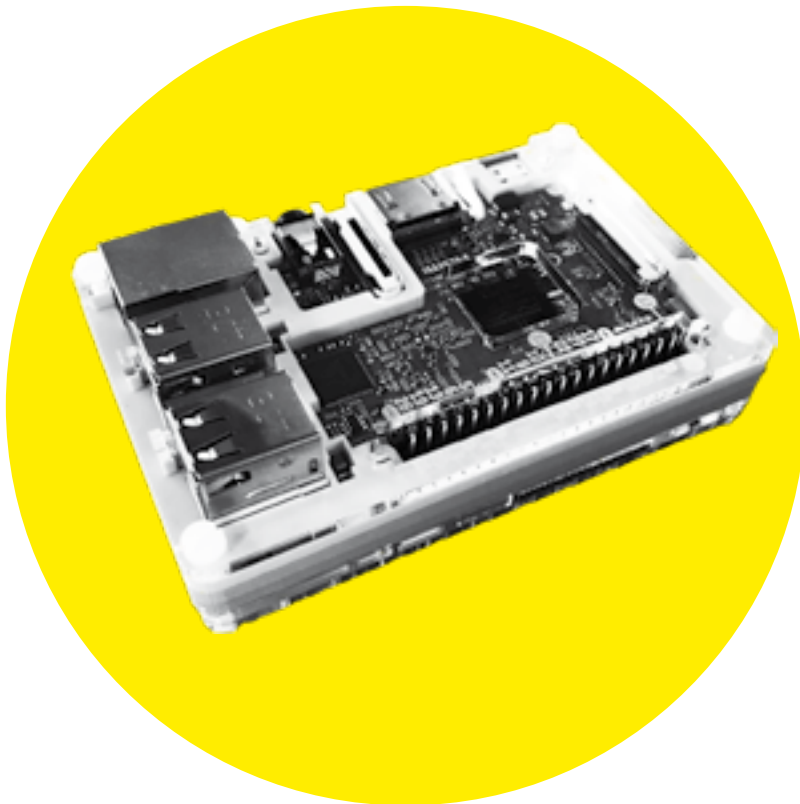




Developing a DIY networking toolkit  
for location-based collective awareness



# The Handbook

Introduction and Stories



The Mazi project (2016-2018) has received funding from the European Union's Horizon 2020 ICT CAPS initiative under grant agreement no 687983.

## The MAZI Handbook is in two parts:

1. **This book**, which includes an introduction about the MAZI approach, insights gained from our experiences of social engagement processes, and some stories; these are examples of how the MAZI Toolkit has been used in a range of situations. We hope these inspire you to create your own MAZI Zones.
2. **The Technical Guide:** To help you easily install your personal local network on a Raspberry Pi; the MAZI Zone.

MAZI means “together” in Greek. The MAZI project is developing a toolkit for building local, community wireless networks: MAZI Zones.

We call this alternative technology *Do-It-Yourself networking*. It combines wireless technology, low-cost hardware, and free/libre/open source software (FLOSS) applications.

MAZI Zones are wireless networks built using Raspberry Pi computers. Each MAZI Zone provides pre-installed open source applications. They are available locally as soon as you log in to the network.



**[www.mazizone.eu](http://www.mazizone.eu)**

## The goals of the MAZI project

The goal is to provide easily accessible technology and knowledge to empower people who are located within a local area or space, in order to:

- shape their own “digital-physical” hybrid urban space, together, according to the specific local environment and context.
- generate location-based “collective awareness” as a basis for fostering (for example): social cohesion, conviviality, participation in decision-making processes, self-organisation, knowledge sharing, and sustainable living.
- facilitate interdisciplinary and collaborative interactions around the design of hybrid space and the role of ICTs in society.

## The MAZI project partners:

NITlab, University of Thessaly, Greece

NetHood, Zurich-based non-profit organization, Switzerland

Centre for Interaction Design, Edinburgh Napier University, UK

Design Research Lab at the Berlin University of the Arts, Germany

The Open University, UK

INURA Zurich Institute, Switzerland

SPC in Deptford, London, UK

Neighborhood Academy in Prinzessinnengarten in Berlin, Germany

unMonastery, nomadic group, UK & Greece.



## **How did the MAZI project develop the toolkit?**

The MAZI project included four pilot studies, in Germany, Greece, Switzerland and the UK. These pilot studies took into account different perspectives; namely technological, scientific, political and social.

During the MAZI project (2016-18) the four pilot studies experimented with the toolkit, exploring different uses of the hardware and software. Some of these example stories are described in this book.

# DIY Networking: How does it work?

DIY networking is about the *social* as much as it is about the *technological*.

From a technological perspective, a wireless router (a simple computer) can do more than just connect your devices to the internet. It could host a wide variety of web services, from a simple website to a fully fledged collaborative platform, accessible only to those nearby. For example, these services or *applications*, could include a virtual announcement board for a block of apartments, an online guestbook for an urban garden, a file-sharing platform for a workshop, and many more creative uses of “self-hosted” web applications.

