



# A LAB OF LABS: METHODS AND APPROACHES FOR A HUMAN-CENTERED DESIGN

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# **A LAB OF LABS:** METHODS AND APPROACHES FOR A HUMAN-CENTERED DESIGN

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Gabriele Ferri & Martijn de Waal (editors)

## COLOPHON

**A Lab of Labs:** Methods and Approaches for a Human-Centered Design

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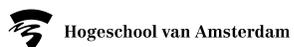
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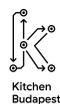
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## PREFACE

As two of the initiators of the Knowledge Mile we were proud to host the Design & The City conference and its 'Lab of Labs' events that laid the foundations for this publication. As you will find in the following pages, both the event itself and this book display(ed) a broad variety of citizen-centered design approaches for the smart city. What makes these approaches stand out is that they have succeeded in combining insights from different disciplines and have also found various ways to engage the multiple stakeholders who are always involved in the pressing urban issues of our time. For us it was one of the projects that really exemplified the initial idea of the Knowledge Mile when we started the initiative in 2015. We wish to thank Martijn de Waal, Gabriele Ferri, their team, and all the contributors and partners for organizing the event and creating this inspiring publication.

Before the start of the Knowledge Mile, we noticed that the area in Amsterdam located between the Amstelplein and Mr. Visserplein was facing a lot of urban challenges, such as high traffic volumes, flooding, and air pollution. At the same time it is home to a world-class knowledge cluster, as it hosts the main campus of the Amsterdam University of Applied Science, the University of Amsterdam's gamma-sciences faculty, and a number of faculties of the Amsterdam University of the Arts.

We started the Knowledge Mile initiative to connect these urban challenges and world-class knowledge with the 30,000 residents, 60,000 students, 200 organizations, hotels, museums, social and municipal institutions that are present in the area. The result is a diverse community that works together to make the area a better place to live, learn and work.

To us, Design & The City and the Lab of Labs showcased how the Knowledge Mile as a living lab was able to connect the city of Amsterdam with leading thinkers and makers from around the world. It showed the potential of the Knowledge Mile to help Amsterdam achieve its goal to become a 'campus for the world': a community that inspires you to take on urban challenges and make your own city a better place.

We hope the ideas in this publication will help you to do so, and we look forward to working with you on projects in the future. Feel free to connect with us and learn more about the Knowledge Mile community on our website at [knowledgemile.amsterdam](http://knowledgemile.amsterdam).

### Geleyn Meijer

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## INTRODUCTION

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In the spring of 2016, the Amsterdam University of Applied Sciences hosted the Design & The City conference. Around 500 participants from all over the world convened to discuss citizen-centered design approaches for the smart city. Which design approaches could contribute to more livable, sustainable and sociable urban communities? How could citizens' perspectives be highlighted in the processes of urban design and city-making? And how could smart city technologies be employed to serve public interests? Those were the main issues addressed during the four-day event that took place at the Knowledge Mile, a field lab in central Amsterdam.

As organizers, we were inspired by broader debates in the field of design, where over the last few years a 'human-centered approach' has been gaining traction.<sup>1</sup> Design, according to this vision, should start from an empathic understanding of citizens and their needs. At Design & The City, we wanted to explore concrete practices of such human-centered design principles. What could such an approach mean in the context of the emerging smart city? How could humans be included as 'actors' in the design process, rather than as mere 'factors'? And what methods could designers use to come to a better understanding of these 'full human beings' and their needs?

To get a deeper understanding of methods for human-centered design, we invited five design and living labs from around the world to host a two-day charrette as part of the Design & The City event. We asked each lab to share their approaches and methods with over fifty partic-

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<sup>1</sup> Brown, T. (2015). *Change by design*. New York: Harper.; IDEO.org (2015). *The Field Guide to Human-Centered Design*. IDEO.

Participants from a broad variety of disciplines and cultural backgrounds. For two days, each lab worked on a local issue. As opposed to a ‘hackathon’ the main goal was not to produce actual solutions; much more time and local stakeholder involvement would have been needed for that. Rather, this event was organized to enable participants to experience, understand and compare different methodologies. It was, as we labeled the charrettes, meant to be a ‘Lab of Labs’, a hands-on opportunity to explore various design methods that each put humans at center stage.

Each of these five labs brought in a unique perspective to bring out a better understanding of the problem space and the various citizens and organizations involved. Fields of View (India) demonstrated a human-centered workshop process based on game-making and game design; Waag Society (the Netherlands) leveraged the power of narrative-based methods; Ralston & Bau / Ideal Lab (Norway/France) focused on fieldwork and empathic dialogue; KiBu (Hungary) demonstrated a mixed-method approach which also considered social media data; and the Centre for Design Informatics (United Kingdom) worked with Design Fiction, Technology Probes and Experience Prototyping.

This book contains a series of reports and reflections on these two intense days. The aim is to inspire not only practicing designers and design researchers, but also citizens participating in ‘living labs’ and prospective clients. We offer these five reports to designers, scholars and educators to broaden their repertoires in teaching and (applied) research. Similarly, we address prospective clients and other stakeholders to give an impression of what a ‘living lab’ approach could produce, and what the process itself could look like.

If there is one thing we learned from these days it was that there is no such a single thing as the living lab, or an essential ‘citizen-centered design’ approach. There is, rather, a broad variety of approaches and methods.<sup>2</sup> Whereas they all take a human-centered perspective, these differences matter in terms of what a designer wants to achieve in a given situation. As we observed at first hand, it is not a question of better or worse but rather a matter of finding the right match between locally set issues, their particular characteristics, and their desired trajectories. For instance, in some cases it might be essential to come to a mutual understanding and consensus between stakeholders in order to gain support for an intervention. In other cases, it might be more important to work towards a viable business model that would support an intervention in the long run. Similarly, there are different ways to record, map, detail, illustrate, probe, explore or provoke the needs, interests, and desires of stakeholders, all of which can be useful depending on the exact situation.

This book is not intended to provide an exhaustive overview of living lab approaches and methodologies, or a set of objective criteria with which to compare or choose between them. Rather, it is an impression of five labs whose approaches we ourselves found inspirational for a va-

<sup>2</sup> Jones, J. C. (1992). *Design Methods*. New York: John Wiley & Sons.

riety of reasons. We hope that documenting their methods and approaches can also form a source of inspiration for the reader, and help designers, researchers, educators and other living lab stakeholders to come to a better understanding of human-centered design and its various methods and approaches.

The Lab of Labs took place at the Knowledge Mile, a field lab in Amsterdam that runs from the Amstelplein to the Mr. Visserplein. The Wibautstraat and Weesperstraat are the two main streets in the center of this area, and also constitute one of Amsterdam’s central axes. Both are well known for the urban challenges they face, such as high traffic volumes, flooding, and air pollution.

The area is also known as a world-class knowledge cluster, as it hosts a campus of the Amsterdam University of Applied Sciences, the University of Amsterdam’s Faculty of Social and Behavioural Sciences and a number of faculties of the Amsterdam University of the Arts. With a community of 30,000 residents, 60,000 students and almost 200 organizations, hotels, museums, social and municipal institutions, The Knowledge Mile has the ambition to improve the quality of life in the area through applied research projects, knowledge sharing, and the facilitation of new connections at its regularly staged meet-ups.

The Knowledge Mile is also a business investment area where all organizations are joining forces to improve the work/life climate in the field of joint investments in communication/marketing, security, viability and physical movement.

[www.knowledgemile.amsterdam](http://www.knowledgemile.amsterdam)

## FROM FACTORS, TO ACTORS, TO HUMANS

Over the last fifteen years, digital technologies have left the office and moved into new contexts. Computers are more portable than ever, smartphones are in almost everyone’s pockets, and smart objects and sensors are becoming widespread across cities. We interact with computers in a variety of situations that are much broader than work, school, and solitary play. Digital technologies are more than ever ‘in the wild’<sup>3</sup>, and have become social, civic, activist, critical, artistic, and more.<sup>4</sup>

If digital technologies are now adopted for more than office work, the people interacting with them are no longer just ‘users’. In the domain of Human-Computer Interaction, we usually refer to the ‘three waves’ of design research. The first focused on human factors and cognitive mod-

<sup>3</sup> Rogers, Y., Connelly, K., Tedesco, L., Hazlewood, W., Kurtz, A., Hall, B., Hursley, J., and Toscos, T. (2007). ‘Why it’s worth the hassle: The value of in-situ studies when designing UbiComp’. *Proceedings of UbiComp 2007*, 336–353.

<sup>4</sup> Gordon, E, Mihailidis, P. (eds.) (2016). *Civic Media: Technology, Design, Practice*. Cambridge, MA: MIT Press; Murray, J. (2011). *Inventing the Medium: Principles of Interaction Design as a Cultural Practice*. Cambridge, MA: MIT Press; Flanagan, M. (2009). *Critical Play: Radical Game Design*. Cambridge MA: MIT Press; Foth, M. et al. (eds). (2011). *From Social Butterfly to Engaged Citizen: Urban Informatics, Social Media, Ubiquitous Computing, and Mobile Technology to Support Citizen Engagement*. Cambridge MA: MIT Press.

els, and saw human beings as subjects to be regulated through rigid, efficient guidelines. An airplane pilot in a cockpit is a prototypical example of a ‘first wave’ approach: a user whose potential mistakes must be prevented as far as possible. The ‘second wave’ of HCI design research focused on collaboration and group work: humans were seen as more situated actors, often working in teams, relying on technology to facilitate many activities. In the last decade we have seen the rise of ‘third wave’ of design research. As Bødker recently synthesized:

“the use contexts and application types broadened, and intermixed, relative to the second wave’s focus on work. Technology spread from the workplace to our homes and everyday lives and culture. Research in the third wave challenged the values related to technology in the second wave (e.g. efficiency) and embraced experience and meaning-making.”<sup>5</sup>

Today, Bødker’s third wave is visible in various design approaches that argue for putting humans at the very center of the design process. The globally operating design firm IDEO, for instance, has popularized the expression ‘human-centered design’. In the Lab of Labs, we adopted a similar third-wave position that also takes culture, emotions, playfulness, and civic engagement into account. Designers working in this field no longer understand the subjects of their work as mere ‘users’ – individuals who need to perform a single specific task in an isolated situation, for which the designer will provide a solution. Rather, designers have started to consider their subjects as ‘full human beings’; as citizens, consumers, family members, political constituents, lovers, entrepreneurs, etc., situated within particular social, cultural and economic contexts that need to be taken into account. Similarly, in this approach, the problem space designers work in is no longer isolated, but seen as part of a larger, complex world, often full of wicked problems, and populated by a broad variety of stakeholders with equally varying interests. A human-centered design is intrinsically participatory and collective: ‘people who face [...] problems every day are the ones who hold the key to their answer.’<sup>6</sup>

This shift in perspective has brought about a whole new set of questions. What exactly does it mean to design for ‘full human beings’? How can we come to a thorough understanding of their affinities, interests, needs, world views, wishes, fears, dreams and so on? Moreover, how do we work together with them? Third-wave design, after all, means that designers do not just invite the-people-formerly-known-as-users into their solution spaces, and have them test the probes they have come up with. Instead, they should start by including them in the very definition of the problem space. What exactly are the issues that need to be tackled, and what parties have an interest in that issue? In which direction would they want to take these issues? In addition, it does not take a giant leap of imagination to see that the answers to these questions lie not just in a search for new methods, but also in a new understanding of the role of the designer.

<sup>5</sup> Bødker, S. (2015). ‘Third-wave HCI, 10 years later – Participation and sharing’. *Interactions* XXII.

5 September-October, 24.

<sup>6</sup> IDEO.org (2015). *The Field Guide to Human-Centered Design*. IDEO. Retrieved from [www.designkit.org/resources/1](http://www.designkit.org/resources/1).

## WHAT KIND OF SMART CITY DO WE WANT TO LIVE IN?

These questions have become all the more relevant in the context of the new, possibly disruptive digital products and services that have sprung from incubators and start-ups in Silicon Valley and research labs around the world. Since the early 2000s, the term ‘Smart City’ has been broadly adopted as a popular label to identify and cluster technology-driven approaches to urban development and renewal. Bowerman et al. characterize smart cities through their ‘use of advanced, integrated materials, sensors, electronics, and networks which are interfaced with computerized systems comprised of databases, tracking, and decision-making algorithms.’<sup>7</sup>



On paper, at least, smart cities seem like the perfect setting for third-wave HCI design: we are promised ubiquitous technologies and seamless interactions, as well as civic platforms for citizens to self-organize. But is this really the case? As DiSalvo and colleagues have recently suggested, this technological push for smart cities may very well be pointing us in the wrong direction.<sup>8</sup> Instead, they suggest, we should leverage smart technologies to frame and understand our issues, rather than trying to simply solve them.

The traditional ‘smart city’ approach becomes even more problematic when these smart city platforms, including their machine learning algorithms and artificial intelligence, may truly shape-shift our world and bring about new forms for the ways we organize labor or receive

<sup>7</sup> Bowerman, B., Braverman, J., Taylor, J., Todosow, H., Von Wimmersperg, U. (2000). ‘The Vision of a Smart City’. *2nd International Life Extension Technology Workshop*, 48–58.

<sup>8</sup> DiSalvo, Carl et al. (2014). ‘Making Public Things’. *Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems - CHI ’14*, 2397–2406.

information, the ways we share and organize our communal resources, how we live together in our cities, how we are governed, and how we hold those in power accountable. What we truly need to address in these deep shifts at the level of society is a perspective and an action horizon for a citizen-centered smart city.

After all, in a human-centered approach, citizens should not simply be confronted with the ‘creative destruction’ or ‘disruption’ caused by the design of new digital technologies. Ideally, citizens should participate from the beginning, discussing the world they would want to live in, and the roles new technologies could play in it. To paraphrase the former French president De Gaulle: the design of the smart city of the future is too serious a matter to leave to technologists and designers alone. Here, we truly need a participatory approach. But how do we put that to work?

### LIVING LABS

We found a first set of answers to all these issues in the ‘living labs’ that have sprung up over all Europe and the rest of the world in the last five years or so. Although there are many definitions of a living lab, they usually have two aspects in common. First, they take a position of radical co-creation, in which citizens are involved from the earliest stages of the design process; from the definition of the issue and the mapping of stakeholders, to brainstorming about solutions and the building and testing of prototypes, usually in an iterative process. Second, these living labs usually deploy these strategies on site in the ‘real world’ with all its messy every-day-life kind of entanglements, rather than in the controlled environment of the research lab.<sup>9</sup>

Nevertheless, the exact ways in which these labs work varies widely. They employ different methods, and all bring their own perspective to a case. One lab may be predicated on a building consensus amongst stakeholders, and use a game design methodology. Another lab might focus on the economic viability of a proposed solution, adopting a social entrepreneurship perspective. A third may work with personas, constructing narratives around them to come up with design solutions. A fourth may include digital methods. A fifth may specialize in provoking discussions about the possible futures we would want to live in. A lab, then, can be understood as an institution or group of persons working with a specific, curated set of methods, deployed from a particular perspective. It is that combination of sets of methods and perspectives that provides labs with their unique identities.

As researchers working at the Amsterdam University of Applied Sciences, a university that aims to ‘create tomorrow’ and to help future professionals find new methods and roles to tackle societal problems, we have found the approaches of living labs very enriching. They contribute to a movement in our institution that is already well on its way. For instance, our MediaLAB Amsterdam tackles issues through multi-disciplinary teams and has constructed a Design Methods

<sup>9</sup> See Garcia Robles, Ana, Tulja Hirvikoski, Dimitri Schuurman and Lorna Stokes (2015). Introducing ENoLL and its Living Lab Community. Brussels: European Network of Living Labs for more about living labs. Brussels: ENoLL.

Toolkit that has been used by schools and professionals around the world.<sup>10</sup> Somewhat similarly, in the Fieldlabs organized by our institution’s Urban Management group, multi-stakeholder groups regularly tackle everyday problems in the boroughs of Amsterdam.

Of specific interest is the Knowledge Mile, a field lab centered around the Wibautstraat and Weesperstraat, one of the central axes in Amsterdam. On the Knowledge Mile numerous companies, NGOs, local governments, schools, and universities are working together to exchange knowledge and test solutions to locally defined issues such as the greening of the city, air quality, and the future of work.

That this kind of cooperation could go a long way is something we experienced ourselves in April 2016 when The Knowledge Mile hosted the Design & The City conference and for two days was turned into a ‘Lab of Labs.’ During that event, five leading labs from around the world demonstrated their various human-centered design approaches. We hope that you will be as inspired by this report as were the participants in the Lab of Labs event, and that it will bring you new perspectives on methods and approaches for human-centered design.

Martijn de Waal  
Gabriele Ferri

### For more information see:

[www.designandthecity.eu](http://www.designandthecity.eu)

[www.playandcivicmedia.nl](http://www.playandcivicmedia.nl)

[www.amsterdamuas.com](http://www.amsterdamuas.com)

[www.knowledgemile.amsterdam](http://www.knowledgemile.amsterdam)

<sup>10</sup> An online version of this toolkit can be found at [medialabamsterdam.com/toolkit/](http://medialabamsterdam.com/toolkit/).



