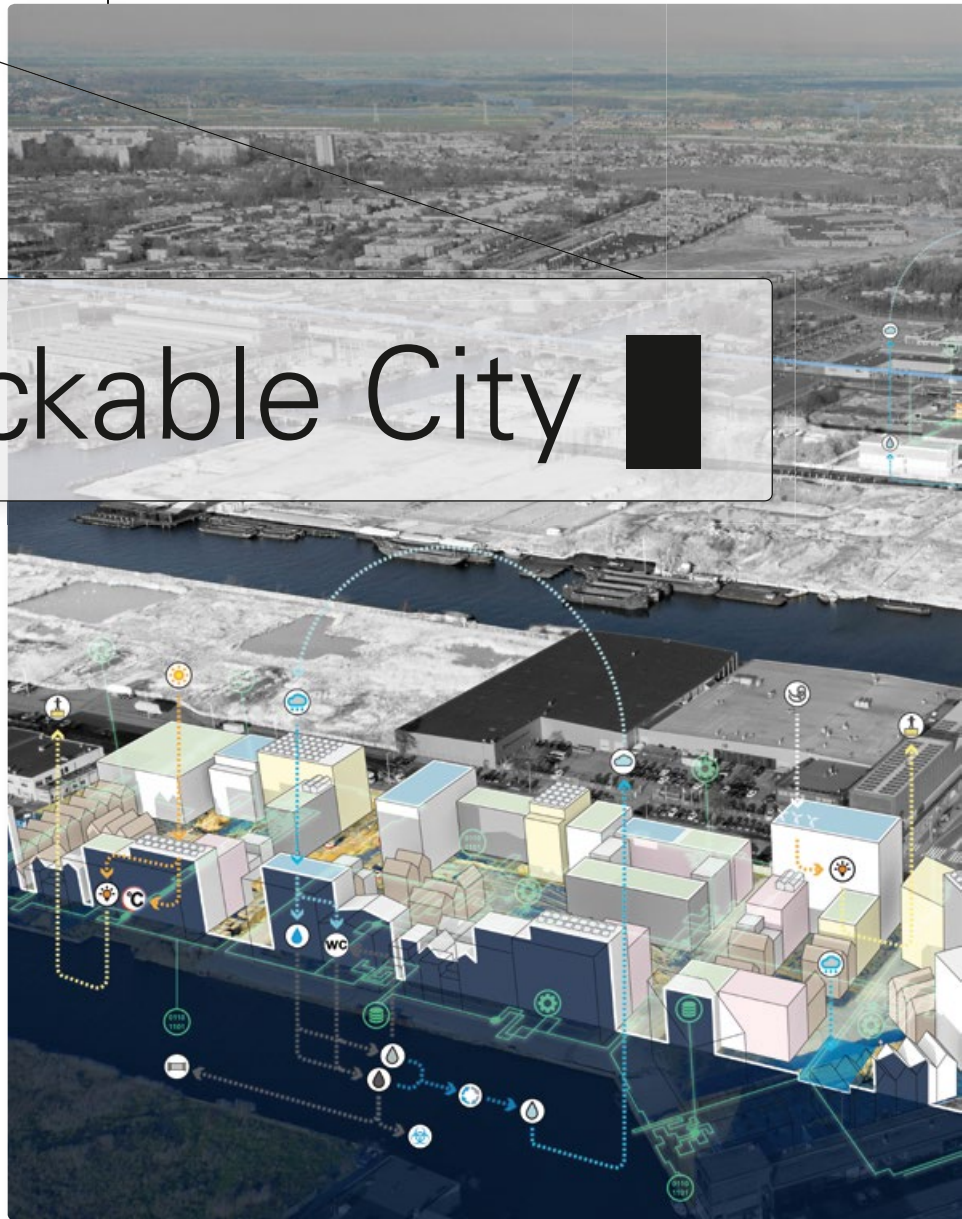
