

HACKING BUIKSLOTERHAM **How Self-Builders Are Making Their City**

M. Lange and M. Waal

Keywords: Smart Cities, Smart Citizens, Hacking Culture, Urban Planning, City-Making

ABSTRACT

The aim of the research-by-design project The Hackable City is to develop a research agenda and toolkit that explores the role of digital media technologies for new directions for urban planning and city-making. How can citizens, design professionals, local government institutions and others creatively use digital technologies in collaborative processes of urban planning and management? The project seeks to connect developments of, on the one hand, city municipalities that develop smart-city policies and testing these in 'urban living labs' and, on the other hand, networked smart-citizen initiatives of people innovating and shaping their own living environments. In this contribution we look at how self-builders in urban lab Buiksloterham in Amsterdam have become 'hackers' of their own city, cleverly shaping the future development of a brownfield neighbourhood in Amsterdam's northern quarter.

1. INTRODUCTION HACKABLE CITY-MAKING

The Hackable City is a long-running research-by-design project that focuses on how citizens, design professionals, local government institutions and others creatively use digital technologies in collaborative processes of urban planning and management. The project is a collaboration between academics, urban designers and various organisations in the domains of policy, urban services and the cultural field. One of the main concerns of the project is about the phenomenon of self-building, which involves individuals or groups who (co-)design and build their own homes on plots of acquired land.

The term *hackable city* productively connects parallel yet often separate developments. City municipalities worldwide embark on *smart city* policies with tech businesses and knowledge institutions. They deploy digital technologies and big data to optimise services like traffic, energy, environment, governance and health. At the same time, bottom-up smart-citizen initiatives blossom in many cities. They consist of networked groups who engage in issues like neighbourhood livability, building communities, taking care of their own energy provisioning, sharing tools, cars and other resources, and measuring and generating environmental data. Often these people employ sensor technologies, use open data or utilise digital media to organise themselves around a shared issue. As an attempt to connect these worlds, an increasing number of cities have assigned specific areas as urban laboratories, or ‘living labs’, for studying and experimenting with new ways of city-making. However, a comprehensive vision that is both critical and affirmative about these developments is lacking.

The notion of *the hackable city* is an attempt to do just that (Ampatzidou et al., 2015). The term functions as a heuristic lens to investigate how new media technologies enable people to become active shapers of their urban environment, and how urban institutions and infrastructures can be opened up to systemic change by other stakeholders. The notion of ‘hackable city-making’ is urgent

and relevant from an academic point of view and from a societal perspective. First, a hotly debated topic in academia is how digital media technologies become increasingly important shapers of urban life and culture. Most notably, *smart cities* have attracted huge attention from the academic community. Second, researchers have observed a crisis in the ‘natural’ legitimacy of expert knowledge, such as urban design, and investigated how this shapes the work of professionals and the role of institutions. Third, governments across the world are adopting ‘participatory society’ policy agendas in an attempt to harness the ethics of do-it-yourself for reducing costs and legitimising policy. Fourth, a variety of factors – rapid urbanisation, an increase in natural disasters, the 2008 monetary crisis – have exposed the need to build resilient cities.

The term hacking as we use it refers to playful cleverness in problem-solving with the aid of computer technologies, and associated practices stemming from digital media culture. We observe striking parallels between the original hackers – computer hobbyists who write their own software for existing machines and share that among themselves and with the world – and current city-makers, who similarly contribute innovations for their city with limited means. Like hackers, today’s city-makers use digital media to bend around or begin various urban infrastructures, systems and services. Those parallels exist on at least these three levels:



Figure 1 Hackable city model

- 1) an individual *hacker attitude* fuelled by do-it-yourself ethics and professional-amateurism (doing something very well ‘for the love of it’, being intrinsically motivated);
- 2) a collective set of *hacking practices*, including open innovation, collaboration and sharing knowledge and resources;

3) *hackability* of institutions; that is, the structural affordances at the level of organisations and public governance to be open to systemic change from within or outside.

This model is neither purely descriptive nor purely prescriptive. It should be considered as a heuristic that allows us to ask the question: how can the city be made 'hackable', that is, opened up to other people to shape their living conditions?

2. A STORY ABOUT HACKABLE SELF-BUILDING

When it comes to city-making, this challenge is particularly daunting in Buiksloterham, a brownfield area in Amsterdam North that is assigned as an urban lab destined to grow from 200 to over 10,000 inhabitants. The area was opened to self-builders: private individuals or households who want to build their own home, and collectives of about 15 to 50 people who want to build a shared apartment together. Self-building epitomises principles and practices of hackable city-making: non-experts doing it themselves, participating and engaging with their city differently. The research is based on ethnographic research carried out in the area. It provides a theoretical foundation for understanding the connection between bottom-up city-making processes and institutionalisation, and provides a compelling narrative for a research-and-design agenda about people-centric hackable smart cities.

Many shades of grey exist in terms of the financial and organisational constructions under which collective self-building happens. Some people are at the wheel themselves, hiring architects, constructors, consultants, and so on, to help realise their shared dreams. A fair number of projects are actually initiated by architects themselves, and allow for varying degrees of consultation and customisation. The increasing number of people who are building their own homes seems to be indicative of a trend of non-experts doing it themselves, participating and engaging with

their city differently. Self-building to us seems to epitomise the principles and practices of hackable city-making.