# WAAG SOCIETY

## DESIGNING INCLUSIVE INTERACTIONS

By **Mattia Thibault & Gabriele Ferri**

Waag Society

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Amsterdam, The Netherlands

**USING NARRATIVE AND ROLE-PLAYING TO BETTER UNDERSTAND USERS' PERSPECTIVES**

### THE LAB

Waag Society is a Dutch institute for art, science, and technology that had its start in the Digital City of Amsterdam in 1994. It is an interdisciplinary non-profit media lab that aims to understand and reflect on the role of technology in society through artistic research, critical and speculative design, and social innovation. Within interdisciplinary teams and in close co-operation with end-users, Waag Society develops technological artifacts and offers creative spaces that enable people to express themselves, connect with each other, and reflect upon the society they live in. Its overall mission is to create and question technology, not in a top-down way but 'always with users'.

Waag Society's activities are organized into a number of themed labs such as the Creative Care Lab, the Future Heritage Lab, the Open Design Lab and the Smart Citizens Lab. Each lab consists

of a group of leading researchers, designers and developers organized around a research subject related to relevant social developments.

Waag Society's primary activity is Creative Research: experimental, multidisciplinary research that puts artists and users at the heart of development, giving all of them a stake in the end result. Creative research is articulated along three lines: form research, transformation research, and context research. Form research involves experiments with structures, forms, materials and ideas, and aims to create new opportunities. It consists of tinkering and experimenting with technologies, not necessarily with a given societal purpose. Context research aims to take the next step: together with prospective users, new technologies are used to develop and validate new prototypes, services or practices. Finally, transformation research takes what has been developed in context research and implements it in the real world, either by incubation, sharing, disseminating, or educating. Most of Waag Society's research is focused on context research, operating at two levels: researchers explore the actual applications of new technologies, while at the same time putting the implications of new technologies in society up for debate.

For its research trajectories Waag Society has developed its own co-design methodology, called 'Users as designers'. It is based on the idea that involving users directly throughout the design and development process helps developers to build a connection with them and to understand how a person might feel about using a specific product or service.

The design process itself goes through an elaborate process of 'questioning the question' (Ask), thinking through making (Make), and testing and evaluating (Try). For each phase Waag Society has developed a number of design tools, such as 'empathic conversations' and the use of narratives and role-playing to get a better understanding of the issue at hand and the perspective of the various people involved. In the Make phase Waag Society encourages participants to visualize and prototype ideas as early as possible to test them. This is particularly important, as visualizing and prototyping forces participants to be as concrete as possible, discussing which features and their underlying values should be prioritized.

## THE CHARRETTE

How can urban public spaces such as Amsterdam's Nieuwmarkt square be made more inclusive? That was the main issue at the charrette organized by Waag Society. Over two days Paulien Melis, Janine Huizenga, and Hester van Zuthem focused on two approaches that are central to Waag Society's design approach, which aims to involve citizens in urban issues: 'everyday life ethnography' and 'design through speculation'. The first relies on qualitative methodologies to build a well-rounded 'model user' to design for: specifically, the charrette demonstrated a

quick and effective process by which to develop a set of personas.<sup>1</sup> The latter, speculation, refers to a form of inquiry that does not immediately aim to produce actual artifacts: its purpose is to be thought-provoking and to spur critical reflection on issues of social interest.

The two key elements we want to emphasize here are the creation of believable and productive personas, and the use of speculative and provocative concepts side-by-side with everyday reality to inspire a different perspective on designing for participation and inclusion. Taken together they demonstrate how storytelling and speculation can constitute rapid and efficient tools to engage citizens in urban design and make cities more inclusive.

## 'DESIGNING INCLUSIVE INTERACTIONS'

Cities are prime spaces for human interaction, born of the superimposition of paths, practices and meaningful artifacts. Interaction is never neutral, and design can and should do its part to make cities more inclusive: empowering citizens also means providing inclusive public spaces, and this is particularly necessary for those who are marginalized because of age, cultural background, health conditions, or cognitive or physical abilities. The ideas of inclusiveness, empowerment, and transparency were the starting points of this charrette. These are important but nevertheless rather vague concepts that are difficult to make tractable, to frame, and ultimately to design for. We present an extract from Waag Society's methodology, and exemplify a sequence of design research methods that may be used to transition from abstract, general ideas (e.g. 'inclusion') to specific and concrete design concepts. The whole process was located in a specific urban area – Nieuwmarkt square, in central Amsterdam – and, as we will see, the methods proceeded from the abstract to the more concrete, with the objective of 'seeing the design problem through the eyes of Nieuwmarkt's inhabitants'. To pursue these objectives, a specific sequence of methods (Value ladder, Personas, Story puzzle, Lo-fi prototyping) was demonstrated, and what follows constitutes a synthetic overview of the proposed methodology.

## VALUE LADDER & STORY PUZZLE

The objective of a 'Value ladder' is to tease out how design is not ideologically neutral, while at the same time building a common language shared by the members of the group. Each participant writes down five core values (e.g. 'trust'), deemed important for the specific theme addressed – in our particular case, 'inclusiveness in public spaces'. Participants are then organized first in couples and then in groups, with the task of creating a list of values common to all of them. At each iteration the values not agreed upon by all participants are shed, until each group clusters only five of them, which are then shared and discussed with the whole charrette. Such value ladders provide design teams with a common understanding and semi-structured format for arranging value-related maps.

The second task involves the creation of Personas, which are abstractions of real people in general forms on the basis of social, economic and cultural research into a group of users. For the specific charrette conducted by Waag Society, the personas developed were based on qualitative impressions from the participants' observations of social practices taking place in Nieuwmarkt square. Each group invented a character – with details such as a name, a backsto-

<sup>1</sup> Nielsen, L. (2012). *Personas - User Focused Design*. Vol. 15. Springer Science & Business Media; Hanington, B., Martin, B. (2012). *Universal Methods of Design*. Beverly, MA: Rockport Publishers.

ry, and passions – following a standard schema. As an element of ‘playful performance’, a pair of cardboard glasses were provided to participants to wear when ‘speaking from the persona’s perspective’, to signify that the designers were trying to see the world through other eyes, being aware of different points of view, and stepping out of their own comfort zone.

The next task for each group was to imagine a whole day in the persona’s life: their interactions, goals, and the barriers they encounter. Maps, props and small objects (stars, pieces of wood, toy animals...) enabled participants to point at a variety of locations in public space, each with its own positive and negative connotations. In this sense, barriers are not only negative but also potentially innovative.

The Story puzzle, an original creation by the Waag Society, is a follow-up method to the development of personas, enabling designers to delve deeper into their characterization. It is a wooden jigsaw puzzle composed of pieces with simple icons – actors (male, female, couples, seniors...), objects (bikes, flowers...) or abstract elements (question marks, battery icons...). Designers can freely add their own symbols using Post-it notes. The jigsaw shape allows the creation of different configurations (circular, linear, branches, labyrinth...), and icons, purposely vague, are more open than words and therefore leave more space for interpretation and creativity.

Participants combined the pieces of the Story puzzle, creating short narratives about their persona, and explored a variety of possible design solutions. In concrete, each group identified barriers – physical or metaphorical – around the Nieuwmarkt that were preventing personas from reaching their goals, and brainstormed about possible solutions, with the help of the puzzle pieces.

In conclusion, each group was tasked to create a Low-Fidelity prototype of a proposed solution that would address the issues of their personas, using a selection of craft material. This marked the moment in which the participants’ speculative proposals were made more tangible, transitioning from simple storytelling into material artifacts, although quite simplified. It is clear that Lo-fi prototypes are not the end point of Waag Society’s methodology, but provide a valuable opportunity for it to be evaluated by users and experts.

Participants in the charrette crafted a variety of lo-fi prototypes. Among these the ‘Peer to Peer Plaza Project (4P)’ was a proposition for an informal, ad hoc network of citizens sharing basic services – such as the possibility of charging one’s phone battery, or to use the restroom at a nearby café. The 4P would be physically situated in the Nieuwmarkt, with solar-powered kiosks using sensors and Internet-of-Things technologies, collecting crowd-sourced resources, and functioning as hubs for a variety of bottom-up initiatives. All the proposed speculations were ‘tested’ through role-playing, with one or more participants of other groups acting as the personas and commenting on the solutions presented to them.

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## INTERVIEW

**Waag Society has a long history of organizing design workshops. Did this design charrette follow your usual process, or was your methodology adapted in any way?**

As always, we aimed to tap into all the participants’ backgrounds, and got them involved in the process of creating a solution or a design for a specific area, with a mixture of hands-on, reflective, and conceptual methods. We promoted collective work, always asking for some interaction between at least two team members to ideate, push concepts back and forth, improving them and making them stronger. One of the elements that we try to keep constant in all our workshops is that each participant should ‘contribute back’ to the whole group. For this reason, after each exercise there is a short presentation, and people should give feedback to each other so that they are all connected to each other’s topics, they know what everyone is working on, and the groups are not isolated.

The process we follow is essentially constant most of the time, but we tend to adapt it into specific workshop formats. For example, we really like the ‘values ladder’ and ‘story puzzle’ methods, as they are very good icebreakers. We try to use them in every workshop that is at least one day long – in shorter ones it would still be feasible, but with some time pressure. Time pressure also dictated our choice of developing personas or portraits: in two days, one can go only so much in-depth in your user study, and we chose to push the design process instead. If we had more time available, maybe we would have chosen a different workshop format. On the other hand, the tangible prototyping exercise (‘lo-fi prototyping’) does not appear in all our workshops, as sometimes we work with groups that do not actually need it. In the case of this specific charrette, it was useful to combine it with the story puzzle to let participants dive deeper into concept development. To sum up, I would say that the overall Waag Society’s process and philosophy remain constant, and we have a set of different workshop formats that we can pick and adjust to the topic at hand.

**You mentioned materiality being part of Waag Society’s process. What led you to include physical prototyping methods in this charrette?**

Yes, as a general philosophy, we always use some ways of materializing ideas. In this specific case, we played not only with the ‘story puzzle’ but also with small props, scrap materials, paper, Post-its, and markers. Making things physical is an enabler for generating solutions, and having something tangible to point at when discussing is quite helpful for teams to coordinate better. People can ideate and be philosophical about their process as much as they want, but when they transform ideas into tangible objects, they face the necessity to make hard choices. A physical object cannot be too many things at the same time: it has a particular shape, a certain weight, and so on. Even if it may be frustrating sometimes, it makes concepts come alive and requires some definitive decisions from the design teams.

**How did you model and conceptualize potential users and stakeholders?**

Understanding our users is the central idea of how we execute projects at Waag Society. We

always start with end users, and you need to get a good idea of who they are and, among other vital parameters, what are their needs, ambitions, their activities in day-to-day life, and the barriers they encounter every day. For us, it is always good to keep very near the person we design for. I do think that the end user should always be in the designer's mind. Because otherwise, one would be designing for oneself, which can be fun but not productive. Instead, to address bigger societal challenges, designers should have a clear idea of the actual people they are designing for. That said, there was limited time during the charrette at Design & the City, and we could not actually interview people on the street, so we presented our participants with some personas.

**Speaking of personas, did the charrette organizers or the participants themselves develop them?**

Both. We listed a few typical uses of Nieuwmarkt square – the public space we were addressing – to begin framing our end-users. The various groups of participants could choose their target group themselves. So I would say that developing personas was a shared responsibility, where we gave the initial prompts and our participants refined them through observation and role-playing. We placed particular emphasis on roleplay, also using special props to facilitate immersion.

However, in hindsight, I wish we had made role-playing even more central. For example, a group of participants focusing on ageing citizens observed a senior woman with a stroller, and they immediately framed her situation as if she was having troubles, and that led to the development of a persona with mobility issues. With more in-depth role-playing exercises, they might have realized that she might have been perfectly fine. They, as designers, framed that as a dangerous situation to solve, and they had a hard time letting it go. Instead, the back-and-forth between personas and role-play can be quite productive, especially in longer projects.

**Playfulness is a characteristic that was common to all the charrettes of the Lab of Labs. How was play articulated in your group?**

Being playful is, overall, what we try to do. In this case, I can see three ways in which we used play in our process. The first is maybe the most intuitive: we tried to foster a friendly, safe, informal atmosphere during the workshop. Secondly, it is also a question of proposing and trying out different activities: we wanted to give participants new challenges that make them intrigued and well-disposed to explore. Finally, we used not only methods such as the 'story puzzle' which may be small games by themselves, but also toys and craft materials for open-ended physical prototyping in a context that promotes a playful attitude.

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**ANALYSIS**

Below the surface, we can point towards two crucial common threads that crossed many activities that characterized the Waag Society charrette: narrative and play. To bring their characteristics into focus and to understand better their interplay with different design methodologies, we need to take a step back and reflect on play and narrative from a more abstract perspective.

These two phenomena are united by their ability to structure events according to an axis of process: in other words, they give a direction to human activities both in time and in space. Post-structuralism has already proposed how the ability to think at a meta-level may help us to make sense of a complex world. In this sense, Waag Society has offered methods based on storytelling and playfulness as ways to reflect on social issues (meta-reflection) and to prompt design speculations. To exemplify and explain this, let us now return to what happened in practice during the charrette. Waag Society made extensive use of narrative, and in a variety of ways. First of all, it was an asset used to define the organizers' identity, which was also introduced to the participants through a collection of anecdotes from the history of the Waag building itself to the development of Waag Society. The values of openness, transparency, and co-creation were teased out by the charrette leaders from the heritage of the Waag building, ideally linked to the Waag Society, and offered to the workshop participants as a means to frame and contextualize the open, inclusive process they were about to take part in.



However, this is not the only way in which narratives and stories were leveraged. Even more interestingly, the design methods for creating a persona were also intrinsically narrative. Personas are fictional characters (and not simple average users deduced from statistics) that are implemented in a narrative context through the act of storytelling. The designers taking part in the charrette imagined a day in their personas' lives, bringing to the forefront the obstacles that hinder their goals. After imagining a story and outlining the 'opponents', they ideated and sketched solutions to help their personas overcome the imagined obstacles.

If we step back to a more general level, we observe designers creating a model of reality, and using it as a setting for a narrative. In such a fictional (and therefore more tractable) world, they are able to act freely according to their creativity and to change at will the conditions of the environment to modify the possible outcomes of their narration. Storytelling, we may say, is used to create a sandbox, a safe space to freely experiment in with different solutions. It is to be noted that, even if in this case the fictional element was particularly evident (as the personas were

mainly based on the participants' imagination), the narrative nature of this practice does not fade when the personas are based on real data.

The Story puzzle method demonstrated in this charrette also deals with narrative from yet another point of view. Despite its name, it is not used to create a narrative but, in a certain sense, to translate it. With that in mind, let's have another look at the narratives created when designers imagined one day in their personas' lives: with the Story puzzle method, it is translated into a different 'language', which is a discourse composed of interlocking icons that can be arranged in many patterns to form different utterances. This translation is simultaneously imprecise and productive: a narrative changes and adapts to the constraints of the new language, forcing the designers to be inventive, to leave their comfort zones, and to improvise new solutions – thus opening up new creative spaces of opportunities for design.

Play and playfulness were also widely used by the charrette leaders of Waag Society, both as a design tool and as an icebreaker technique for the workshop. Several activities employed different forms of play: for instance, participants were often asked to put themselves in their personas' shoes, to 'see through their eyes' (represented by cardboard glasses) – and, in the testing phase, some of the participants actually acted their parts. These are all forms of role play, used also in psychology as an effective way of creating empathy and experiencing different points of view. The Story puzzle, on the other hand, leverages the recombinational potential of ordinary jigsaw puzzles to offer the designers a material structure to support their creativity. Also, the prototyping phase involved lots of toy play: participants did not create 'real' prototypes, but toy versions of them, replicas of what the real things might look like. Finally, during the conclusive testing phase, all this came together as participants were cast in the role of their personas (role playing) and 'played' with the Lo-fi prototypes as if they were real.

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### IN CONCLUSION

Let us go back to play and narrative. From a design perspective they both contribute to creating and interacting with a fictional world. A world that, although remarkably similar to the real one, allows designers great freedom to change, modify and re-imagine it. They create a space of agency that, although fictional, can lead to very real design solutions. During the Waag Society charrette, it was interesting to notice how intuitively the participants got involved in their fictional worlds and narrations: the different groups often imagined the personas to be 'friends' with each other, or fantasized about them meeting in the neighborhood. Some caution should also be in order, then: imagination risks leading designers too far away from the real situations they are dealing with.

In sum, play and narrative can motivate designers and create a sense of engagement. Charrette leaders Paulien Melis, Janine Huizenga, and Hester van Zuthem argued that they leverage playfulness, as 'everybody knows how to play', and participants immediately took off their jackets and sat on the floor to make their models with joy. As we have seen, playfulness and storytelling are particularly useful as they prevent over-analysis, keep people focused through better engagement, and boost the stamina of designers/participants/players.