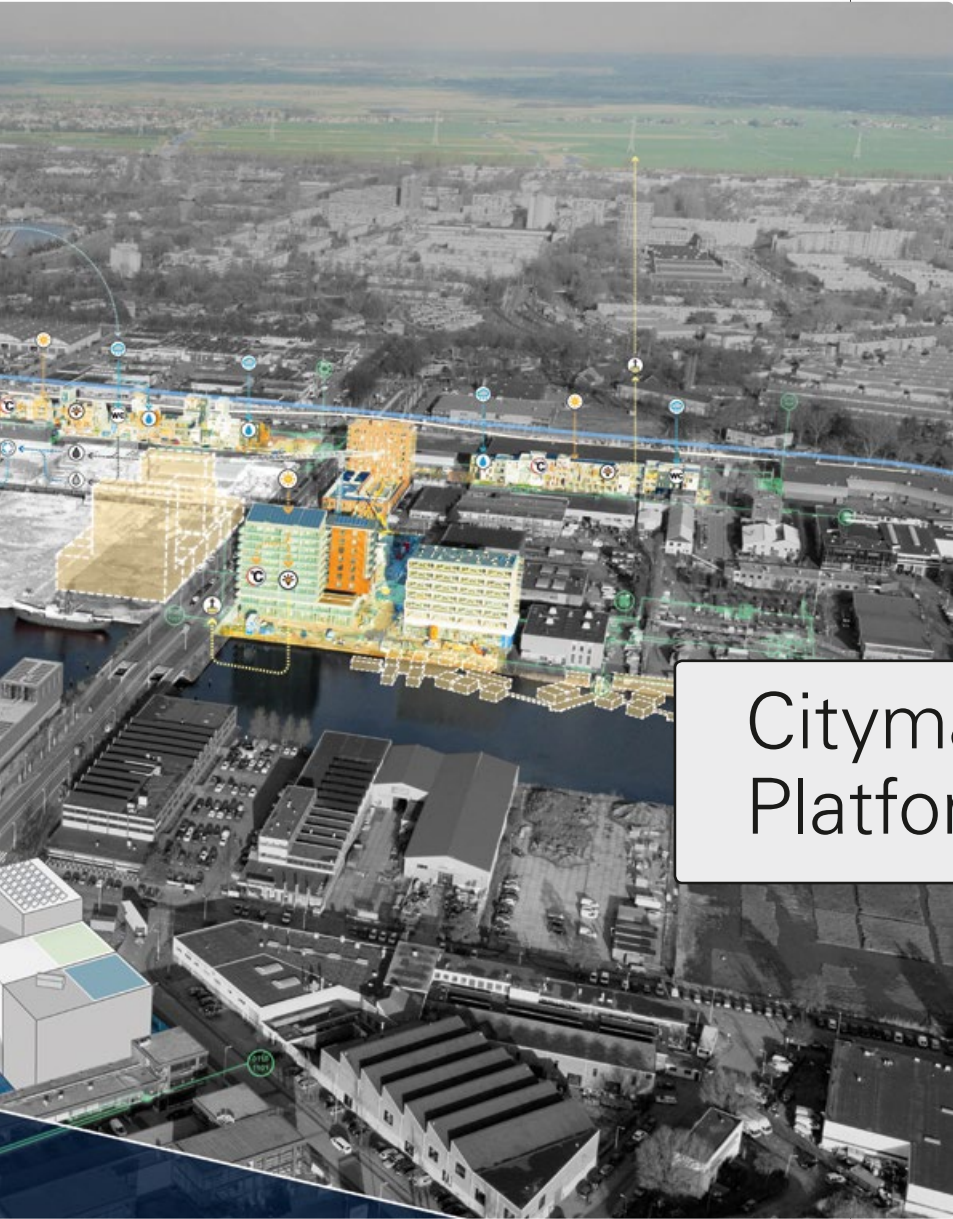