The stories of individual self-builders at times sound like adventure quests. Self-builders, like hackers, are invariably driven by strong motivation. As many recount, thanks to their own cleverness, stamina, and the sharing of resources, they are able to overcome the many obstacles they face in the complex and unknown urban landscape. At the collective level, doing things together is crucial. According to many of the people we spoke to, new collective practices of city-making are all about identity: identity of the neighbourhood and identity of the people living there. How do groups get a feeling of togetherness? Who are these people and what makes them a recognisable group that allows investors and other parties to become interested in doing business with them? The question of collective identity also plays a role at the level of new services. Do you arrange services like water and energy provision individually, collectively or publicly? And how do groups manage trust and risks among themselves? An interesting finding was that initiatives often start small and in a bottom-up fashion but people are more likely to be successful when they quickly get in touch with institutions and have the capacity to mobilise them for their ends. Obstacles and opponents come from all directions. Sometimes it is the big vested parties who, after the financial crisis, aim to continue in their old ways by developing the city at a grand scale. Sometimes it is the municipality that does not give self-builders enough freedom or gives too little guidance and support or superimposes rules and procedures perceived as unnecessary. Nonetheless, by engaging 'adversaries' in the right way, they can become allies. In the end such parties may become partners for scaling up and institutionalising this new way of city-making.

One challenge is the exchange of knowledge. Self-builders all face steep learning curves. To some degree they must all reinvent the wheel. Currently, self-builders are sharing information and knowledge via platforms like Facebook,

Whatsapp, various websites, face-to-face conversations and public or closed meetings. This makes it difficult for other people to find existing information and build upon this knowledge. Moreover, similar to open software development, individual experiments and innovations are often not properly documented and non-transferrable. We found that several knowledge gaps exist. One is between advanced and beginning self-builders. Another is between self-builders and (semi-) professionals who have the vocabulary and understand the processes but who have rarely actually built a home from scratch themselves. A third gap exists between self-builders who engage in experiments and institutions who also experiment, like municipal 'team self-building' or public service companies.

Returning to the model described above, we consider a city hackable when there are dynamic and resilient relationships between the three levels. Self-building in Buiksloterham combines these levels. The individual level is made up of self-builders who each acquire their own piece of land, and start 'hacking' on their own home. The collective level consists of those activities and events at the group level that transcend the individual plot. Connections between the individual level and the collective level are forged when people start sharing resources like generic information and specific knowledge about, for instance, dealing with infrastructure companies, to collaboratively start working on public green spaces. When enough people keep sharing, benefits can be reaped individually while still strengthening the commons. The institutional level is composed of the various parties who are responsible for setting the conditions for self-building and providing the infrastructures. Relationships between the collective and institutional levels are based on a reciprocal exchange between providing credible indicators and stories about self-building as a viable alternative to traditional building practises, which in turn may lead to new affordances, frameworks and opportunities for self-builders to go from innovative experiments to upscaling.

3. CONCLUSION AND REFLECTION: HACKABLE CITY MAKING AS AN ALTERNATIVE NARRATIVE FOR URBAN DESIGN

Existing urban systems and infrastructures like water supply, energy provisioning or housing are often characterised by a static division between supplier and buyer. In the hackable city these relationships are rearranged and become more dynamic. The collective level is a crucial hinge in getting the system to move. Digital media technologies help to do so, as tools at the individual level, as new sets of practices at the collective level, and as institutional arrangements.

Hackers are characters who speak to the imagination. The hackable city provides a storyline about urbanites who use digital media technologies to – sometimes against the odds – make their own city. As we have outlined elsewhere (Ampatzidou et al., 2015), the notion bears the suggestion of provocation and friction. Some people will associate hacking with disruptive or even illegal activities. Others will think of a libertarian Silicon Valley ethics of self-governance, own responsibility and technological solutionism. However, many authors have pointed out that hackers often like to work in groups and share their efforts, thus contributing to the common good. The notion of hacking employed here is one that deliberately uses these tensions to hone the discussions about the future of our cities. Who has the right to make the city?

Instead of being a hermetic narrative that offers a singular solution to complex challenges, the story itself is open enough to be 'hacked'. It ties together multiple levels of individual hacker attitude, collective hacker practices, and institutional hackability. It addresses economic challenges (how do we build resilient cities after the financial crisis, what new business models are there), spatial and social questions (how do we deal with cooperative area planning, demographic shifts, new types of communities), cultural

changes (how do we leverage contemporary do-it-yourself culture, the reshuffling of roles between professionals and amateurs) and governance issues (how can we shape the participatory society, what roles are there for institutions). In the hackable city urban designers, institutions and citizens work together to build the city of the future in participatory, innovative and sustainable ways.

The project has been funded by NWO (Netherlands Organisation for Scientific Research). More information is available at: <http://thehackablecity.nl>

BIOGRAPHY

Michiel de Lange (1976) is an Assistant Professor in New Media Studies, Department of Media and Culture Studies, Utrecht University; and co-founder of The Mobile City, a platform for the study of new media and urbanism. He also works as a researcher in the field of (mobile) media, urban culture, identity and play.

Martijn de Waal is a senior researcher at the Lectorate of Play and Civic Media at the Amsterdam University of Applied Sciences. His research focuses on the role of digital media in the urban public sphere. He is the author of *The City as Interface*, and a co-founder of The Mobile City. He is also the project leader for The Hackable City, a research project funded by the Netherlands Organisation for Scientific Research.

REFERENCES

Ampatzidou, C., Bouw, M., van de Klundert, F., de Lange, M. and de Waal, M., 2015. *The Hackable City: A Research Manifesto and Design Toolkit*. Amsterdam: Amsterdam Creative Industries Publishing.

Bouw, M., van de Klundert, F., de Lange, M. and de Waal, M., 2013. *Eindhoven Hackable World City*. Amsterdam.

de Lange, M., de Waal, M., Verhoeff, N., Foth, M. and Brynskov, M., 2015. Digital Cities 9 workshop proposal 'Hackable Cities: From Subversive City Making to Systemic Change' in: *7th International Conference on Communities and Technologies (C&T 2015)*, 27–30 June 2015. Limerick, Ireland: ACM.