## IDEAL LAB: ROOTS AND IDENTITIES

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**“WE DON'T DESIGN FOR PERSONAS, WE DESIGN FOR PEOPLE”**

### THE LAB

The Ideal Lab is a 'research through design' program that focuses on social issues. It was founded by Birgitta Ralston and Alexandre Bau and launched in 2010. The goal of the Ideal Lab program is to define the upcoming needs of local communities and to develop future scenarios through the design of tangible products and processes. For instance, in the Ideal Lab program on the theme of 'Empathic Home' carried out in 2014, participants mapped the current and future housing, living, and working circumstances in the Norwegian community of Dale i Sunnfjord. Part of this process consisted of the design of a number of physical installations in public space as well as artistic performances that embodied or provoked discussions about the future development of working and living spaces and the underlying values that should be articulated in their design.

Trying to understand the intricate networks of local identities in connection to places or communities is an essential aspect of The Ideal Lab approach. Identities are often composite and,

especially in larger cities, created by accumulating many social, cultural and historical contributions. It is these composite complexities that Ideal Lab wants to investigate, connecting them to particular design themes and challenges. As the sociologist Laurent Chambon wrote to contextualize Ideal Lab's explorations,

'(identity) is essential for forming a community, be it religious, national, local, sexual, racial or artistic. What makes an identity interesting is that it is, in fact, a combination of multiple identities that are unique to each one of us and resembles a toolbox. [...] It allows us to find a similarity with other people and create a connection, an identified community, even if it is a superficial and momentary one. Some can use their identity to exclude, but the traveler knows it is more useful to use the identity that includes.'<sup>1</sup>



The Ideal Lab program is organized in year-long cycles on particular themes. These cycles consist of various rounds of workshops and interventions. In these workshops, creative agents with different professional backgrounds such as arts, science, and design are invited to work with the local community. These agents do not receive any predefined goal or product to work towards. Agents are free to select which areas they want to investigate further in relation to the theme, and which goals or results they want to work towards. They are encouraged to explore the theme in an investigative and process-oriented way, always in close collaboration with the users and the environment. As such, Ideal Lab has found a unique methodology to build scenarios around future social issues, centered around the making of design artifacts that in turn build upon or bring into question the intricate 'roots and identities' of local communities.

**THE CHARRETTE**

For the Amsterdam-based charrette, Ideal Lab principals Birgitta Ralston and Alexandre Bau encouraged participants to collect, tease out and curate the many cultural, social and historical

<sup>1</sup> Chambon, L. (2015). 'Replanted Identity'. Ideal Lab, *Replanted Identity*. Transplant.

strands of local identities of people living, working or visiting at the Knowledge Mile. These were to be explored by developing design concepts and scenarios for interventions in public spaces. The goal of this approach was to critically examine the processes of 'place-making' and 'identity-making' in Amsterdam's Knowledge Mile. Whereas the main streets (Wibautstraat, Weesperstraat, and Sint Antoniesbreestraat) of this area are familiar to the locals, the notion of the Knowledge Mile is in a strange limbo: well known to the institutional stakeholders supporting it, but sometimes obscure to those who live in the area. For these reasons, the charrette focused on discovering and understanding the identities of some local inhabitants. These could consequently be used as a starting point to reflect on the further development of a collective local identity for the Knowledge Mile.

Central to the approach was the Ideal Lab principle that real humans are too complex to be abstracted and simplified in arbitrary schemas. Ralston & Bau therefore rely on qualitative methods, such as interviews, in-person observations, and storytelling. This methodology brings empathic face-to-face dialogue to the forefront, with the objective of collecting the surprising inspiration offered by the direct and open interaction with 'flesh-and-blood' stakeholders.

The charrette started with an overview of a number of these methods (interviews, storytelling and story-gathering, visualization, physical prototyping...). They were intentionally presented in an open manner, left to be interpreted and adapted. In other words, the Ideal Lab's process embraces openness; it does not prescribe a strict sequence of steps but a flexible approach that should be adapted to the specific circumstances. Ralston & Bau encourage designers to immerse in a physical and social environment 'as a blank slate', and to react creatively to the inputs gathered from their informants.

**EMPATHIC FACE-TO-FACE DIALOGUE**

The first step involved a physical exploration of the Knowledge Mile, and the collection of local stories and qualitative insights through interviews. The group was split into two teams, and each team was briefed on interview techniques. Practical tips were provided, with Ralston & Bau underlining the need to establish an empathic relationship with the interviewee. In other words, the Ideal Lab's perspective frames dialogue not as a way to validate specific assumptions but as a means to 'take a walk in someone else's shoes'. Questions should not sound like a checklist ("What do you think of this? How would you rate that?"), but open and non-leading prompts, such as "Tell me a story about you and this place." Charrette participants were directed to ask interviewees for narratives, to pay particular attention to the physical places mentioned in the narratives, and to note which connotations were attached to them. They also took a picture – a portrait of sorts – of each of their interviewees. This approach ensured that the interviews did not follow a preconstructed, cold and rigid script, but instead enabled the interviewees to present their personal experience. Students, shop owners, migrants, young parents, and a local policeman were among the inhabitants of the Knowledge Mile with whom the charrette participants spent their time.

After half a day spent 'in the field' to observe, interview and gather stories, the participants regrouped. Photos were printed out and put on display in the meeting room where the charrette took place, to remind participants that the insights came from actual 'flesh-and-blood' humans, and to avoid stereotypical assumptions. Having photos of actual people, explained Ralston & Bau, helps us to empathize more easily. Each team presented their interviews and pictures to the rest of the group. While the contents of the various conversations were recounted, the others were tasked with isolating significant elements by writing them down on Post-it notes. Once again, this method of collective annotation was left open, and participants were free to focus on broad thematic elements (e.g., 'gentrification'), more specific narrative parts (e.g. 'the owner of an art gallery cannot live in the neighborhood any more because of rising costs'), or more minute components (e.g., the idea of 'being snobbish').

### AFFINITY DIAGRAMS: WHAT IS NOT THERE?

All these elements were first arranged separately, constructing a shared interpretation of each interviewee's story, and then clustered together in one big affinity diagram. With this 'gentle' approach to interviewing, stakeholders' needs and desires emerged naturally from the stories told and recorded. Rather than gathering structured interviews, charrette participants collected and curated local stories, giving interviewees time to speak and not pressing them on specific topics. Gentrification, the tension between newcomers and 'born-and-raised Amsterdammers', the cost of living, and the idea of real/virtual boundaries were among the most frequent themes. The Post-it notes composing the affinity diagram were grouped and regrouped by the team members in a seemingly unstructured way: participants began "to play a bit with these themes, sometimes turning them on their head", as one recalled in the final presentation. The charrette leader asked to focus not only on the existing elements but also on what was not there. For instance, most narratives about gentrification focused on the cost of living as a negative aspect, but tended to overlook why new people were arriving in the neighborhood and how they could also constitute a resource.

Finally, building upon these apparently conflicting narratives, participants were tasked to materialize design ideas. Two speculative scenarios, 'Movable Knowledge Bazaar' and 'Imaginary Lines', were presented as conclusions to this process. In the Ideal Lab's approach, scenarios are understood as a step located between the initial exploration and the final prototyping phase when concrete artifacts are created. The Movable Knowledge Bazaar imagines a temporary complex of boats, street carts, stands and speakers' corners in which various people can exchange their knowledge, varying from academic insights to practical knowledge about everyday life in the area. Participants to the charrette envisioned the Bazaar as a temporary event, scheduled to appear in various places of the Knowledge Mile's canals and on the Amstel River. They proposed to use it as a place for socializing, storytelling, and knowledge sharing.

Imaginary Lines is a speculative idea comprising a special marker that can draw lines visible only through a corresponding set of glasses. By being able to draw ad-hoc boundaries, citizens could rezone the neighborhood for themselves, reclaiming spaces, and creating new oppor-

tunities for socializing at overlaps between different areas. The Movable Knowledge Bazaar and Imaginary Lines are not 'solutions' in themselves, but rather 'tools to think with', ways of materializing the qualitative insights and ideas gathered during the charrette. They can also be thought of as tools that designers can use to bring out issues and provoke in-depth discussions that help to define the problem space, as well as leading to a broad variety of ideas and scenarios that could be taken up later on in the design process. We will return on the characteristics of this approach and the usefulness of its design methods in the analysis section.

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## INTERVIEW

### As practitioners and the initiators and practitioners of the Ideal Lab research program, how would you describe your process? Was it adapted in any way for this charrette at Design & The City?

In our professional practice at Ralston & Bau, we follow what we call an 'Ideal Design Process', and what we demonstrated in our Design & the City charrette is two parts of it. The Ideal Design includes the empathic approach of Design Thinking, a scenario building method, and placing the project in a big picture context, with particular attention to crafting, form-giving, and physical modeling. After all, we design furniture and other objects! The cues for the final products can be found in all steps of the process, so we work on shapes, aesthetics and other design elements as soon as possible; at the same time, we meet as many stakeholders as we can. These two parts, designing and interviewing, feed into each other and, in our experience, are very productive for generating concepts.

While Ideal Design is the overall process we follow in our profession, for this specific charrette we teased out Design Thinking methods and the scenario-building part. In brief, we gave our participants the task of collecting and curating local stories related to the identities of people living in the Knowledge Mile. This allowed the groups to gather a considerable number of insights, which were later formalized and made a bit more tractable through some fairly standard Design Thinking exercises, such as affinity diagrams. In the end, the participants generated complex scenarios describing not just one artifact, but how several of them could work as a system, connected with other objects, places, and social actors. And for this last stage of scenario-building, we made sure to have craft supplies – such as cardboard, glue, and twine – ready at hand to make the participants' creativity immediately physical.

In general, we think that Design Thinking and other human-centered methodologies are very relevant for complex contexts such as cities, but we also wish they would be even more 'designerly'. A clear design-related sensibility all through the process – thinking about shapes, aesthetics, forms, functions – with an empathic attitude, make the final designs really connect with the stakeholders. We feel the need for a broader system, so in the Ideal Design process we start by placing the task in a Big Picture perspective and asking ourselves: "How does our mission relate and connect to the world and become a beneficial ingredient in the eco-system?"

**Using a playful approach seemed to be a shared characteristic of many of the charrettes at Design & The City. How would you describe your relationship with games and play in the context of design processes?**

We work as a couple, but Alex is often the disruptive element while Birgitta has a more structured approach to playfulness. Sometimes we forget that humans are animals that learn a lot by playing. As designers and organizers researching into initiatives such as Ideal Lab, our job is to get people out of their comfort zone as quickly as possible. To do so, we rely on humor, on making people laugh, and also on telling stories. It is a bit of a cliché, but one does not solve a problem with the same state of mind that created it. This tells us that if we leave people in their usual context, we might not get good results design-wise.

One thing we often do is ask people to stand up and come together to discuss things. In every group there are social dynamics at work – someone is the disruptor, someone else the skeptic, and so on – and by experience we have found that if one asks people to stand up, mingle, be a bit silly, those social barriers come down.

**During the final presentation of the outcomes of all the charrettes, there was a clear division between the teams who developed personas and other abstractions, and those who relied on more empirical observations. What did your participants do to understand and represent your potential users?**

We made a very conscious choice to not develop personas in our process, foregrounding instead interviews and in-person explorations of the neighborhood around us. If we wanted to sum it up in a slogan, we could say that there is nothing stranger and more interesting than real life. For this reason, we asked our participants to focus primarily on meeting strangers, having long conversations with them, and reporting back to the whole groups. Reality is amazing. One just cannot imagine and artificially construct the diversity of reality. So, when designers meet actual people and succeed in getting to know their underlying emotional motivations and their story overall, most of the time it will be quite surprising and inspiring.

Another reason we did not develop personas is the risk of introducing involuntary bias. Personas are stereotypes to fantasize with, but they are shaped only by the experience of those developing them. For this reason, they might often reflect the understanding that someone already has of a specific group of people. For example, we were recently at another workshop and saw several groups of young designers develop at least one senior persona; they had mostly negative connotations. Whereas – who knows – some seniors might very well be quite happy and live an unconventional life.

**Did your charrette make also use of physical or material elements, in addition to digital ones?**

Yes, we indeed used almost only non-digital tools, if you exclude cameras and smartphones. We leveraged basic arts and crafts supplies – such as cardboard and glue, for example – to ‘make tangible’ the concepts our participants proposed. We believe it is a precious resource for

people to express their ideas, to visualize them and share them. That is extremely valuable, and you often get that “Oh, that’s what you mean” moment that otherwise wouldn’t have happened. And at least one of those cheap mock-ups was actually shown during the final public presentation when one of our participants acted out how a special pair of glasses would function in one of the scenarios we developed. Using one’s own body, in addition to material components, is an immediate form of communication that is particularly effective: not only does it look real and is understandable, but acting out can even change someone’s perception of a concept.

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**ANALYSIS**

In this conclusive analysis, we tease out two aspects of the Ideal Lab charrette. First, we focus on the explicit choice not to use personas as a design method, and its implications for the overall process. Then we delve more in-depth into the concept of ‘scenarios’, which constitute the final deliverable of this charrette.

**DESIGNING FOR PERSONAS, OR DESIGNING FOR PEOPLE?**

“We don’t design for personas, we design for people” was a powerful statement made by Birgitta Ralston during the closing presentation of the charrette’s results. This sparked a discussion with the audience, represented here through the considerations of Felipe Escobar Vega, practicing designer and co-author of this chapter, who observed the Ideal Lab charrette and, in his design education and practice, had often used personas as a tool to model citizens.

Personas are a well-known design method, introduced by Lene Nielsen in 1998, referring to the Greek word for ‘mask.’ As practitioners work with personas to develop new products, they metaphorically wear their users’ masks<sup>2</sup> to understand them and their needs. As Nielsen has argued, ‘to put yourself in the shoes of the users gives you an idea about what their wishes are and how they will use the product to be designed, whether it is a website, a mobile phone, or a new bike. Also, a persona makes it possible to create a clear idea of what the user will use the product for and in what situation or context the product is to be used’. As Ralston & Bau criticize the use of personas as a design method, Escobar Vega reflects: “This was a challenging argument to interpret from my own industrial design background. After all, during my Master’s studies, I was taught that personas are one of the few ways to summarize preliminary design research.” And this use of personas as ‘shortcuts’ towards an understanding of users is almost taken for granted by many designers nowadays. As Escobar Vega puts it, “Design school trained me to turn to personas as a way to remove biases and help create empathy within the entire team for users.” However, personas are ultimately bona fide simplifications and characters created by the designers themselves as supports for their process. Ralston & Bau warn against the implicit biases that might inadvertently be transferred into personas, and call instead for dialogue with real people which, they guarantee, are way more interesting and inspiring.

<sup>2</sup> Nielsen, L. (1998). ‘Scenarier som udviklingsværktøj’. *Designværkstedet*. Retrieved from [www.design.emu.dk/artikler/9800-scenarier.html](http://www.design.emu.dk/artikler/9800-scenarier.html).

As a design method, personas are still relatively new, and many practitioners tend to intuitively reinterpret them. Moser et al.<sup>4</sup> introduced a protocol to generate personas, emphasizing how they should be based on data, be it quantitative (e.g. statistics provided by an institutional stakeholder), qualitative (e.g. a grounded-theory analysis of ethnographic observations and interviews), or both. Let us compare this to Ralston & Bau's argument that designers sometimes produce biased personas according to their own preconceptions, leading them, for instance, to imagine senior users as frail and isolated even though this might not always be the case. The Ideal Lab's criticism of personas and Moser et al.'s study converge on one key point: personas should not be generated without supporting data. To create them relying only on one's own personal experience and expectations is a lazy shortcut that should be avoided. This is where Ralston & Bau's emphasis on 'talking to people' becomes crucial. When one does not have time and resources for a large-scale study to support the creation of 'proper personas', the Ideal Lab's suggestion is to just skip them and focus on actual users with in-depth, empathic interviews and use them in lieu of abstract representations.

### DESIGN SCENARIOS

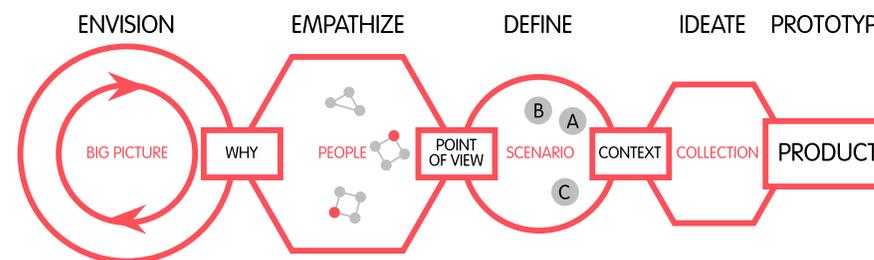
The Ideal Lab charrette ultimately produced two design scenarios, 'Movable Knowledge Bazaar' and 'Imaginary Lines', which were presented as conclusions to this process. As we analyze the methodology demonstrated by Ralston & Bau, it is worth delving deeper in the exact meaning of 'scenario' in this specific design context. To do so, we refer first to a document published in 2015 by the Ideal Lab project as a report on their 'Replanted Identity' project,<sup>5</sup> where they articulate more in detail the process they followed. In that text, they address their workshop process, which tasks a number of Agents (designers, artists, activists...) to cooperate with Participants ('local habitants or users are invited to take part in co-creative workshops to transmit their point of view and knowledge to the Agents') on specific Themes (such as 'identity'). Agents and Participants start from qualitative observations to create scenarios that connect with the chosen theme. Those scenarios are, finally, the base for concrete products that are prototyped by the Agents. From this brief outline of the Ideal Lab methodology, scenarios emerge as an intermediate step standing between initial data and final products. The Movable Knowledge Bazaar and Imaginary Lines are a context narrative that could inspire designers to actually craft specific artifacts during a (hypothetical) follow-up to the charrette.