Martijn de Waal,
Michiel de Lange
and
Matthijs Bouw

The Hackable City



Can computer hacking have positive parallels in the shaping of the built environment? The Hackable City research project was set up with this question in mind, to investigate the potential of digital platforms to open up the citymaking process. Its cofounders **Martijn de Waal,**



One Architecture,
The Mobile City Foundation,
Delva Landscape Architects,
Stunionedots and
Stadslab Buiksloterham,
Hackable Cityplot,
Amsterdam,
2016

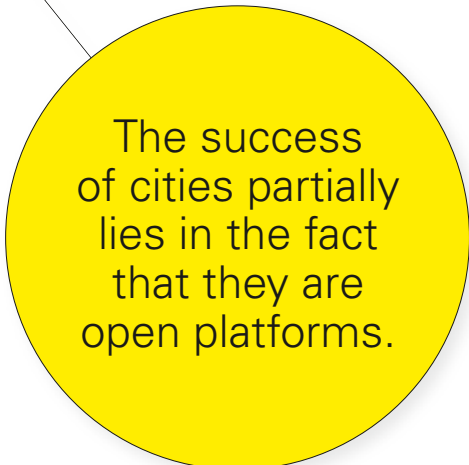
Due to the economic crisis, the redevelopment of the brownfield site of Buiksloterham in Amsterdam Noord was opened up to new actors such as self-builders and building groups. They have set up a coalition with larger institutional players to develop the area in a networked way, according to the principles of the circular economy.

Citymaking in a Platform Society

Michiel de Lange and Matthijs Bouw here outline the tendencies that their studies of collaborative urban development initiatives around the world have revealed, and ask whether knowledge sharing and incremental change might be a better way forward than top-down masterplans.

The rise of a broad variety of digital media platforms – from Airbnb to Uber and from local community websites to worldwide operating social media companies such as Facebook – is bringing about a platform society: one in which social and economic relations are increasingly mediated through an ecosystem of interconnected digital media platforms.¹ An important impact of these platforms lies on the level of the ‘hyperlocal’, as they enable citizens to organise themselves into publics around local issues, and thus to act upon these issues. However, these platforms are not neutral mediators, simply linking up demand and supply in a number of social and economic domains. Contrary to rhetoric denoting them as mere connectors, it could be argued that they embody a particular ideology, or – in relation to urbanism – a particular urban imaginary and redistribution of power in practices of citymaking.

The Hackable City research project – led by cofounders One Architecture and the Mobile City Foundation, and currently carried out in cooperation with the Amsterdam University of Applied Sciences, the University of Amsterdam and Utrecht University – has since 2012 introduced the notion of the ‘hackable city’ as a lens to understand the role these platforms play in the processes of citymaking. The notion is used to ask how digital media can be employed to open up urban institutions and infrastructures to systemic change in the public interest. As such it explores the opportunities these platforms offer for modes of collaborative citymaking that empower (hyper)local stakeholders in an open and democratic society.



The success of cities partially lies in the fact that they are open platforms.

Hackable Cities: Open or Closed Technological Constructs?

The term ‘hackable city’ is a productive one for three different reasons. Firstly, the term ‘hacking’ directly refers to engagement with computer systems or networks, and foregrounds the use of digital technologies in the process of citymaking. Specifically, hacking is defined as the processes of opening up these existing systems or networks to playfully reappropriate technologies beyond their intended designs. As such it can be understood both as a practice – the act of appropriation – and as an affordance of a system – to what extent does it enable that appropriation to be carried out easily?

All kinds of urban practices that use the physical city as an interface to connect citizens with one another are now partly remediated through online platforms. Whether it is hailing a taxi in the street, buying a book in a local bookshop, or finding a date in a bar or club, as a popular advertisement has put it: ‘there’s an app for that’. These apps are often integrated in a larger ecosystem based on the collection of user data and the referral of consumers to particular services. Similarly, many new platforms such as Nextdoor.com have emerged that allow citizens in neighbourhoods to exchange services, ideas and resources.

In relation to practices of citymaking, the role of these platforms and a good understanding of their workings are important. The Spanish sociologist Manuel Castells has made the point that cities themselves can be understood as ‘platforms’, or ‘material interfaces’ that connect individual city dwellers with collective practices, experiences and rhythms.² To put it in the words of the American architecture critic Paul Goldberger, cities could even be understood as ‘the original internet’, as ‘random connections are what make them work, and surprise and a sense of infinite choice is what gives them their power’.³

In other words, the success of cities partially lies in the fact that they are open platforms. Within the urban fabric, citizens can create their own sites of exchange, and an urban public sphere comes into being when all of these interactions start overlapping spatially. That is also when all kinds of new connections can be forged. In the terminology of this article cities can be ‘hacked’ or appropriated by their citizens. Of course, not all citizens have the same means or power to do so, and there are huge inequalities that need to be addressed. Not all cities are equally open for appropriation. Yet even in cities in closed political systems, citizens may still find a place to voice their dissent, or organise a shadow economy.

