelden uit Milaan en Amsterdam gebruikt, waarbij dezelfde platforms, namelijk civic crowdfunding en Commonfare, als voorbeelden worden gebruikt

om het UDP fenomeen te illustreren dat in beide steden actief is. Dit alles maakt een vergelijking mogelijk van de twee platformen, hun gerelateerde discoursen en praktijken, ook om obstakels en beperkingen te begrijpen in de implementatie van dergelijke platformen op stedelijke schaal.

Vanuit een politiek-economisch perspectief zouden de belangrijkste dynamieken en mechanismen kunnen wijzen op het naast elkaar bestaan van verschillende productiewijzen. Met name de hoofdstukken III en IV zijn bedoeld om de belangrijkste dynamiek en mechanismen te schetsen door te kijken naar makerlabs en het UDP concept. De hoofdstukken V en VI richten zich vooral op bestuurlijke aspecten, stedelijke actoren en de ruimtelijke dimensie.

Door middel van gedetailleerde onderzoeken van verschillende cases zoals Airbnb, makerlabs, civic crowdfunding platformen, en Commonfare heb ik getracht de bestaande kennis over de relatie tussen mediatechnologie en de stad te verdiepen. Het empirisch materiaal is ingezet om de academische en maatschappelijke debatten over digitale platforms te verbreden. De relevantie van dit soort onderzoek beperkt zich namelijk niet alleen tot de academische wereld aangezien de hier onderzochte praktijken aanzienlijke implicaties hebben voor bredere maatschappelijke kwesties zoals participatie, insluiting en uitsluiting, en de toekomstige ontwikkeling van onze steden in bredere zin.

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