There is, however, more to it than this. As scenarios and scenario-based design have been part of user-centered and human-centered approaches since the 1990s,<sup>6</sup> we would now like to

<sup>3</sup> Nielsen, L. (2012). *Personas - User Focused Design*. London; Springer.  
<sup>4</sup> Moser, C., Fuchsberger, V., Neureiter, K., Sellner, W., Tscheligi, M. (2012). 'Revisiting Personas: The Making-of for Special User Groups'. *CHI '12 Extended Abstracts on Human Factors in Computing Systems*, 453–468.  
<sup>5</sup> Ideal Lab (2015). *Replanted Identity*. Transplant.  
<sup>6</sup> Rosson, M.B., Carroll, J. (2002). *Usability Engineering: Scenario-based Development of Human-computer Interaction*. San Francisco: Morgan Kaufman.

broaden our focus and provide more context. In the context of usability engineering, scenarios were initially understood as 'simply a story about people carrying out an activity; a problem scenario is a story about the problem domain as it exists prior to technology introduction'. In this sense, life-like scenarios listing the steps that a user would need to carry out to execute an activity as a short story could provide a more nuanced context than of a sequence of check-boxes. In subsequent years, as design research began focusing more on collaboration and group-work, scenarios started to programmatically include more actors, describing the behaviors and experiences of each of them. More recently, scenario-based design has begun to take into account the various actors' experiences, feelings, and desires, as well as their socio-cultural background and identity. Scenarios may also be speculative (as is the case for this charrette's output), meaning that the context they describe is not plausible in the near future, but is meant as an exploration of a possible reality - as an exercise, or a provocation. In sum, in today's design practice, to develop a scenario means to produce a complex narrative flow-chart that takes into account a variety of stakeholders, and their actions in relation to the artifact that one is designing for.

We see, in sum, intriguing similarities and differences between how Ralston & Bau conceptualize 'scenarios' and how they are commonly understood in design research and practice. Normally, a scenario is composed of a diagram that explains the needs and goals of the various stakeholders involved, plus a set of micro-narratives to give some context. In contrast, the Movable Knowledge Bazaar and Imaginary Lines – as they emerged from this charrette – are first and foremost narratives about possible contexts, a sort of 'sandbox' in which to place potential users and possible artifacts to design. They are, in other words, a sort of canvas that synthesizes many of the insights from the previous observations and explorations.



**Figure 1** - The ideal Design Process  
 Real people - Sustainable context - Test quickly

## IN CONCLUSION

We have explored two outstanding features of the Ideal Lab process as demonstrated at the Design & The City conference. Fieldwork, interviews, and story-gathering are crucial elements that characterized the Ideal Lab charrette. Two specific elements stand out: the decision not to use the common method of personas, and a broader-than-usual understanding of what a scenario is. In conclusion we see a connection between all these elements. Ralston & Bau emphasize fieldwork with 'real people,' which they do not want to replace with synthetic personas. Likewise, scenarios would normally be developed from some personas' perspective, and – coherently – Ralston & Bau choose to adapt them to their process, making scenarios that are more open, inspirational and narrative, and less precise. As Escobar Vega summarizes in conclusion, "I understand that it takes more time and effort, but it gives space to designs that will better fit real people and their expectations with a space, product or service; and it gives space to use things that stand out from a specific person, if it is seen as a meaningful theme."





## FIELDS OF VIEW: DESIGNING FOR DIALOGUE AND SOCIALITY IN SMART CITIES

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CO-CREATING GAMES TO BETTER UNDERSTAND THE ISSUES AND PERSPECTIVES AT STAKE

### THE LAB

Fields of View, based in Bangalore, India, is a research lab that develops new methods to bridge the gap between policy-makers and the lives of people affected by their policies. The design of games and the use of playful dramaturgies are a key aspect of Field of View's approach. On the one hand, games can be used to make policy understandable for stakeholders. For instance, in Fields of View's Indian Energy Game players take up the role of one of three ministries concerned with various sectors of energy production such as Coal and Natural Gas, Renewable Energy and Atomic Energy. Together they have to come up with a future energy policy that combines a growing demand for energy with goals such as increasing the sustainability of power production, while also taking into account such factors as the stability of international relations influencing energy imports, or the social costs of relocation involved in building hydro-electric plants.

In a second approach promoted by Fields of View, stakeholders do not just play a game but are asked to design their own game around a particular issue. To create a gameplay around conflicting interests and the influence of external factors, stakeholders are forced to imagine the perspectives and reasoning of all stakeholders. That, in turn, contributes to a mutual understanding of the interests and points of view of the various parties involved in the issue.

This latter approach of game-making is part of a broader emergence of inclusive and participatory methodologies for urban design processes such as online ‘town halls’ and platforms, or living labs for co-design and participatory policy-making. While all of these aim to include a broad variety of stakeholders, it is often difficult to bring many stakeholders to the same table, have them agree on a common problem, and formulate an action plan to solve it. In other words, achieving consensus in communities can be problematic. How should the issue at stake be framed? How can it be tackled? Fields of View proposes that the designing and playing of games can facilitate these processes.

Far from being a simplistic use of ‘gamification’ techniques, Fields of View underlines how prompting stakeholders to try to make a game out of the design problem at hand may help to frame issues in a different light, thus helping to move a co-design process forward. The design of game-like interactions may be a means to create compelling situations for users to engage with, as well as to motivate them to temporarily act outside their own routines. Fields of View also takes into consideration the role of the urban environment and its interaction with citizens, as well as how artifacts in public spaces support and become part of playful events.

The games themselves are not always central: the main benefit is that the game nudges the participants of a design workshop to look at the problem ‘as if’ it were a game design opportunity. Fields of View also makes use of various playful dramaturgies in the various phases of the workshops: while collaboratively designing a game, participants interact with each other in playful ways. Fields of View has a history of producing workshop games, such as Rubbish!, a cross-cultural design collaboration between Bangalore and Amsterdam that was centered around the fostering and understanding of new waste collection policies in Bangalore.

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## THE CHARRETTE

The goal of the Amsterdam charrette was to explore Field of View’s approach to game making. As urban games and playful interactions become increasingly accepted as tools for addressing urban challenges in an inclusive manner, this charrette offered an example of a community engagement workshop that leveraged some components of game design. How can workshop participants collaboratively design a game or playful situation that takes various perspectives into account and makes these understandable for all actors involved? And how can such a workshop itself be organized in a playful way?

## ‘DESIGNING FOR DIALOGUE AND SOCIALITY IN SMART CITIES’

The charrette was led by Bharath M. Palavalli, who introduced participants to a series of methods including observation, problem framing, schematization, and finally game design. Together they had the objective of fostering dialogue among multiple stakeholders. These methods follow a five-stage model developed by Fields of View that moves from problem formulation to conceptual modeling, game/simulation design, integrated intervention, up to the presentation of outcomes and recommendations. The charrette curated by Fields of View focused specifically on the first three stages. To design simulations and games in the context of urban design and planning, designers must first understand what kinds of issues the games will address, the objectives of the games, and relatedly, who will be the potential players of the game. In the charrette various methods to achieve this were explored. The issue to be explored in this charrette began with the broad problem space of improving the relations between formal and informal stakeholders in the Knowledge Mile.



Figure 1 - Field of View’s Methodology

The problem formulation stage began with an in-person exploration, with participants going into the neighborhood ‘as a blank slate’ and observing problematic points throughout the environment. Starting from their unstructured observations, participants were asked to produce a broad list of the urban actors they observed (the University, various shop owners, students, people living in the neighborhoods, etc), and to identify which of them might be likely stakeholders for a participatory process. An ‘affinity map’ was chosen as the most suitable method to visualize these insights.

Participants proceeded as follows. They wrote on Post-it notes a variety of unstructured observations, from feelings (like ‘no sense of community’) to actors (like ‘the Amsterdam University of Applied Sciences’) to dichotomies (like ‘a livable neighborhood vs. a fashionable one?’). Notes

were first clustered following thematic affinities (e.g. 'everything related to migrants'), and then organized along two axes (individual vs. collective; formal vs. informal). This process allowed the charrette to collectively visualize an array of problem areas, and to have more clarity about the relations among different stakeholders and their characteristics. For example, the AUAS emerged as a formal and collective actor, very different from smaller, less structured ones such as neighborhood groups or migrant entrepreneurs.

### STAKEHOLDER MAPPING

Later, the charrette was split into smaller groups, each tasked with selecting a specific group of stakeholders in the Knowledge Mile and mapping their relationships: for example, which has power over whom, which generates money, which provides services, etc. Participants were asked to identify flows of resources between the stakeholders, as well as the constraints regulating them. By constructing flow diagrams, they were encouraged to break down the problem space and conceptualize the intricacies of the problem ecosystem. Understanding the relevant stakeholders and actors, their resources and constraints, and their connections to one another and to the problem area is a necessary step towards a complete mapping.

Many board games that we play for fun – for example, the famous Carcassonne game – leverage similar mechanics of resource allocation, and this makes for a fitting metaphor to explain such mapping. For example, one group sketched a diagram describing two economic systems: the residents of Wibautstraat and local grocery shops, and more transient people like tourists or students and hotels, restaurants, or more touristic cafés. Even though there is an overlap between the two systems – locals do eat out sometimes, and some tourists go to the Dutch supermarket chain Albert Heijn – this schema brings into focus the multiplicity of local stakeholders, and the local government's need to manage all of them (in a, hopefully, participatory manner). Having completed and visualized their schemas, all teams finally returned to their objective of enabling Knowledge Mile stakeholders (e.g. the AUAS) to better understand and interact with other informal actors.

To do so, they were given the assignment to design simple, playful tools to foster shared understanding and empathic dialogue. But how to synthesize all their observations into such a simple game? As a piece of practical advice, Palavalli suggested they focus on a few stakeholders, imagine the end-scenarios that would solve their needs, and recreate the process necessary to get there: doing so for competing stakeholders is an effective way to tease out their conflict, and a good starting point for designing a playful interaction that represents it. Further game-related tasks included selecting and designing their game elements (story/scenario, mechanics, technology and aesthetics), addressing questions about actors (who is represented? What is the relationship? Is it a single player or multi-player game?), and deciding upon the possible outcomes and win/lose conditions.

The playful interactions that were finally proposed in the charrette were still simple sketches, but already promising in some ways. For instance, the charrette developed a game that challenged

players to collect handshakes and local stories as quickly as they could while they explored the neighborhood: this was proposed as an informal, almost whimsical, research tool that AUAS researchers could use to maximize their connections and dialogue with the people living and working in the Knowledge Mile.

### INTERVIEW

#### How would you summarize the methodology you demonstrated at Design & The City?

In Amsterdam, we adopted a semi-structured approach to generate a problem statement that was mutually acceptable to all stakeholders. Often, the desired outcome of workshops like this is primarily a road map, with which the participating actors can work towards achieving their end goal either as a collective, or as smaller groups, or as individuals. The process itself brings systems thinking into the discussion: the idea is to reduce the amount of conflict and to show the benefits of cooperating.

First off we asked participants to frame the issue they wanted to address. This was a challenge, because many of them weren't locals, but it is also often difficult for stakeholders to elaborate a problem formulation. Observing the neighborhood in person, then sharing all the insights on a whiteboard and organizing them into affinity maps and flow diagrams helped the charrette to progressively refine the problem formulation. In fact, I made a point to ask participants to restate their problem formulation aloud after each discussion: one could really see the evolution of the problem over the course of the charrette.

In addition, some of the problem statements that the participants proposed were already quite game-like, so – as a small provocation – I challenged them to try to make actual games out of them. We spent the last session of the charrette synthesizing insights from the maps and flows into game rules. Which resources are transferred to whom? Who has power over whom? What is the desired scenario for each stakeholder, and how is that compatible with the others? Who is 'playing against' whom?

Some of the participants had good ideas, while others struggled for a long time. I think that the takeaway here is that the participants attempting to design games for urban engagement might have realized that only some issues are a good fit to be addressed through playfulness. In brief, I would say it is a question of appropriate tools for appropriate problems.

#### Fields of View is an established research think-tank in Bangalore. If we compare your usual process with the one you demonstrated in Amsterdam, what are the main differences?

In very general terms, the charrette at Design & the City was more straightforward than the 'standard' process at Fields of View because, in this specific case, all the participants were from different places, and we did not have many locals. To compensate for this, they had to spend more time exploring the urban area we were dealing with: in the first part of the charrette, I asked participants to explore the neighborhood on foot to gain some kind of unmediated feel for

it, and to make up their minds about the context they were looking at. When Fields of View ran similar workshops in the past, all the local participants would already have their understanding of the social and physical context, and all we need to do is to put it into focus and spark a productive discussion around it. In this case, instead, such understanding was not there to begin with, and this difference is more significant than it seems.

I know it sounds strange when I say it aloud now, but there was so little conflict in this specific charrette at Design & The City that I made the conscious decision to artificially induce some by putting some conflicting ideas on the table. All this led to a nice session, where the only difficulty that really popped up was, as I said, that Fields of View generally works on this kind of urban challenges with stakeholders who are highly engaged in the problem space – such as local inhabitants, city officials, local entrepreneurs, and activists – leading to more conflict in real-world situations.

**You already mentioned the importance of exploring on foot the neighborhood you were working on. Did your charrette also make use of physical or material elements, in addition to digital ones?**

As we said before, being hosted in the particular neighborhood we were addressing was essential. More specifically about material elements, the meeting room we used as ‘headquarters’ for our charrette was equally fundamental. It was quite productive to have the workshop on the fourth floor of a building with a view over the area we were discussing: it made a difference because during many conversations – especially the heated ones – we were always pointing and gesticulating at the spaces around us. That kind of hand gesture takes a more nuanced meaning if one is pointing at the actual space being discussed, instead of just maps or pictures.

In addition to this, we also sketched a lot on paper and whiteboards, and we literally covered a wall of the meeting room in Post-it notes. It was useful to be able to track how the problem being formulated by the participants evolved, and we could do that just by walking through the notes on the wall.

**Games and play are becoming widely accepted as design instruments. Did playfulness have a role in your charrette?**

Yes, the overall process was game-like in the sense that it was a step-by-step process, and everybody knew where we were heading towards in each session. We had objectives in each one, and we kept track of them. The second thing that also got the participants going was that I split them into smaller groups. That served two purposes. One was that in any large group there are bound to be a few people who are not necessarily as proactive as the others. Smaller groups gave participants who were a bit less outgoing a chance to interact. The second thing that it did, funny enough, was to introduce an element of competitiveness, in the sense that each group had to present to the other groups. So there was that, “Oh, they’re getting ahead, let’s get that for us as well.” So that really played out well.

On a more fundamental level, it is essential to discern between ‘gamification’ and ‘games’. Gamification commonly refers to adding an incentive wrapper around a particular issue. For instance, if you want people to carpool you tell them that they will get points if they do so - you ‘gamify’ the issue. Two things happen here: there’s a short-term interest which people lose in the long term; and second, the behavior in the game is artificial - once you go outside the game zone, you revert to your original behavior. Instead, Fields of View’s games simulate a real-world system. In playing the game, you bring yourself, your preferences and biases into the game. The actions are what you would perform outside of the game too, which paves the way for experiential learning, or learning in the game that can be transferred outside of the game too. As we model the real-world system at hand and let the players play with the system they face real-world constraints, and the decisions they take allow them to experience the consequences of what would happen in the real world. The games do not have artificial incentives, which according to our game design philosophy do not help translate learning from the game world to the real world.

**Which methods did your participants use to understand and represent stakeholders and the context you were designing for?**

The playful activities we usually carry out in the Fields of View workshops address complex situations (for example, waste management in India) by engaging stakeholders. One of the critical factors to consider when conceptualizing stakeholders is to understand the role they play in the design process. This is why, in most cases in our work, Fields of View does not use personas, as we have actual stakeholders as a critical part of the workshop. Each stakeholder has an understanding of the actual final users of the system we design, and those conceptualizations are brought to the table for discussion.

This charrette simulated a collective and participatory design process and, for this, I cast participants into the role of stakeholders. Coming back to Fields of View being reluctant to use personas, even in our more extended design workshops, we have two reasons for this: first, using personas may bring biases into the design process and, second, we risk not understanding how much stakeholders are invested in the end object if we researchers do not interact with them. On the other hand, if organizers and participants spend time and energy including real-world people and stakeholders, projects may take on a life of their own. There is indeed the risk of needing much more time, but if you let stakeholders have a say in the design process, it may end up shaping their views and behaviors also outside of the project.