Talking about the city in terms of hackability means foregrounding the question of the extent to which urban spaces and practices can still be opened up, made legible and understandable and appropriated beyond their intended designs. Like hackers do, it should be possible to ‘unblackbox’ the digital media platforms that have started to play a prominent part in our lives, and come to a better understanding of their underlying logic. To what extent can these new platforms be opened up by citizens? Who has access to the data they aggregate, under what conditions? Who governs these platforms and decides on the rules that are encoded in their algorithms? Hacking as a lens brings these questions to the fore in the debate on the role of platforms in the process of citymaking.

Hackable Cities as an Alternative Urban Imaginary

There is a second reason why hacking is a useful term to talk about the future of cities. The notion of hacking and the various computer-centred hacker cultures that have emerged in the last half a century can also be invoked as an alternative imaginary. In this case, hacking is invoked as a particular normative ethos that could guide the design or regulation of digital media platforms. There is not such a thing as a singular hacker culture, and its popular understandings have ranged from criminal practices such as breaking into computer systems and credit card fraud to more positive connotations that centre on collaboration towards a common public good – as found, for instance, in the open-source software movement.



Urbego and Micromega (Mara Papavasileiou and Alexandros Zomas), Akalyptos 2.0: an urban pocket methodology implementation, Athens, 2016

In Athens most apartment buildings (*polykatoikia*) have an underused backyard within the interior of the urban block, called the *akalyptos* (literally: the uncovered).



The network of Urbego and Micromega, as local partners, propose a methodology of participatory design to combine and reclaim these left-over spaces as collectively managed shared spaces.

The first understanding reminds us that we should never be too naive about computer networks, privacy and security, and that all systems may indeed be hacked by contrarian forces. The second gives us an outlook on citymaking that makes use of technology to work towards a public good. For instance, we find such an outlook in American author Anthony M Townsend's description of 'civic hackers'. In his book *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia* (2013) he describes civic hackers as citizens who do not buy into the dominant smart city myths, but instead organise their own decentralised networks of online collaboration, for instance through the organisation of hackathons.⁴

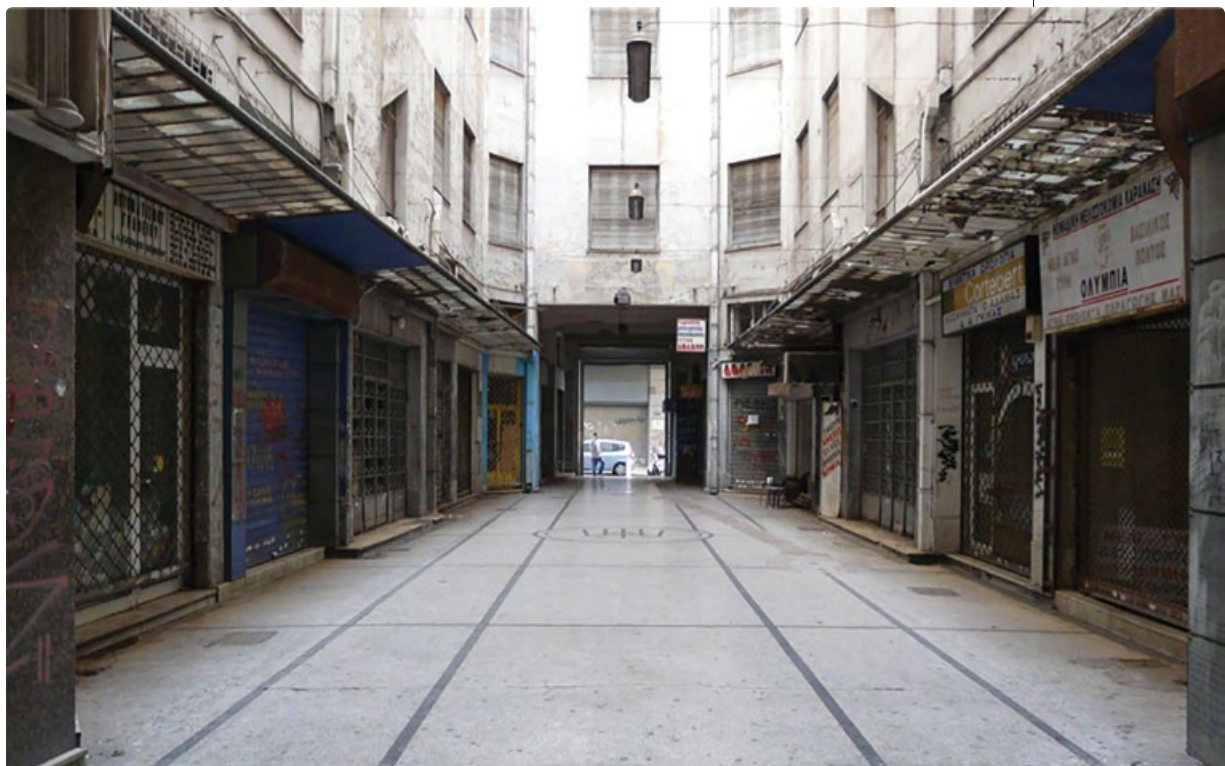
A number of characteristics can be traced in these kinds of descriptions of hackers' practices, referring to various instances of hacker cultures. First, hacking is about learning by doing, sharing knowledge and learning from each other. Often, hacker cultures also revolve around collaborating towards a common goal. Think of examples such as the open software movement, or the culture of sharing knowledge around an online phenomenon like Wikipedia. Next, hacking is also about a process of tinkering, trying things out through small incremental changes, rather than by creating top-down masterplans. Can such principles of learning from each other and collaboration towards a common good be transferred to citymaking? And how can online platforms stimulate these kinds of practices? The notion of hacking can bring out particular qualities found in hacker cultures that revolve around collaboration towards a common good, and as such function as an alternative urban imaginary to be invoked in practices of citymaking.