**Did your diverse group of participants bring up a different understanding of the problem space?**

As I mentioned before, the whole process was quite discursive and playful, in the sense that I sparked a conversation and let my participants/stakeholders find common ground to converge upon. As we were discussing the Knowledge Mile neighborhood, there was a distinct divide between different participants. One group was pointing at the rapid change in the area, from a post-industrial area to a residential one, to a place that aspires to be a hub for creative in-

dustries. They were thinking of how to manage that transition. Another group argued that the identity of the Knowledge Mile was purely artificial and not aligned with the urban activities actually taking place. And then there was a third group which was along the lines of 'Here is an opportunity for something fascinating for us to capitalize on'. By laying out these different conceptualizations, the charrette was ultimately able to find a synthesis – at least between how the participants understood the situation, if not a practical solution.

## ANALYSIS

Key questions that emerged during the two-day charrette at Design & The City addressed the differences between the gamification of stakeholder engagement, the use of playful methodologies, and using full-fledged games in the design process. Additionally, participants explored different perspectives on the many objectives of games as design tools, as well as various ways of framing the target audience of the games. Leveraging games and playfulness seems to be a promising approach when designing for participatory processes to foster inclusion and sociality. Two principal questions were discussed, first about the distinctions between games and related concepts, and secondly on the different roles of 'gameful' and playful interactions throughout the design process.

The process demonstrated by Fields of View exemplifies how to design games with the aim of fostering dialogue around a problematic urban issue involving various stakeholders. This has a twofold effect: first, it enables researchers and stakeholders to tease out and formulate more effectively the issues at hand, and secondly, it produces games that may be deployed as tools for research and engagement.

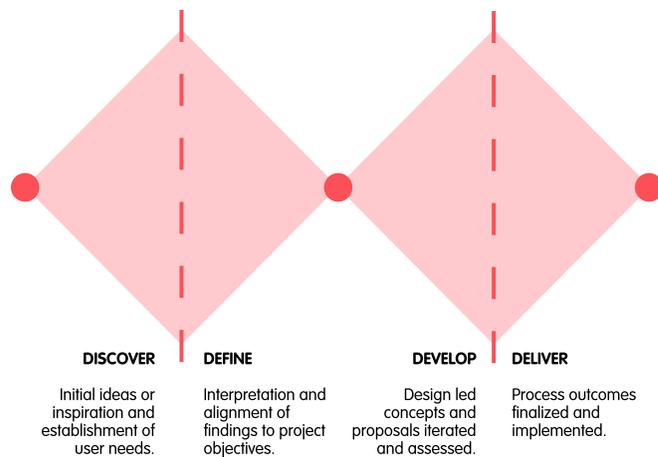


Figure 2 - The Double Diamond Design Process. (adapted from the Design Council 2005).

## DESIGNING GAMES AS A METHOD TO CREATE UNDERSTANDING

These types of games or tools would usually be used at the initial stages of an urban design or municipal service design project, as a design research method. In other words, through designing and/or playing the game, stakeholders can gain a better understanding of the problem area from various perspectives and are therefore in a better position to engage in empathic dialogue with one another when moving toward possible solutions. Ideally, insights gained from this dialogue would be used to inform a solution, design or service that acknowledges the diverse needs of the various stakeholders.

Any design process, be it urban, product or service oriented, typically involves four main stages: discovery, definition, development, and delivery. Games or gameful elements can be used throughout the design process to foster inclusiveness, creativity or playfulness among designers and stakeholders. In the Fields of View charrette, the maps and flows diagrams (although not games per se) were produced with a playful, open-ended and exploratory attitude. Furthermore, the participants concluded their work by sketching some participatory tools – such as the game to collect local stories in exchange for handshakes – that expressly use some elements of game design.

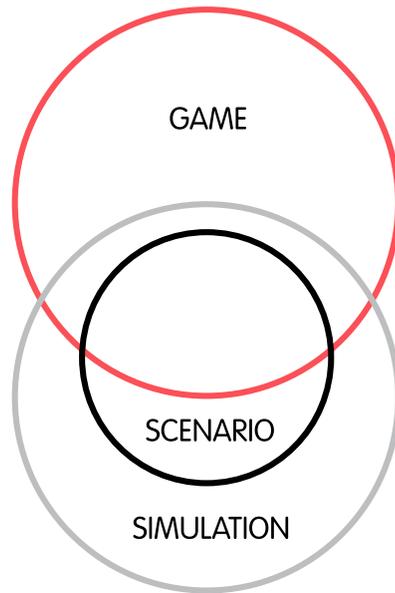
Nevertheless, the needs of the designers and project stakeholders dictate where certain types of gameful interactions and/or playful interactions are used throughout the design process. A few conceptual distinctions are worth noting here.

## GAMES, SIMULATIONS & SCENARIOS

Since the rise of 'gamification' in recent years, there has been a flurry of scholarship devoted to distinguishing between various concepts associated with games (play, scenarios, simulations, game elements, etc.). Often used interchangeably or in combination with 'simulation' is the concept of 'game'; however, not all simulations are games and not all games are simulations.<sup>1</sup> Simulations that contain central game components (goals, activities, payoffs) are considered games. At the same time, games that are designed to epitomize or simulate a part of the real world can be considered simulations. Simulations are operating models reflecting the core features of a real or proposed system, process or environment, the essential properties of which are best explained when contrasted with related concepts. These include modeling and forms of interactive learning, such as scenarios and games. Scenarios serve two purposes. Firstly, they are forms of imagined realities that are used as independent heuristic tools. As such, they provide participants in various domains of policy planning and strategy development, both in government and the private sector, with the opportunity to enact possible states of particular social system.<sup>2</sup> This creates a second purpose: as building blocks for simulations.

<sup>1</sup> Kleiboer, M. (1997). 'Simulation Methodology for Crisis Management Support'. *Journal of Contingencies and Crisis Management*, 5(4), 198–206.

<sup>2</sup> Ibid.



**Figure 3** - Conceptual boundaries of simulations, scenarios, and games.

A further distinction can be made between gaming and playing. Callois famously related gaming and playing - which he terms *paidia* and *ludus*, respectively - along with a spectrum of play activities.<sup>3</sup> While *paidia* implies a more improvisational and 'tumultuous' recombination of behaviors and sense-making, *ludus* connotes playing that is structured by explicit rule systems and goal-orientation.

Various forms of games, game elements, and play can be used throughout the design process, depending on the needs of the designers and project stakeholders. Arguably, much of the design process is inherently playful. During the charrette, and in the interview above, Bharath M. Palavalli expressly mentions the game-like qualities of the process - with teams checking on the others' work with a bit of playful competition. Nevertheless, the distinctions made above help to build an understanding of the types of gameful and playful interactions that are most suited to different stages of the design process. 'Gamestorming' techniques, for example, imply the use of games and gameful interactions for brainstorming. These would thus be most profitably used in the discovery and development stage of the design process, where more convergent, and often playful, thinking is required. Games and gameful interactions designed for stakeholder engagement, or gameful interactions developed to foster public participation in a design process, are most profitably used in the former stages, when more structure and goal-orientation may be needed.

## IN CONCLUSION

We see much potential for urban stakeholders around the globe increasingly using games and playful interactions to involve a multiplicity of stakeholders in various urban design projects. However, as more designers seek to employ such methods in their collaborative design processes it is important to understand critical conceptual distinctions and their influence on the outcomes of a design process. This chapter has documented a part of Fields of View's methodology for moving from observations, to schematizations, to the design of simple games to be played with/by stakeholders as part of a participatory process. From there, we unpacked the concept of games and play and reflected upon how gameful interactions may contribute to the design process. By distinguishing between game (*ludus*) and play (*paidia*) we have tried to offer more conceptual clarity on how playful/gameful methods may facilitate convergent and divergent design stages.



<sup>3</sup> Callois, R. (1958). *Man, Play and Games*. Chicago: University of Illinois Press.



## KITCHEN BUDAPEST (KIBU): HYPERLOCAL CIVIC PLATFORMS

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**A HUMAN-CENTERED SMART CITY: VALIDATING PERSONAS THROUGH ETHNOGRAPHY, DIGITAL METHODS, AND URBAN SENSORS**

### THE LAB

Kitchen Budapest was founded in 2007 by a collective of media artists, theoreticians, and coders from a variety of backgrounds. As one of the first media labs in Hungary, KiBu's primary mission was to instigate digital literacy and DIY techniques on the local scene. KiBu has been actively present as an internationally recognized innovation lab with young researchers and developers forming its team ever since.

In 2017 KiBu shape-shifted to become the Open Innovation lab of the Hungarian telecom company Telekom. The lab now presents itself as a connector, bringing together several agencies, scenes and individuals from academia, the maker culture, design agencies, the tech scene and the business world. More than the other labs participating in the Lab of Labs, KiBu has a focus

on the creation of innovative products and services with sound business models. The lab aims to support enterprise growth through activating and involving external innovation capabilities to solve business and technological challenges. KiBu incorporates three functions: research and development (prototyping, testing, service design, UX/UI design), education (next generation programs), and industry collaboration.

One of the clearest examples of KiBu's strategy can be found in its talent program, an idea development program open to innovative teams of collaborators who bring in promising ideas or concepts with business potential and an experimental approach. During a six-month period these teams of innovators are guided through a process in which they move from an idea to a proof of concept or a prototype. Such teams follow a development process that includes weekly pitches, at which candidates present their progress, and supervision by experts from various disciplines. Through this collaboration the teams develop the skills they need to successfully enter the market, in four stages.

The first month is the discovery phase. KiBu mentors work with the team to more closely define their original idea and to create a vision that is then validated using several essential tools (benchmarks, competitor analysis, and persona analysis, etc.). In the second month, the teams enter the design phase. The design elements are designed, milestones are defined, and a schedule is set up for the third stage: the development phase. In this phase, which lasts about three months, the actual product or service is created, under the regular supervision of experts and mentors. Weekly testing and iterations are key elements in this process. Finally, the last month is the delivery phase. In this phase, the prototype is tested, finalized, and eventually introduced to the public.

Ideas with the most significant potential qualify to enter the second round in the talent program. Alternatively, KiBu can also help to provide access to other accelerator programs in the region or globally by finding investor funding and raising awareness for the projects.

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## THE CHARRETTE

Attila Nemes is one of the initiators of the Hungary-based innovation and incubation lab Kitchen Budapest (KiBu). Working at the intersection of entrepreneurship, social innovation, coding, and making, Attila and KiBu are in a unique position to address the theme of digital methods in smart cities and smart neighborhoods. The assumption that for every urban issue there might be a digital solution is a recurring trend in designing for 'smart cities'. The increasing number of civic applications being developed to resolve public and societal issues by engaging citizens through digital platforms reflects this trend. While these solutions certainly have the potential to enable more citizen engagement, they often foreground the technology and lose sight of the social innovation.

For these reasons, this charrette had the objective of exploring the relations between the social

context and digital technologies at a 'hyperlocal' scale and inviting participants to develop design concepts for ubiquitous devices tailored to self-organizing communities. What we highlight in this chapter is the transdisciplinary perspective - between human-centered methods and digital technologies - that Attila Nemes and KiBu contributed in order to focus on the interplay between digital and non-digital social interactions. Three data collection methods were explored to lay the groundwork for the creation of personas (ethnography and interviews; digital methods; and motion sensors), all of which were adapted to foreground the role of digital technologies in social interactions. The charrette placed technological and human-centered design approaches side-by-side, and thus critically re-examined the relationship between design, digital technologies, and 'smart cities'.

## 'HYPERLOCAL CIVIC PLATFORMS'

Participants in the charrette agreed on the need to involve communities in developing 'smart initiatives' rather than letting technology drive the 'smart city' agenda. Design endeavors should be born from an idea, and not simply from the availability of a specific technology, and they should put users or citizens at the core of their approach. The two-day charrette was divided into four phases. In the first phase, participants came to a collective definition of the problem statement. This was followed by the development of user personas and their validation through three different data collection methods. The third phase consisted of concept generation, and finally, a video prototype was produced. In what follows, we focus principally on the first two phases.

The charrette began with a brainstorm to decide which problem space to address. The broader topic of hyperlocal civic platforms was narrowed down to a discussion of the impact of products such as Airbnb and Couchsurfing. These services decentralize tourism and change the relation between those living in a place and its visitors. For these reasons, the underlying potential tension between 'locals' and 'tourists' emerged as an interesting challenge that the group chose to explore for this charrette.

Users of 'sharing economy' accommodation services such as Airbnb often stay in otherwise non-touristic neighborhoods, and the Knowledge Mile may exemplify this tendency. This kind of tourism tends to have an ephemeral economic impact on the local context, whereas the owners of such platforms (e.g. Airbnb) take a large part of the profit. While their presence may stimulate local businesses and make neighborhoods livelier, it may also lead to undesired externalities: from specific ones such as noise pollution, to more systemic effects such as gentrification and, ultimately, a reduction in overall civic engagement. Participants in the charrette decided to articulate their problem statement as a desire to "establish a more direct connection between short stay tourism and long-term social/economic impact and investment while avoiding its commodification by leveraging social goods (e.g. cooking, community gardening, etc.)."

To develop solutions to these questions, Attila Nemes proposed to generate personas defining a variety of archetypal characters representing both tourists and locals. A set of guiding questions were followed during their collective development:

- Who would make use of a product or service that would offer such a (social) exchange?
- What different types of tourists could we imagine?
- Which tourists would be interested in exchanging experiences with locals?
- Who would these locals be and what kind of experiences would the tourists be interested in?

Personas are artificial constructs that need to be supported and verified. Participants in the charrette turned to three different methods to collect and interpret the data needed to verify, reject or fine-tune the personas. They split into three groups to explore ethnography and qualitative interviews, digital methods such as social media data collection, and sensor-based data collection. The first group interviewed locals and tourists in and around Rembrandt Square, with two scripts, according to whether the interviewee was a local or a visitor. Locals were asked where they would take a friend visiting Amsterdam, aiming to extract information about their recommendations, and more generally what kinds of ‘urban experiences’ they would like to offer. Conversely, tourists were asked about their plans in Amsterdam, and where they gathered information for their visit.

#### DIGITAL METHODS TO CONSTRUCT PERSONAS

A second group turned to digital methods, exploring traces left online by both tourists and locals. They explored different digital platforms to aggregate data about tourist and local activities in Amsterdam. These sources included the website of Het Parool (a local newspaper) which contained local recommendations; Airbnb pages containing tips from hosts about local activities, restaurants, cafés, and bars; Withlocals, where locals offer services, workshops or other experiences to tourists; Tripadvisor, Couchsurfing, and Instagram. This group explored what kind of places locals mapped as recommendations, which events they promoted, or what kind of activities they offered. The group then experimented by extrapolating patterns from these data in order to elaborate a profile of visitors and locals and of (the nature of) possible exchanges between them.

A third group worked on using motion sensors to capture data. Participants mentioned seeing street signs that give conflicting information to visitors and locals. They hypothesized that perception noise might constitute both an issue and an opportunity for design, and proposed an experiment composed of a misleading sign and a motion detector. More concretely: at the workshop site, participants put up a sign announcing ‘Free ice cream’ that led passers-by into a blind alley in the building. There, a motion sensor registered their presence. This experiment was principally envisaged as a proof of concept: would it be possible to set up motion sensors to capture data in the short time span of the workshop? In this case, the data gathered was not very meaningful for the research question. However, it could be imagined that during longer design sessions such an approach could lead to interesting input about the use patterns of places, or to test out various scenarios in public space.

To conclude the process, charrette participants synthesized the quantitative and qualitative data they had collected and connected their findings with the local/tourist personas they had developed. This led to generating the design concept of the ‘Surprise Machine’, a service for tourists to be connected with locals proposing unexpected experiences in a city. Through this application, locals and tourists could be matched up to start exploring activities in the city together. The scenario for this was as follows: a visitor arrives in the city, gets off the train, and finds the Surprise Machine. At the machine, they buy a ticket, and after pushing a button, the machine offers them a destination to visit in the city. There, a local person will be waiting for the tourist, offering them a surprise. Income earned through this service is shared between the local offering the service and the company that manages the platform. The latter uses the income for product development and marketing. This concept aims to reduce the friction between residents and temporary visitors, and emphasizes promoting transactions based not only on monetary exchange but also on human contact, experiences, and storytelling. To conclude the charrette, participants developed a short video prototype outlining their proposal.

#### INTERVIEW

**Let’s begin by looking back at your usual workshop process at KiBu in Budapest. Did you adapt your methodology in any way for this charrette?**

It was shorter. We usually do longer workshops, of at least a few days, where we follow a more complex ideation process, and then we usually have several design iterations. In those ‘standard’ workshops there is always a first fundamental part where we try our best to understand our users, and we start generating ideas only afterwards. Then, we go through them several times, build various prototypes, and test them.

Let’s take for example the first part of our process, understanding the users. On this specific occasion in Amsterdam, our participants explored the neighborhood to interact with the actual stakeholders, but only once. Typically, many iterations would have been necessary.

Also, think about our video prototype of the ‘Surprise Machine’: given more time, we would have gone through some iterations after sketching it. Maybe first on paper, just to get an idea of its essential functions, and its look and feel, and then in a more physical form – maybe with some LED and some simulated features. After doing this, it would probably have been necessary to go back to interview other potential users. Maybe it could have been a good idea to go out to Central Station in Amsterdam, chat up some tourists, and ask them to push the button on the prototype, and get surprised. Let’s say they receive the surprise prompt from the machine: would these random people be willing to follow it? And in how much time? And what would their experience be like? So, if we had had more time, we would have delved deeper into these kinds of processes, adding more details to the prototype to get better insights from testing. All in all, I’d say that time constraints were the clearest differences between our usual KiBu process and the one we followed during the Lab of Labs.

**Playfulness is a concept that appeared in different forms in almost every charrette. How did 'play' contribute to your specific process?**

It was super playful, also thanks to our participants being very nice people. I think that playfulness is a powerful resource to use when one wants to take a very serious design process and point it in a unfamiliar direction. Let me give you a concrete example. We were trying to get our problem statement into focus, but we were at that early moment in the design process when one does not really know what to do yet. But we knew we wanted to reach out to locals and tourists, and a playful attitude helped a lot. One of the first things we did was to go through stereotypes of tourists. I was trying to tease out a list of stereotypes about tourism from the charrette participants and then, all of a sudden, everyone just says "I'm not a tourist". Most of us European intellectuals want to think of ourselves as not-tourist, when in fact we sometimes are. That not only gave us a big laugh, but also made us a bit more empathetic towards the experience of tourists, locals, and also of people who would like to 'do as the locals do'.

**What did your participants do to understand and represent your potential users?**

Let me start from the end: at the final presentation of the outcomes of the charrettes, I remember a lengthy discussion on whether we should develop personas or not. Of course, if one is developing a specific idea, it might be smart to find real people, follow them for one or two weeks, and see how they approach the problem, and in general what is on their mind. But, sooner or later, it's necessary to generalize what you observe, and to do so one can follow the classic marketing procedure of target group research – although it's expensive and takes a lot of time – or take a shortcut and generalize by creating personas.

In practice, the participants to the KiBu charrette went out to collect short video interviews. For example, they found some young men who reported that they regularly visited Amsterdam, following the same route every time, almost like a ritual. However, the previous night something unexpected had happened to them, and they told our interviewer that they had had a lot of fun. So, we hypothesized that people usually follow some pattern, but they also want to talk about one or two exceptions, and we had the idea of looking at Instagram to confirm this intuition. It is easy to search for images uploaded in a specific location, Amsterdam for example, by people who have a different hometown in their profile. We saw that most sequences of images go through a pattern: most of them have first a series of rather standard Instagram pictures – landmarks, selfies, food – and all of a sudden, there are photos of something completely different. In one case, there was a user who took four photos inside a supermarket.

All this gave us the idea that tourists, especially when visiting a new city, might latch onto the unexpected: something that is not in a guide, not in one's schedule, but something that makes people just say "Oh, this is great, I need to see it, I want to do it".

**Materiality is another concept that seemed to appear in many charrettes. Did your group also make use of physical or material elements, in addition to the digital ones?**

Sure, and this ties in to my previous point. We wanted to set up a small experiment to see how people would react to an ambiguous stimulus, and we did that with a real sensor set up in the co-working space that hosted our charrette. This was a minimal setup, and a real experiment would need more time and space. The idea was to find a dead end, like an alley or something similar and put a sign and a sensor in front of it. We decided to write something unexpected on the sign – in our example, we used 'Free ice cream' – something that feels out of place. Then, we counted how many people explored the dead-end space to check the mysterious sign. This was more a proof of concept than a real experiment, but it was interesting to demonstrate that we could assemble the hardware and software, set it up, and have it running in about two hours. I think this suggests very interesting opportunities for the future.

**ANALYSIS**

Playfulness, improvisation, and experimentation were important factors in the KiBu workshop. To facilitate a productive design process that would lead to a design proposal or concept, lab leader Attila Nemes introduced a few guidelines. However, during the charrette, he emphasized the safeguarding of openness, inclusivity, and ambiguity by enabling participants to collectively decide what subject matter to explore and how to explore it.

The open approach adopted in the charrette demonstrates the values of KiBu, a practice that commonly avoids imposing and enforcing predefined methods. Instead, they allow research methods to emerge from a project, therefore emphasizing each project's particularity in a case by case approach. Those values were also reflected in the lab leader's introduction to the charrette, where he refrained from educating the participants on KiBu's methods – thereby avoiding a dominant student-teacher hierarchy – and instead created an environment of mutual learning where the group – including the lab leader – was accepted as a 'community of practice' that would collectively establish the project's brief, problem statement, research methods, concepts, and outputs.<sup>1</sup> This approach emphasized the social nature of learning and promoted a strong sense of appropriation and ownership amongst the participants by enabling them to contribute to all aspects of the charrette.

The methods the lab leader suggested as guidelines for the design process included collectively proposing and selecting a problem statement by casting votes; co-creating and defining personas of the two user groups (locals and tourists); and prototyping a data collection scenario with motion sensors. The brainstorm session on developing personas was initially dominated by a dissociation from the participants with the proposed users. The group did not identify with their imagined personas, which were portrayed as stereotypical tourists. This created a shared sensation of 'us' and 'them' – the designer as an expert and the user as a novice. After some

<sup>1</sup> Lave, J. and Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

deliberation, the group renegotiated a common ground between the clichéd tourists and their personal experiences as visitors to a city or country, thus embodying humility in their position as designers. The tendency to establish a false dichotomy between the user and designer can be a pitfall in design processes that favor imagined personas over the investigation of actual users. The group's aim to bridge this gap led to the genesis of a data collection method for user research based on data from social media and travel websites that the participants themselves were familiar with, and regularly used, to inform their travels, such as Airbnb, Couchsurfing, and Withlocals.

### METHODS FOR USER RESEARCH

During the charrette, three methods emerged from a brainstorming session on how to conduct user research to substantiate or denounce the fictional personas defined earlier. These methods were improvised and developed through collective dialogue within the group, which unfolded into the following three perspectives: qualitative interviews, digital methods such as social media data analysis, and prototyping a data collection scenario with motion sensors. These three methods required different levels of planning. The interviews were prepared by formulating questions and imagining different scenarios to anticipate reactions and interactions with the interviewees. The digital data collection took place in a more improvisational and playful manner, where several group members conducted exploratory research by studying how different digital platforms could inform them about locals and tourists. The last method – prototyping with a motion sensor – was predominantly playful and improvisational. Due to the charrette's time restrictions, it was impossible to try to conduct a meaningful study on human behavior with motion sensors. Therefore, instead of proposing a detailed real-life scenario, the group decided to introduce a certain level of absurdity and carried out an experiment that would be appreciated as a playful demonstration of the technology. Through role-playing, the participants enacted how the experiment would affect human behavior and how data produced by this experiment would be captured through a motion sensor. This experiment aimed to showcase the potential of such a data collection method, rather than directly inform the problem statement at hand.

### THE DESIGN PROPOSAL

At this stage of the design process, the ideas generated in the initial brainstorm phase and the data gathered on users needed to be distilled and converted into a design proposal. The group, however, faced some difficulties in extracting palpable conclusions from the user research to serve as input for a design concept. The lab leader, therefore, took a more active role in developing this proposal, which resulted in the concept of a 'Surprise Machine'. Not all participants were equally excited about this initiative since it did not correspond with some of the earlier stated values that had been collectively defined. The aim of creating a non-commodified product to bridge the gap between local and tourist was overturned by a proposal that would employ monetary means as the fundamental modus of exchange between the users of the service, and at the same time create profit for the developers. The issue that surfaced here demonstrated a discrepancy between initially stated motives and identified values for social and human-centered design, and the actual design product as an outcome of the design process. The lab

leader expressed the importance of the product's financial model and approached the defined problem from an entrepreneurial point of view – developing a profit-making product and service that would be interesting to investors. This entrepreneurial approach demonstrated a challenging reality in social design that numerous social enterprises face today; how can one design a 'civic' product or service that is profitable? The charrette addressed this duality and exposed the predicaments faced when aiming to safeguard an equilibrium between human-centered values and market-oriented developments in the design of a civic platform.

Moreover, due to time limitations, the charrette participants were not able to test the proposed design concept amongst actual tourists and locals. This would have formed the next stage in their design process and would have triggered a critical reflection on the prototype, initiating a new iteration of concept development and design.

### IN CONCLUSION

This charrette demonstrated how experimentation, horizontality, and playfulness can be fruitful approaches in a collaborative design process. It invited participants to propose ideas that were not fully developed or substantiated in an open environment, to then be passed on and co-developed in more detail collectively. It also allowed participants to externalize their interests and identities, and to then jointly construct a shared group identity and a common goal. Once this shared identity had been negotiated and established, the group could split into sub-groups, each deploying different research methods to explore the subject matter, without risking the group's disintegration and divergence into different proposals.





# CENTRE FOR DESIGN INFORMATICS: BLOCKCHAIN CITY

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**EXPLORING POSSIBLE FUTURES WITH DESIGN FICTION, TECHNOLOGY PROBES AND EXPERIENCE PROTOTYPING**

## THE LAB

The Centre for Design Informatics is a research group situated across the schools of Edinburgh College of Art and Informatics at the University of Edinburgh. The Centre's central concern is the increasing flow of data in society and, in particular, its consequences for interaction between humans as well as between humans and things in relation to newly emerging complex digital economic systems. What kind of value systems underpins the organization of these flows of data, and what alternatives are thinkable?

The projects the Centre engages in typically aim to build and test working data-driven prototypes. These products and services aim to 'eff' (express, make experienceable) the ineffable: they make real the ideas that underpin the emerging algorithmic society. Through their proto-

types, probes and design fictions, the Centre wants to make tangible ideas that otherwise seem abstract and over-complicated. Similarly, researchers at the Centre build systems that give glimpses into near future social, technical and economic experiences, starting from the adage 'When people can see what might happen – and what might go wrong – they are better placed to shape what should happen.' As such the Centre aims to shape the debate about the development and impact of new technologies by creating alternative imaginaries for their future use.

For instance in their ThingTank project, carried out in collaboration with Elisa Giaccardi (TU Delft) and Neil Rubens (University of Electro-Communications, Tokyo), various probes for smart things were designed around which future use scenarios were envisaged. The point of departure for the ThingTank was the idea that 'things' may soon know more about our lives than we do and may also be able to make suggestions about what is missing. As one example, a set of cutlery was designed that was able to measure health-related data of the food consumed with it. It was to spur a debate around questions such as: Who would have access to these data? What would the uptake of such eating utensils mean, and how would it change the way we organize our meals? And what counter-strategies would consumers come up with to game the technology, to make it think they were eating healthier than we actually were? By developing technology probes and design fiction scenarios, it was the aim to identify novel patterns of use within the data that is streamed through the interaction between people and things, and between things and things.

## THE CHARRETTE

If the representation of economic value is changed, does the value it represents change as a consequence? Chris Speed, Dave Murray-Rust, and Larissa Pschetz from the Centre for Design Informatics (CDI) from Edinburgh, led a charrette on the future of blockchain transaction technologies to explore possible answers to this dilemma. Drawing from the interdisciplinary background of CDI, participants in the charrette were introduced to technology probes, experience prototyping, and design fiction as methods to begin imagining alternative economic systems built around blockchain technology and using crypto-currencies such as Bitcoin.

The CDI methodology demonstrated in this charrette exemplifies a combination of speculation, deployment, and prototyping, all carried out in a playful and accessible manner. In this specific case, the challenge was to make the complex mechanics of the blockchain understandable to designers, theorists, activists, and coders alike. We point towards this methodology as an effective way to 'think through' the interplay of digital and non-digital practices – in this case, offline and online transactions. Participants were invited to think about 'the affordances of money if it were to become software', to unpack the economic systems that govern everyday digital transactions and to explore alternative ways of conceptualizing them.

## BLOCKCHAIN, BITCOIN, AND SMART CONTRACTS

The blockchain is a means for the peer-to-peer exchange of value; it was formed as a reaction

against the centralized power of third parties, such as banks or governments, over monetary transactions. It is a distributed database that tracks completed and ongoing transactions. This technology disrupts the asymmetry that sometimes exists in the digital age – as in the case of the data created by us being owned by a handful of powerful companies or governments – and enables everyone to take part in the decision-making system instead of being an inert recipient.

Blockchain records not only show which transactions are completed but also contain other structured information. For instance, the best-known virtual currency, Bitcoin, can be used for any type of 'smart' contract that can be initiated, verified, and enforced electronically. The charrette tackled this issue in particular, i.e. how blockchain technology can create user-generated contracts between citizens and help us imagine new economic systems. This meant addressing the values underpinning the current economic system, and exploring what other kinds of values it might be possible to exchange, as well as how blockchain technology could exert control or offer incentives to citizens.

## METHODS: TECHNOLOGY PROBES, EXPERIENCE PROTOTYPING & DESIGN FICTION

CDI employed a methodology that combines three HCI design research methods (Figure 1). Technology probes collect data about the use of new kinds of technologies in a real-world setting, and inspire users and designers to reflect on the use of that technology<sup>1</sup>. Experience prototyping extends the scope of traditional prototyping to investigate the role of the product in users' lives and the contextual factors influencing this role<sup>2</sup>. Lastly, design fiction involves any kind of media prototype used to explore and critique future possibilities in design, and to open up a space for discussion<sup>3</sup>. These methods were carried out in the charrette through three exercises.

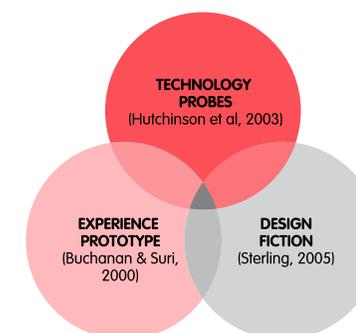


Figure 1 - The methods used in the CDI charrette.

- <sup>1</sup> Hutchinson, H., et al. (2003). 'Technology probes: inspiring design for and with families'. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '03)*, 17-24.
- <sup>2</sup> Buchenau, M., & Suri, J. F. (2000). 'Experience prototyping'. *Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques*, 424-433.
- <sup>3</sup> Sterling B. (2005). *Shaping Things*. Cambridge, Massachusetts: MIT Press.

## BLOCKCHAIN WORKSHOP WITH LEGO

To familiarize the participants with Blockchain technology, the CDI team first presented the logic behind its functioning and then asked the participants to enact Blockchain transactions by trading LEGO bricks for different resources like barley, oil, and sheep. The workshop method, entitled Block Exchange allows participants to record their transactions by sticking their initials on LEGO bricks towered up on a base plate, a material representation of the Blockchain ledger.<sup>4</sup> While the group was exchanging resources with each other, two of the participants were assigned to perform symbolic 'Blockchain mining' by solving mathematical calculations in a given time period; the winner earned additional LEGO bricks.

The rules of trade changed every five minutes. The main aim of the first round was to achieve a more diverse portfolio of resources where each resource cost one LEGO brick, whereas the second and third rounds involved trading resources for more bricks, such as one sheep for four bricks or one unit of oil for six. All of these changes slowly prepared the group for the last rule change, which was also the principal objective of this exercise - to experience open trading with an unregulated currency and to inspire some radical propositions. When commodities are taken away from the game, what other things become valuable enough to be tradable? The things that were offered for sale in this last round varied from material (e.g. pens) to services (e.g. singing a song with the buyer's name in it) and political statements (e.g. pension funds).

## BITCOIN CAPTURE IN THE WILD

After the participants had familiarized themselves with the blockchain concept, the charrette team introduced a mobile platform they had developed called 'Geocoin'. The platform used GPS to map and circulate Bitcoins in physical hotspots, i.e. areas having a direct effect on the balance of one's Bitcoin wallet. This 'technology probe' used virtual boundaries (geofences) to separate physical spaces and associate them with economic values. Fifty GBPs worth of Bitcoins were distributed in hotspots around the venue, which were displayed as markers on an Amsterdam map.

- Green markers gave a small amount Bitcoins, but one kept on earning them as long as they was standing on the marker.
- Black markers gave a large amount of Bitcoins, but only once.
- Red markers were traps that ate up one's Bitcoins as long as the person was standing on the marker.

The functions of the markers were not revealed to the participants; they were asked to go out and discover what the rules of the transactions were for about 40 minutes. After reconvening, the participants were shown their transactions and given a more comprehensive explanation of the relationship between the locations and the number of Bitcoins. An example given to concretize

a possible use of this platform was if a hospital was a red marker, it could automatically take donations from the citizens, or if there were a green marker at a shop, it could entice the citizens to visit the shop.

## DESIGN FICTIONS FOR A NEW VALUE ECONOMY

After experiencing the Geocoin platform, participants formed two groups and discussed how algorithms and digital currency might be used in physical spaces. They were prompted to think about specific locations and conditions, such as transport companies charging customers only if their bus arrives on time. After this discussion, groups were asked to create an 'experience prototype'. A programmer was contacted through Skype to discuss how to prototype the proposed ideas. Additionally, participants were asked to produce a 'design fiction' video explaining their take on blockchain technology in city life. This involved presenting the meta-context for their idea, a situated story with a human dimension, and a demo of their experience prototype. They were asked to script, storyboard, shoot, and edit their video during the second day.