To get a better grasp of what this imaginary of the hackable city could look like, the eponymous project has so far conducted two studies of collaborative citymaking initiatives. In 2013 and 2014 the team mapped 84 projects in Amsterdam, and analysed 8 of these in more depth. In 2016 similar analyses were carried out on a broad range of projects in an international context, including Athens, São Paulo and Shenzhen.

In São Paulo, the team uncovered many examples of initiatives that aimed to reactivate public spaces, varying in scope from a citizen-led movement that started programming events at the Largo da Batata public square and decorated it with new urban furniture, to the online platform project *Pracas.com.br*, that provides tools for communities to set the agenda for, and to coordinate action around, the renovation of local squares. In Athens, the team analysed projects like *Traces of Commerce*, which reactivated a vacant shopping arcade by inviting social entrepreneurs to take residency and organise public workshops. Another example in Athens was *Akalyptos 2.0*, a project that through a procedure of co-design aims to pool the underused open spaces of apartment blocks in the city into a shared courtyard. In Amsterdam, *The Hackable City's* current research has focused on the development of *Buiksloterham*, a brownfield site that, due to the economic crisis, was opened up to new types of urban developers such as self-builders and communal building groups. Here the chief interest lies in the dynamics of the networks they have organised to learn from each other, pool resources and collaborate to develop the area according to the logic of the circular economy.

Haris Biskos (Potemkin) and Martha Giannakopoulou (If_Untitled Architecture) *Traces of Commerce*, Athens, 2016

Due to the financial crisis, Athens has seen many vacant commercial spaces such as this *Stoa Empoton* (Arcade of Merchants).