Two provocative design concepts were sketched in this charrette. Handfastr focused on marriage - one of the oldest forms of social and economic contract. The team appropriated the marriage concept from the state and the church and turned it into a temporary mobile agreement to be performed anywhere and at any time. By creating a mobile application based on the Geocoin platform, the team aimed to enable impromptu financial commitments between people in public space. The second concept, Civic Blocks, was about involving citizens in taking decisions about their city. The team used blockchain technology as a means to enable citizens to allocate Bitcoins to their favorite projects in the city, as a sort of a transparent participatory city budget.

## INTERVIEW

**Did this design charrette follow your usual process for a workshop, or did you adapt your methodology in any way?**

In general, we try not to work with 'off the shelf' methods. For example, we encourage our students to be inspired by a methodology and then to reconfigure it to suit their specific research. Every project is different, and the charrette we conducted for Design & the City combined different methods we have experimented with in the past. For instance, we usually conduct shorter workshops but, in this case, we wanted to discuss complex topics like blockchain technology and transaction methods, and having two full days at our disposal allowed us to integrate different perspectives. On the first day, we began by demonstrating blockchain transactions and enabling our participants to try them out for themselves. This gave us good foundations to build on, as we presented some 'unfinished products' to elaborate. This is a key point: to develop something from scratch is not often feasible in the context of a workshop and, for this reason, we provided a basic transaction app and about £50 of actual Bitcoins to experiment with. Participants were able to experiment with some scenarios we pre-developed, and we had a programmer available to do some on-the-fly prototyping.

<sup>4</sup> www.blockexchange.designinformatics.org.

**Did playfulness have a role in your charrette?**

We should be careful here, as whenever you mention the word ‘play’ it evokes certain literature and connotations. For example, when we demonstrated blockchain transactions with LEGO bricks at the beginning of the charrette, we purposefully avoided using the word ‘game’ to make sure participants did not approach the experiment as if they were playing Monopoly.

Conversely, we recognize playfulness in the ‘open-endedness’ of the system we experimented with, rather than in the actual LEGOs that were used as a demonstration. If we think about how the unstructured, unfinished nature of the platform we set up to be ‘handed over to the participants’ we see that it was definitely open-ended, and play is a great term to describe what we have been doing. And, without any doubt, we had fun. All our outcomes, especially the speculative video prototypes, were at the same time quite fun and very serious.

**What did your participants do to understand and represent your potential users?**

In the final presentation, while we were discussing with participants and organizers from the other charrettes, we noticed an underlying tension between those who had relied on personas and similar abstractions, and those who hadn’t. We were in a peculiar situation because blockchain technology is conceptually complex, and only part of the community fully understands it.

Some of our participants started with assumptions about personas, and then went out to interview real-life stakeholders to confirm that. But I guess it was less an attempt at constructing a holistic persona and more a test to check whether they were touching the ‘right’ ways in which transactions were conceptualized. For example, one of the speculative video prototypes that was developed in conclusion of our charrette used the concept of marriage as an example of a transaction that might be carried out through blockchain. This is clearly a provocation, but also an attempt at probing something that potential users understand, to ground and make concrete a mechanism as abstract as the blockchain.

In this sense, storytelling became a way to explore stakeholders’ conceptualizations, understanding, and behaviors. Abstract notions may be intractable, ‘out-of-this-world’, and our participants reacted by making video prototypes that are definitely set in the real world, in real places, and addressing potentially real practices. By doing so, they made their stakeholders believable. That allowed us to show the videos to real people – in the final public presentation, for example – and to gauge real reactions to a plausible use, rather than general reactions to abstract mechanics.

**I find it interesting that your charrette went from tinkering with LEGO to experimenting with algorithms, and finally to making video prototypes. Would you comment on the different degrees of materiality you explored in your charrette?**

Making the blockchain physical was the main problem we had when planning our workshop. Most participants, in the beginning, had a difficult time relating to the blockchain existing mostly in the digital domain. It is difficult to picture a blockchain, and that is where we got our idea of using LEGO bricks. Some participants struggled with the lack of physical components in block-

chain technology until they found their own personal way of framing it. And once they had a concept for a possible use case, and they could act it out. In this sense, the ‘bodystorming’ method, an embodied brainstorming, was particularly useful. People’s bodies are into play whether they interact with hardware, or software, or more complex combinations of iPhones, landscapes, virtual coins, and society around us.

Also, having some real software to try out helped, even if our programmer had to work to the last second to make it work. It was a close call. It was being written on Monday night while we were having a beer after the first day of the charrette. We ourselves did not really know what we were going to get on Tuesday morning, which was a bit stressful but maybe made it more interesting as well.

Having ‘real’ money also helped to make the experience more physical and tangible for our participants. We decided to use real Bitcoins, with actual monetary value, when we could have just used arbitrary numbers in a database representing coins. But there was something powerful, I think, in experimenting with £50 or £60 worth of Bitcoins. That was an odd thing, regarding its tangibility: it was real money, but sometimes it did not feel that way. Looping back to how participants conceptualized the blockchain and Bitcoins they were experimenting with, it was only when they could come up with a concrete story or a use case scenario that they could grasp the abstract mechanisms in an accessible way. In the end, asking participants to produce video prototypes was a good idea to push them to act out and materialize their understanding of the blockchain.

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**ANALYSIS**

The CDI charrette followed a clear step-by-step structure towards integrating blockchain technology into the physical places in the city to imagine new systems of value exchange. The first exercise in this regard, the re-enactment of Bitcoin exchange through the LEGO Block Exchange workshop, was a sensitization exercise for the participants, to help them get their heads around the complex computational Blockchain process. It also helped the participants to start thinking about a new digital and unregulated form of market trading, so it was a necessary first step to prepare for the activities that were to come. The next exercise, in which the participants used a technology probe to capture Bitcoins in the city, was intended as a real-life use scenario to demonstrate how the blockchain technology can be integrated into physical locations in the city. Technology probes are different from design or research prototypes in that they are built with the intention of challenging current practice and influencing future design.<sup>5</sup> They are not an early version of a technology that researchers are seeking to develop or test, but rather a method of reflecting on that technology. These probes are a form of ‘speculative design’ in

<sup>5</sup> Hutchinson et al.

<sup>6</sup> Auger, J. (2013). ‘Speculative design: crafting the speculation’. *Digital Creativity*, 24(1), 11-35.

this sense, where the purpose is to enable us to critique and think about the future.<sup>6</sup> Using the Geocoin probe during the charrette achieved its purpose very well; it was a catalyst for the later discussions about what kind of locations were meaningful to include in the new economy, and therefore, was a useful step towards the ideation phase.

### EXPERIENCE PROTOTYPING

The last exercise involved creating an experience prototype and communicating the design concept through a design fiction video. Experience prototyping as a method has to do with allowing the designers, clients or users to experience the product themselves in a way that is (partially) situated in the real use context. It is intended for designers to think of the design problem in terms of attaining an integrated experience, rather than creating an isolated artifact.<sup>7</sup> Creating an experience prototype involves role-playing, building environments and scenes, and rehearsing the use of the product in these scenarios. During the charrette, the experience prototypes helped the participants to immerse themselves in imagining how it would be to live with the physical, dynamic and social aspects of their product concepts. This method fits well with this charrette for two reasons: first, the participants did not have time to test their concepts with actual users and observe the impact of their ideas at the city level. While experience prototyping creates only approximate simulations of the real experiences others will have, it still brings a subjective richness to bear on design problems. Second, the charrette was mainly an exercise on the alternative uses of the blockchain. So, role-playing with the experience prototypes helped to build a vision without necessarily limiting the participants to the realities of the current socio-economic systems, and constituted the primary component of the design fiction videos.

### FICTION AND NARRATIVE IN DESIGN

Using fiction and narrative is not new in the design field, but what is new is that fictional practices are now being considered as viable pathways for producing valid knowledge in design.<sup>8</sup> Design fiction has the ability to experiment with situations that do not currently exist.<sup>9</sup> It can take the form of stories, films, objects, and prototypes. During the charrette each group experimented with shooting a video, which was intended to document the experience prototype, present a meta-context for it, and open a discussion with the audience about the possibilities of integrating new technologies into the economy. Both teams used design fictions to address the implicit social and political context of these two ideas. DiSalvo (2012) argues that design fiction must present ideas and objects in ways that can be interrogated and challenged, otherwise

<sup>7</sup> Buchenau & Suri.

<sup>8</sup> Markussen, T., & Knutz, E. (2013). 'The poetics of design fiction'. *Proceedings of the 6th International Conference on Designing Pleasurable Products and Interfaces*, 231-240.

<sup>9</sup> Lindley, J., & Coulton, P. (2015). 'Back to the future: 10 years of design fiction'. *Proceedings of the 2015 British HCI Conference*, 210-211.

<sup>10</sup> DiSalvo, C. (2012). 'FCJ-142 Spectacles and Tropes: Speculative Design and Contemporary Food Cultures'. *The Fibreculture Journal* 20 (2012): Networked Utopias and Speculative Futures.

they turn out to be simplistic provocations.<sup>10</sup> This was a concern for the charrette participants as well. They were explicitly cautious about the ethical implications of their bestowed power when deciding how some lines of code could affect the behavior of citizens. Overall, creating design fictions was a fruitful method to recognize and shape the impact of their design ideas on society.

The overarching component of the methods used in the charrette was playfulness. From the exchange of LEGO pieces to hunting Bitcoins in the streets of Amsterdam or role-playing new economies, a play dimension was present in all the methods chosen. In the former, the play component served the purpose of providing insights into the complex blockchain platform. Although this exercise did well in explaining the fundamental concepts and structure of the system, the participants sometimes considered its rules unclear, e.g. whether it was possible to exchange resources without paying with LEGO bricks, or according to which future state one was required to invest in a particular resource. These open rules, however, also allowed the exercise to be adaptive. The CDI team mentioned that they had carried out this exercise on five previous occasions and that it has evolved on each occasion.

While the LEGO exercise was a simulation type of game, the technology probe and experience prototyping were slightly different. In the former, finding out what the hotspots in the map were for transformed interaction with the probe into a sort of concealed-rule game. Furthermore, although the group was not explicitly motivated to do so, there was an implicit competition between participants to win the most points during this exercise. Experience prototyping was a role-playing game in which participants experienced their concepts in their actual contexts. All of these uses of play provided an engaging and enjoyable ideation environment during the charrette.

## IN CONCLUSION

To conclude, in the capitalist system every aspect of human life has been transformed into a commodity to be exchanged. The system has its own established rules and economies. With the advancement of new technologies, however, these economies are open to being questioned. The Blockchain City charrette demonstrated that blockchain technology could be one way of providing a paradigm shift in imagining alternative means of exchange. Creating design fictions was the main method chosen to tackle new uses of this technology and its ethical and social implications on society. As was also noted by the charrette leader during discussions, the concepts generated by the participants went well beyond 'just gamifying the city', which would have been an obvious use of the blockchain. This was the success of the the CDI team, the charrette, and its chosen methods.

The design fiction videos of the charrette participants can be seen at the following links:

Handfastr: [www.vimeo.com/163565402](https://www.vimeo.com/163565402)

Civic Blocks: [www.vimeo.com/163760240](https://www.vimeo.com/163760240)



## CONCLUSIONS

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With the emergence of the smart city as an urban ideal, a human-centered design approach has become an urgent theme. New methodologies are needed to put citizens at the center of (urban) design processes. How can citizens be included as 'actors' when designing for smart city technologies and services, rather than as mere 'factors'? And what methods could designers use to come to conceptualize citizens not simply as 'users' but 'full human beings' with personal histories, desires, emotions, and complex needs? In the broader field of design research, the notions of human-centered design<sup>1</sup> and third-wave design<sup>2</sup> provide effective tools with which to investigate these questions. As cities become more and more augmented with digital technologies – and thus arguably 'smarter' – we see the opportunity and the urgent need to connect these methodological reflections on design research to the concrete and often bottom-up practices of urban design, city-making, and community organizing. This was our rationale for inviting five leading living labs from around the world to demonstrate their methodologies in charrettes hosted at the Knowledge Mile in Amsterdam.

### A PRODUCTIVE DIVERSITY

As is described in the five chapters above, the different labs each took up our invitation in their own way, bringing their own tools, approaches and practices, and also addressing different

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<sup>1</sup> IDEO.org. (2015). *The Field Guide to Human-Centered Design*. IDEO. Retrieved from [www.designkit.org/resources/1](http://www.designkit.org/resources/1).

<sup>2</sup> Bødker, S. (2006). 'When Second Wave HCI Meets Third Wave Challenges'. In *Proceedings of the 4th Nordic Conference on Human-Computer Interaction: Changing Roles*, 1–8. NordiCHI '06. New York, NY, USA: ACM; Bødker, S. (2015). 'Third-wave HCI, 10 years later – participation and sharing'. *Interactions* XXII.5 September-October, 24.

aspects of the design process. Fields of View (India) and Waag Society (the Netherlands) focus on activating citizens through workshops; KiBu (Hungary) and the Centre for Design Informatics (United Kingdom) respectively address startups and students with ad hoc interventions that also consider public spaces; and the Ideal Lab is a series of initiatives coordinated by Ralston & Bau (Norway/France) to immerse makers and designers in urban contexts to spark reflection and generate new concepts.

As we mentioned, this book is not a systematic study. Our Lab of Labs initiative embraced the messy, emergent and ad hoc nature of situated urban processes. Instead, it should be understood as a curated set of vignettes that exemplify the breadth and variety of citizen-centered design approaches. In other words, this is not meant to be a definitive catalog, but a starting point to provide inspiration and show the heterogeneity of this field.

In line with the diversity of our guest labs, the researchers who observed the charrettes and co-authored the five chapters also come from a variety of perspectives. Again, we take what would have been problematic in a strictly systematic study, and we turn it into a lens – or maybe a kaleidoscope – to multiply the points of view. All the authors who collaborated in writing this book share a background in design research, but they bring a broad epistemological palette to our discussion. In their reports and analyses, our authors have referenced a variety of theories: from sociology to philosophy, narratology, ethnography, game design, computer science, and more. Likewise, we encouraged them to observe and document the charrettes from their own professional and disciplinary standpoints. This volume features chapters co-written by academic researchers, PhD students, and practicing designers. We interpret all of it as a clear symptom that these new kinds of participatory, bottom-up, citizen-centered design approaches are indeed in a prime position to spark an effective interdisciplinary dialogue.



In sum, we see this productive heterogeneity as a first takeaway offered by this volume. Urban spaces are getting ‘smarter’, more complex, and more diverse: our experience with the five charrettes composing the Lab of Labs suggests the need for design teams and approaches that are interdisciplinary, inclusive, open-ended, and even somewhat messy – just like the cities we are designing for.

### A SHARED CONCERN AND TWO UNEXPECTED RESOURCES

As varied as the five charrettes were, a number of similarities emerged across all our invited labs. All our guests shared the objective of being ‘citizen-centered’, in the same vein as the well-known concept of human-centered design. If urban spaces are augmented with sensors, displays, microcontrollers, and other input/output devices, then the distinction between city planning and human-computer interaction design becomes blurry, merging perhaps into a new interdisciplinary field of urban interaction design.<sup>3</sup> Just as interaction designers strive to put users at the center of their process, the methodologies we documented here shared a rather complex conceptualization of citizens.

Furthermore, we documented the five charrettes adopting some unexpected tools to guide and facilitate the design process. We observed our participants not only ‘making’ physical prototypes to explore and generate concepts, but also doing so in a process that deliberately foregrounds playfulness, storytelling, and in some cases both. This follows the growing acceptance of ‘making’ as a design practice (exemplified, among others, in ‘hackerspaces’ and DIY communities), but it adds an extra twist. As we sum up our report of the Lab of Labs, we would like to devote some final reflections to the traits that emerged from all the charrettes in order to synthesize and offer them as resources for further design.

### CITIZENS: PERSONAS OR PEOPLE?

All five labs found it important to take ‘full human beings’ into account in their design process. Yet, the processes they employed in order to conceptualize their potential users varied widely. In synthesis, we could schematize this discussion as a tension between personas and people. As an additional dimension, data collection methods and time constraints (‘timeboxing’) also played a role in this discussion.

“We don’t design for personas, we design for people,” Birgitta Ralston stated during the final presentation of the Ideal Lab charrette. Indeed, personas – constructed characters that aggregate various facets of potential users – are now almost a commonplace among designers, who metaphorically wear their users’ masks to understand them and their needs. Ideal Lab programmatically refrained from using this method and devoted significant time and energy to collecting

<sup>3</sup> Brynskov, M., et al. (2014) Urban Interaction Design: Towards City Making. Retrieved from UrbanxD/Booksprints. [www.booksprints-for-ict-research.eu/wp-content/uploads/2014/06/Urban\\_Interaction\\_Design\\_Towards\\_City\\_Making.pdf](http://www.booksprints-for-ict-research.eu/wp-content/uploads/2014/06/Urban_Interaction_Design_Towards_City_Making.pdf).

and curating narratives from local stakeholders as an alternative point of departure. To gather these narratives, participants went out to hold unstructured interviews that were then reported to the group at large. Photos of the people they met in the streets of Amsterdam were put up in the design studio to remind the group of their stories and backgrounds. A key recommendation given to participants was to focus not only on what was recounted by the interviewees, but also to ask themselves what was absent or left unsaid. More general themes were distilled by discussing and analyzing this source material, and these constituted a stepping-stone that allowed – given enough time – the development of more refined design concepts. In more extensive projects, the Ideal Lab works with agents having backgrounds in various disciplines who are asked to stage some sort of intervention – usually in public space – to bring out local issues.

Whereas Ideal Lab exemplifies one end of this continuum, the other labs were distributed throughout the spectrum. Fields of View, for instance, usually works with stakeholders who play themselves, bringing in their actual position and stakes. As Bharath M. Palavalli explained their approach, “Using personas may bring biases into the design process and, second, we risk not understanding how much stakeholders are invested in the end object.” Waag Society emphasizes the development of personas that are grounded as much as possible in field research, as opposed to stereotypes that workshop participants may, consciously or not, derive from their own sociocultural contexts. KiBu ‘hacked’ an interesting and time-effective method: what digital traces did the intended users – in KiBu’s case, tourists visiting Amsterdam – leave on various digital platforms, and what could be inferred from analyses of that material? In this way, Attila Nemes and his group of participants could quickly substantiate some of the assumptions behind the personas they created by scraping data from social media. Both Waag Society and KiBu charrettes also leveraged forms of role-playing to enable participants to temporarily ‘walk in the shoes’ of their personas, making use of simple props. This helped, in Nemes’ view, to overcome false dichotomies between designers as experts and stereotypically portrayed users that are considered novices.

### THE POWER OF MAKING

With respect to methodology, we find the use of physical props quite significant and resonating with the broader move towards ‘making’ in design.<sup>4</sup> In this sense, the use of LEGO bricks – demonstrated in the Center for Design Informatics charrette – to make more understandable the principle of the blockchain is exemplary. We observed designers leveraging simple material tools as supports to construct shared conceptual representations that made it easier for participants to cooperate and contribute to their workshop. In other cases, such as Waag Society’s charrette, other props were employed less as ‘creativity supporters’ and more as collaboration tools to mark specific activities and put participants in a specific frame of mind: for example, some attendees were given a pair of cardboard glasses to wear when role-playing a persona,

as a reminder that they were not speaking for themselves but on behalf of a specific type of users.

In all charrettes the participants moved back and forth between discussing and making physical models and prototypes, leading in turn to further debate and iteration. The act of making forced participants to put high-level philosophical ideas into actual practice. Translating perspectives or interests into actual prototypes or rule sets for games or scenarios, in turn, made these perspectives concrete and debatable. As Paulien Melis from Waag Society put it: “People can ideate and be philosophical about their process as much as they want, but when they transform ideas into tangible objects, they face the necessity to make hard choices.”

Interestingly enough, the emphasis on making physical prototypes also opened the way – at least in one case – to broader discussions about the economic viability of particular solutions. This aspect surfaced most prominently in the charrette organized by KiBu, where debating the possible ‘look & feel’ of their speculative Surprise Machine led to a broader and unprompted reflection on the ethical and political tensions that are often part of social design and civic economy. How can one design a product or service that creates public values, while also bringing in enough revenue to sustain it over time? How can human-centered values and market-oriented developments be reconciled in the design of civic platforms? These are not the kind of considerations that one would assume to follow from thinking about the physical components of a prototype, and they provide us with further evidence of the importance of materiality in ‘thinking through’ seemingly intractable problems.

### STORYTELLING AND PLAYFULNESS AS DESIGN RESOURCES

In addition to using many qualitative methods to understand and conceptualize their potential users, most labs also leveraged games and stories. Making games, playing them, and collecting and retelling short narratives were all used as inspiration, conversation starters, and even design tools.

As suggested by the genre of speculative fiction and other ‘thought experiments’, even the simplest narrative produces a fictional world that can be manipulated as its creator wishes. By turning to these simpler and more tractable worlds, designers can explore hypotheses and counterfactuals, quickly iterating through series of ‘what if’ situations that would otherwise be difficult to pin down. As design researcher Josh Tanenbaum puts it, “These aren’t simply scenarios or personas: they are stories”.<sup>5</sup> In other words, as was noted in the Waag Society charrette, storytelling is often used to create ‘sandboxes’, safe spaces to experiment freely with different solutions. And, indeed, we observed narratives being supported by a variety of tools – including the Story Puzzle that, through symbols and material constraints, helped designers to bring out

<sup>4</sup> Ratto, M., Boler, M. (eds.). (2014). *DIY Citizenship: Critical Making and Social Media*. Cambridge: MIT Press.

<sup>5</sup> Tanenbaum, J. (2014). ‘Design Fictional Interactions: Why HCI Should Care About Stories’. *Interactions* 21(5): 22–23. [www.doi.org/10.1145/2648414](http://www.doi.org/10.1145/2648414).

various short story-like fragments about the personas they had in mind. The associative use of icons in this puzzle prompted an open interpretation of possible events and solutions.

Using a slightly different approach, the Ideal Lab tasked participants with collecting, curating and synthesizing actual stories from local interviewees, instead of producing fictional ones. As was discussed above, this is a significant difference regarding data-collection methods, but it equally taps into the power of storytelling. In this case, a selection of stories was used to describe the complexity of relationships between stakeholders, and functioned as a canvas to represent the integrated insights of the explorations in the charrette.

In his interview, Bharath M. Palavalli of Fields of View recalled: “Some of the problem statements that the participants proposed were already quite game-like, and so – as a small provocation – I challenged them to try to make actual games out of them.” And, indeed, many of the products from Fields of View are games, or playful workshop exercises, that invite participants to reflect on a particular issue. The goal is not to simulate a given situation as accurately as possible, but to make particular points of view and conflicts between actual stakeholders experienceable.

As some sort of synthesis of all these positions, we can point to the design fictions produced in the charrette led by the Centre for Design Informatics. Design fiction is both a narrative genre and a design method<sup>6</sup> that visualizes, communicates, and explores how ‘it might feel’ to live in a possible future with different technologies. Whereas science fiction writers are concerned with metaphorical representations of our world, researchers may leverage design fiction to prompt reflection and gather insights from potential users – or, in our case, citizens. The Centre for Design Informatics charrette indeed produced various imaginations of a future in which new technologies (a blockchain, in their specific case) could lead to new ways of producing and understanding value.

What is common to all the playful stories produced in the five charrettes is that they are much richer than a functional flow-chart of user options. It is not a question of helping designers in optimizing a ‘customer journey’. Instead, what was produced in many of our charrettes were stories that designers used as ‘objects to think with’ to make more tractable the conflicting positions around given issues, bringing them out in all their complexity.<sup>7</sup> Another concrete takeaway that we can tease out from the Lab of Labs is, in conclusion, the usefulness of narrative and play in design methodologies. Good stories and good games are easily understood, shared, and iterated upon to produce knowledge and insights about multi-dimensional users, the ‘full human beings’ that we ultimately want to design for.

## TO CONCLUDE: AN INVITATION TO MORE EXPLORATION

Creating a citizen-centered smart city will rely also on finding new, holistic ways to understand people and design their interaction with technology. A human-centered design approach starts by bringing together a broad variety of stakeholders around an issue while gaining an in-depth understanding of their various interests and perspectives, perhaps leading to a re-framing of the original problem. As our cities become multifaceted, we hypothesize that citizen-centered design should tackle this complexity and make it more tractable without trivializing stakeholders and their desires. What we have observed in the Lab of Labs is that there is no single way of accomplishing this, but rather a space of opportunities for interdisciplinary dialogue, where the themes of materiality, making, play, and storytelling resonate productively.

We have curated and presented a diverse set of possible approaches to citizen-centered design. What we have put together should not be interpreted as the definitive guide, but as a palette of possibilities to inspire designers, public administrators, businesses and citizens alike. There is, of course, much more work to be done in this direction, and we conclude by calling for more exploration and experimentation. As complexity and social tensions increase in our cities, we urgently need better methodologies to understand and approach them through design.

<sup>6</sup> Shedroff, N., Noessel, C. (2012). *Make It So: Interaction Design Lessons from Science Fiction*. Brooklyn, N.Y.: Rosenfeld Media.

<sup>7</sup> Turkle, S. 2007. *Evocative Objects: Things We Think With*. Cambridge: MIT Press.

## COLOPHON

**The Lab of Labs was a two-day event that consisted of five design charrettes that each explored a variety of methods for living labs and human-centered design research practices. It took place in Amsterdam on 19-20 April 2016.**

### DESIGN & THE CITY

The Lab of Labs was organized as part of the Design & The City conference. Design & The City explored citizen-centered design approaches to the smart city. The central theme was the role of design and designers in creating opportunities and practices for citizens, (social) entrepreneurs, and policymakers towards more livable, sustainable and sociable urban futures.

Design & The City and the Lab of Labs were organized by the University of Applied Sciences (AUAS) and the Knowledge Mile: an applied research ecosystem in the heart of Amsterdam. The event took place in 2016: the year of the Dutch EU Presidency, during which a declaration on the European Urban Agenda was defined.

[www.designandthecity.eu](http://www.designandthecity.eu)

### THE KNOWLEDGE MILE

The Knowledge Mile is an applied research ecosystem in the heart of Amsterdam, consisting of three universities of applied sciences, citizens, organizations, companies, and the municipality of Amsterdam.

The Knowledge Mile is an initiative of the Amsterdam Creative Industries Network. Founded by the AUAS, Inholland University of Applied Sciences and the Amsterdam School of the Arts, the network's aim is to connect various parties on the intersection of digital technology and creative industries.

[www.knowledgemile.amsterdam](http://www.knowledgemile.amsterdam)

[www.amsterdamcreativeindustries.com](http://www.amsterdamcreativeindustries.com)

### PLAY & CIVIC MEDIA

Design & The City was organized on behalf of the Amsterdam University of Applied Sciences by the research group of Play & Civic Media. Play & Civic Media manages research & education programs in the fields of immersive, playful and civic media such as virtual reality, serious games, online platforms, and digital placemaking.

Games, playfulness and (digital) storytelling are key aspects of our work, as these have become important features of contemporary digital media. One of our particular interests lies in the notion of playful empowerment. How can the design of playful interfaces empower citizens to improve or maintain the quality of their individual and collective lives?

We favor a 'research through design' approach. We try to understand the world around us by shaping it, in close cooperation with our research partners, and always from a humanistic design perspective.

[www.playandcivicmedia.nl](http://www.playandcivicmedia.nl)

### THE LAB OF LABS

The Lab of Labs was organized by Gabriele Ferri, Martijn de Waal, Kim Hagenaar, Twan Eikelenboom, Maarten Terpstra, Jennifer Veldman and Ellis Buis. Five labs each held their own two-day design charrette in cooperation with a local partner at the Knowledge Mile in Amsterdam. The outcomes of the labs were presented and discussed at a public event in the evening of the second day, moderated by Tracy Metz.

### THE IDEAL LAB

Birgitta Ralston & Alexandre Bau

[www.ideal-lab.org](http://www.ideal-lab.org)

Lab theme: Roots and Identities

Local partner(s): Heritage Lab (Reinwardt Academy)

[www.reinwardtcommunity.nl/nl/page/17065/heritage-lab](http://www.reinwardtcommunity.nl/nl/page/17065/heritage-lab)

### KITCHEN BUDAPEST

Attila Nemes

[www.kibu.hu](http://www.kibu.hu)

Lab theme: Hyperlocal Civic Platforms

Local partner(s): WeWork

[www.wework.com/l/amsterdam](http://www.wework.com/l/amsterdam)

### FIELDS OF VIEW

Bharath M. Palavalli

[www.fieldsofview.in](http://www.fieldsofview.in)

Lab theme: Designing for Dialogue and Sociality in Smart Cities

Local partner(s): AUAS MediaLAB Amsterdam (Gijs Gootjes & Marco van Hout) /

<http://medialabamsterdam.com/>

### WAAG SOCIETY

Paulien Melis

[www.waag.org](http://www.waag.org)

Lab theme: Designing Inclusive Interactions

Local partner(s): Waag Society

### CENTRE FOR DESIGN INFORMATICS

Chris Speed, Larissa Pschetz, Dave Murray-Rust

[www.designinformatics.org](http://www.designinformatics.org)

Lab theme: Blockchain City

Local partner(s): The Student Hotel

[www.thestudenthotel.com](http://www.thestudenthotel.com)

## LAB-OF-LAB PUBLICATION CONTRIBUTORS

During the event, each lab was followed by one or two researchers who documented the process and contributed to this report.

**Megan Anderson** (researcher & contributor) is a Design Researcher at STBY, an Amsterdam and London-based design research agency. She has worked on a number of design research projects across a range of sectors and organizations including Google, the London Fire Brigade, Square, and Thames & Hudson. She is passionate about design-driven innovation and about involving users at various stages of service development.

**Nazli Cila** (researcher & contributor) is a design researcher at the Faculty of Media and Creative Industries, Digital Life Centre research group. She studied product design and obtained her PhD degree from Delft University of Technology, Department of Industrial Design working on the topic of how designers can create effective and aesthetic metaphors to communicate with users through products. She has presented her work at numerous international conferences and published in preeminent journals such as Design Studies, the International Journal of Design, and Empirical Studies of the Arts. Her current research combines data-driven design and design anthropology, in which she aims to better understand people and offer design solutions for improving their health and well-being through the use of sensor data and co-design methods.

**Felipe Escobar** (researcher & contributor) studied Design for Interaction at TU Delft and currently works as an interaction design researcher at MediaLAB Amsterdam. He is interested in understanding how to use different research methods and incorporating them into meaningful design tools. He also coaches teams that use design thinking to tackle industry challenges and come up with innovative solutions. His teams have worked for ENECO, KLM, and COFELY.

**Gabriele Ferri** (editor, contributor, and interviewer) is a researcher at the Play & Civic Media group at the Amsterdam University of Applied Sciences, as well as a lecturer in Design Strategy at the MSc program in Digital Design at the same university. He conducts research-through-design projects on playfulness, speculative design, and geolocalized storytelling. He recently co-edited Games on Games - Game Design as Critical Reflexive Practice. At Design & The City he was the main coordinator for the Lab of Labs event. [G.ferri@hva.nl](mailto:G.ferri@hva.nl) / [www.gabrieleferri.com](http://www.gabrieleferri.com)

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**Oscar Langley** (researcher & contributor) moved to Amsterdam three years ago after short stints as a designer in Madrid and the UK. He is now an independent designer working in the overlap of industrial and UX design. His work straddles both digital and physical products, working with companies, independent professionals and students alike on projects from the development of co-working spaces to b2b digital interfaces.

**Mattia Thibault** (researcher & contributor) is a research fellow at Turin University, Italy, where he teaches a course on Game-Based Learning. He earned a PhD in Semiotics and Media, he participated in SEMKNOW, the first pan-European doctoral program on semiotics, and he has been visiting researcher at Tartu University (Estonia), The Strong Museum of Play (Rochester, NY, US), and Helsinki University (Finland). His research interests revolve around the semiotics of play, ranging from toys to digital games and from the ludicization of culture to the playful practices of the peripheries of the Web. He has presented and organized numerous talks, conferences, and activities dedicated to these topics and has published several peer-reviewed articles and an edited book, *Gamification urbana: letture e riscritture ludiche degli spazi cittadini* (Aracne, 2016).

**Martijn de Waal** (editor) is a senior researcher at the Play & Civic Media research group at the Amsterdam University of Applied Sciences. His research interests include civic media, digital placemaking, and new media & public space. His most recent books include *The City as Interface* (NAi010 Publishers, 2014) and *De Platformsamenleving* (The Platform Society; Amsterdam University Press 2016), co-written with José van Dijck and Thomas Poell. At Design & The City he was the overall program coordinator.

Photographs **Sebastiaan ter Burg**

[www.flickr.com/photos/ter-burg/albums/72157667371242475](http://www.flickr.com/photos/ter-burg/albums/72157667371242475)

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In the field of design, 'human-centered' and 'third-wave design' approaches have been gaining traction. Design, according to these visions, should start from an empathic understanding of citizens and their needs.

With the rise of smart city technologies, this vision has become all the more urgent. How can citizens be included as 'actors' when designing for smart city technologies and services, rather than as mere 'factors'? And what methods could designers use to come to conceptualize citizens not simply as 'users' but as 'full human beings,' with their personal histories, desires, emotions, and sometimes conflicting interests and complex needs?

During the Design & The City event, organized by the Amsterdam University of Applied Sciences in the spring of 2016, five leading design labs and centres from around the world were invited to showcase their ways of working in a series of hands-on design charrettes. This book documents these sessions and highlights a number of methods demonstrated. Together, they form a palette of possibilities to inspire designers, public administrators, businesses and citizens alike to explore a variety of human-centered design approaches.

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## ABOUT THE EDITORS

**Gabriele Ferri** is a researcher at the Play & Civic Media group at the Amsterdam University of Applied Sciences, as well as a lecturer in Design Strategy at the MSc program in Digital Design at the same university. He conducts research-through-design projects on playfulness, speculative design, and geolocated storytelling.

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