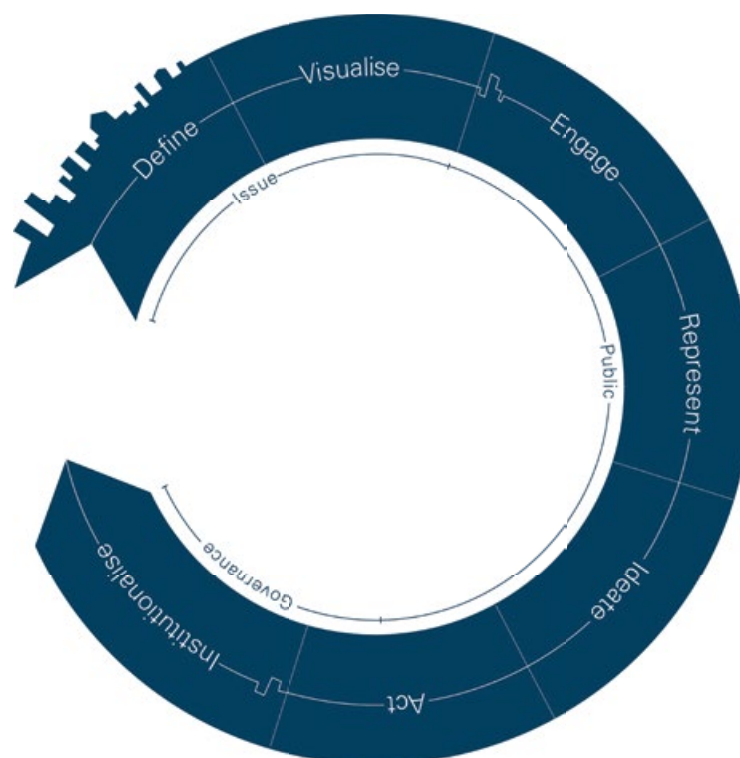
What The Hackable City's investigations have uncovered is that many of these projects follow a path of seven steps. They start with the definition of an issue by an involved stakeholder. From the perspective of hackability, here an important question is: who has the power and the means to name an issue and put it on the agenda? Next, attempts are made to visualise or communicate the issue at hand, both through online campaigns and by manifestations in public space. Tactics are then employed to engage a public around the issue. In the next phase this public is given a platform to convene. This could again take the shape of an online platform, varying from a Facebook group to a purpose-built platform. Here an important question is the issue of how the public is represented on this platform. Are members represented as individuals, or as an aggregated collective voice? How are individuals represented? Can people contribute anonymously, or only with their real names? Are external protocols used – such as Facebook profiles – and what happens with the data that is generated?

These platforms lead to the next phases: usually tools are introduced through which publics can ideate, learn and exchange upon the issue, and consequently pool resources or act upon it. In the seventh and last phase, actors involved start looking for ways to institutionalise temporary interventions, proposals or solutions. How can the results of the whole process lead to a lasting outcome? This is not always necessary or even desirable, but often the goal of hackable projects is indeed to contribute to a more systemic change, rather than producing a one-off event.

Alongside this cycle of seven steps, The Hackable City's research has additionally found that many initiatives make use of a number of particular 'tools' or 'strategies' that can also be seen as the building stones of 'hackable city' projects. For instance, many projects have constructed 'knowledge communities'. These are platforms through which participants can learn from each other. They can take the form of wikis, weblogs or informal meet-ups in which participants exchange knowledge and insights. Another important strategy is 'trust brokering': before a public can act on a particular issue, its participants need to be able to trust each other. Whereas many digital media platforms here rely on online reputation systems and user reviews, the Hackable City team found that many of the initiatives they investigated tend instead to use social events as the most important way to build up trust. A last example of one of the strategies used is capacity building: many of the projects researched undertake efforts to educate their participants, getting them up to speed with new skill sets that can help them to act.

The Hackable City,
The Hackable City process,
2015

'Hackable city' initiatives usually evolve through seven phases, from the naming of an issue to the institutionalisation of a particular approach to address that issue.



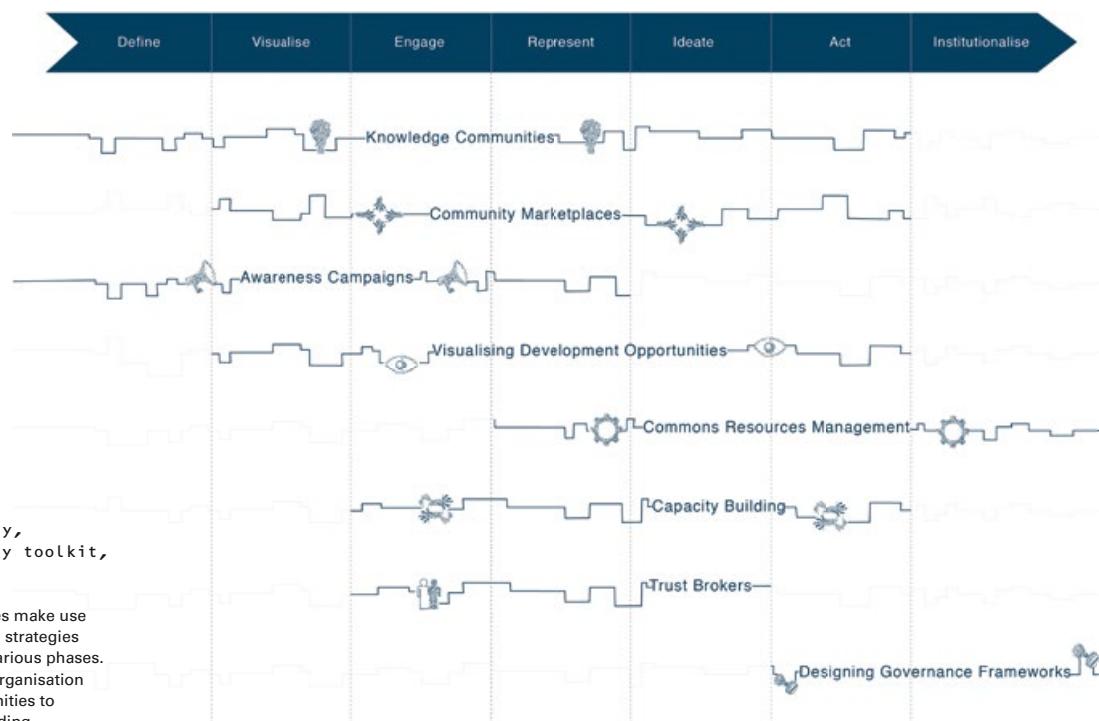
The Hackable City as a Critical Lens

A third application of the term ‘hacking’ is found in its usefulness as a critical lens. Whereas the hacker ethos can indeed empower citizens to collaboratively set goals and work towards them, it is necessary also to turn a critical eye to these practices. In reality cities are also sites of contestation, where different groups of citizens may have different preferences or economic interests, and where existing power relations do not all of a sudden disappear with the emergence of collaborative digital media platforms.

Conflicts may arise between the public interest at large and the interests of smaller groups of citizens. How does the agency that individuals may gain from a hackable city perspective hold up to existing practices of democratic decision making? What is the legitimacy of hacks proposed by newly empowered collectives? In the Netherlands, the social scientists Evelien Tonkens, Margo Trappenburg, Menno Hurenkamp and Jante Schmidt have recently pointed out that an approach to citymaking that makes more room for self-organisation and bottom-up initiatives may work especially well for those who have the skills and political connections to get their ‘hacks’ off the ground – while others without the energy, the skills or the willingness to participate may be left behind.⁵ The notion of hacking as a skill set, and as practices that serve collective but not necessarily public interests, brings these aspects to the fore.

In the course of The Hackable City’s research, this perspective has led to the development of another heuristic model used to understand and to map practices of collaborative citymaking and their relations to democratic institutions. On the left-hand side of the model are individual citizens. The majority of ‘hackable city’ projects aim to organise individuals in some form of a collective, as indicated in the centre of the model. In most instances, individual citizens contribute some form of resources to the collective, be it time, money, knowledge or materials. In return they receive a product or service, like a better public space, locally produced energy, or a house that is the result of a collaborative building group.

However, these collectives do not operate in a vacuum. They operate within legal, regulatory, economic and social frameworks set by local institutions, as illustrated on the right-hand side of the model. It is these democratically elected or controlled institutions that have the legitimacy to establish public interests and come up with policy instruments to safeguard those interests. As British urbanist Dan Hill has recently pointed out, there is a potential conflict between the two sides of the diagram.⁶ The left side is the ‘social’ where citizens collaborate towards common goals. The right could be understood as the ‘democratic’, the institutions through which we govern our cities. In a European social democratic tradition, these institutions have always played a central role in the safeguarding of public values in our societies. A singlehanded focus on the notion of hacking per se may undermine this tradition and favour the social practices of particular – privileged – groups.



The Hackable City, The Hackable City toolkit, 2015

Hackable City initiatives make use of a range of tools and strategies that are deployed in various phases. They range from the organisation of knowledge communities to processes of trust building.

At the same time, these social practices could contribute to public interests as well: for instance, in the reactivation of public spaces, the design of schemes for hyperlocal renewable energy production networks, or the organisation of a much more varied housing landscape than the traditional market or current regulation would allow. That is why one of the main research themes of The Hackable City lies in the question of how these practices of collective organisation can be better tuned to institutional practices and the design of instruments that could help forge this link. How can a 'hack', once it is undertaken, demonstrate its contribution to public values and convince policymakers to adopt its approach into legal and policy frameworks? Whereas the invocation of a hacker ethos may bring attention to the design and regulation of collaborative practices and platforms that would allow individuals to organise themselves as collectives around communal issues of interest, at the same time these practices somehow need to be embedded in institutional frameworks that can safeguard public interests.

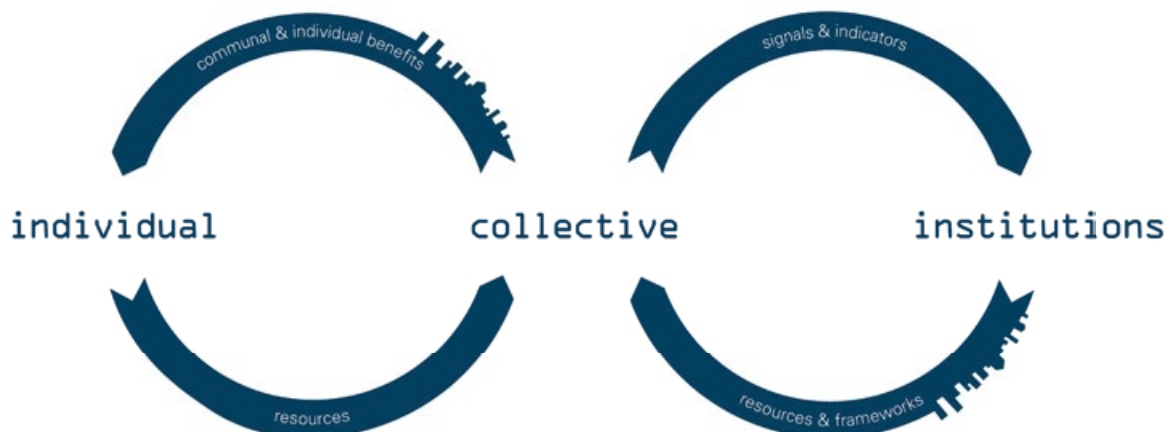
It could even be argued, perhaps counterintuitively, that in a hackable city, the process of citymaking should not be left to hackers alone. Procedures of institutional democratic governance may even become more important, not less. As when room is made for hacking initiatives, institutions that are able to legitimately determine and uphold the public interest will have to play a central role. On the one hand they have to make sure that the city remains an open system, and safeguard or even promote its hackability. At the same time these institutions are the only ones who have the legitimacy to also safeguard inclusiveness and the public interest in the hackable city. ▢

Notes

1. Cristina Ampatzidou, Matthijs Bouw, Froukje van de Klundert, Michiel de Lange and Martijn de Waal, *The Hackable City: A Research Manifesto and Design Toolkit*, Amsterdam, The Knowledge Mile Publications (Amsterdam), 2015; José Van Dijk, Thomas Poell and Martijn de Waal, *De Platformsamenleving (The Platform Society)*, forthcoming.
2. Manuel Castells, 'The Culture of Cities in the Information Age', in Ida Susser (ed), *The Castells Reader on Cities and Social Theory*, Blackwell (Malden, MA), 2002, pp 367–89.
3. Paul Goldberger, 'Cities, Place and Cyberspace', lecture held at University of California, Berkeley, 1 February 2001, <http://www.paulgoldberger.com/lectures/cities-place-and-cyberspace/>.
4. Anthony M Townsend, *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia*, WW Norton & Company (New York), 2013.
5. Evelien Tonkens, Margo Trappenburg, Menno Hurenkamp and Jante Schmidt, *Montessori democratie: Spanningen tussen burgerparticipatie en de lokale politiek*, Amsterdam University Press (Amsterdam), 2015.
6. Dan Hill, 'The Social and the Democratic, in the Social Democratic European City', Medium.com, 23 May 2016, <http://bit.ly/2cROSEG>.

The Hackable City,
Heuristic model for
the analysis and design
of 'hackable cities',
2015

In a 'hackable city', individual citizens organise themselves in collectives focused around specific issues. These collectives in turn operate in legal and regulatory frameworks set by democratic institutions.



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