Applications such as Wordpress, Owncloud and Etherpad can be hosted by anyone on a private web server. These services are accessible through the router’s wireless antenna announcing a network name, a Service Set Identifier (SSID), exactly as it works when you connect to a free or home WiFi. They can appear automatically on a splash page or captive portal when you open your browser just as you often see in a cafe or airport.

You can build your own MAZI WiFi network, complete with configurable software applications. You will need some low-cost Raspberry Pi hardware, and downloadable resources from the MAZI Toolkit web page. Full details and instructions are included in the Technical Guide that goes with this handbook, and also on our project website: [www.mazizone.eu/toolkit](http://www.mazizone.eu/toolkit)

## The MAZI Toolkit:

- starts with conversations - not technology - which lead to clear justifications of the purpose for the technology. Speaking to people allows you to identify relevant uses, such as an educational project to teach others how to take part in the conversation.
- is Open Source
- is freely available
- is community driven - use the tool as boundary object to support dialogue
- promotes collective awareness, and encourages social cohesion
- provides publishing platforms and knowledge depositories

## More about DIY networking

DIY networks can be used for two main reasons:

- to support local interactions and services.
- to improve Internet connectivity in a certain region or local area

DIY networks can be seen as “organic”: they are created by local communities and reflect local culture. The data they use can be generated and consumed in the same place. DIY networks can also bring people together, face-to-face, instead of keeping them online all the time.

Since these types of networks are owned and operated by individuals, significant coordination can be required around various issues: from purely technical, like the underlying networking protocols, to more social and political, like the design of the applications running on the network and the governance of the whole ecosystem (access and resource allocation, cost recovery, community support, conflict resolution, etc.). For such interactions to be productive and fruitful, one should carefully distinguish between the two main roles of a community network, Internet access vs. local services, and their possible combinations.

The MAZI project is exploring the important reasons why such networks should also be promoted as infrastructure for hosting local services, built and used by local communities.



# What is the MAZI Toolkit?

The MAZI Toolkit is made up of three elements. Further information about these is available from the MAZI Toolkit page on the website: [www.mazizone.eu](http://www.mazizone.eu)

- 1. Low cost hardware**, currently the Toolkit is using the Raspberry Pi system that can be bought at a reasonable cost.
- 2. Software and applications**, specifically developed by the MAZI Project including a set of local web applications ready to be installed and customised on the captive portal. The default applications include; the Guestbook that can be used in events for sharing ideas and photos, FramaData, for polls and surveys, the Interview application for recording and organising voices, and Photo and Document sharing applications.
- 3. Guidelines and knowledge**, including examples and inspirations. Installation scripts and step-by-step guides are part of the toolkit, enabling you to build and deploy your own network zone, to configure a user-facing captive portal, and to select and customise software applications.

## Guidelines and Community Contributions

A supporting “How to...” document, **The Technical Guide**, is available to support this handbook. It will get you started installing the MAZI software on your own Raspberry Pi.

In addition, you can directly access the Toolkit guidelines on GitHub, which includes up-to-date documentation:

<https://github.com/mazi-project/guides/wiki>

You can support the ongoing development of the Toolkit by adding any issues with bugs, comments, and feature requests here:

<https://github.com/mazi-project/portal/issues>



## **MAZI Insights:**

### **What we learned through creating our stories**

**“Time isn’t the main thing. It’s the only thing”**

*Miles Davis*

#### **Value the time spent with communities:**

Working with a community needs time and, depending on the context, that time could be spread over days, months or even years. This is an investment of your time but also that of the community, which should be acknowledged and respected. Take time to build relationships with the community and their representatives, time spent doing this will be valuable later in the relationship and will help to overcome the inevitable difficulties that will occur.

#### **The importance of stories and storytelling:**

The stories told by the community will reveal and contextualise needs. The goal is to be in a position to hear those stories and to be able to interpret their significance. How do the stories you hear speak to the needs and motivations of a group, what is the language being used and how does this reveal the hopes, desires and dreams of a community. As well as listening to stories, you can tell your own stories about how the toolkit can be used. Drawing on examples makes explanation clearer.

#### **Collaborative activities:**

Shared activities break down inhibitions and create opportunities for conversation. Taking part in activities with the community will increase the likelihood of conversation. Depending on the size and composition of the community that you are working with, more formal visual or participatory methods could be used in discussion sessions and workshops. One technique that was found to be particularly good at creating conversations was “mapping”. Mapping encourages participants to describe and illustrate the relationships and connections (formal and informal) that exist within a community. The creation of these maps acted as a catalyst or a prompt for conversations between participants and with project members.

Collaborative activities take away the stress from conversations and let them flow more naturally.

### **Opportunistic conversations:**

Be open and not dogmatic, yes you can arrive with an agenda as this will create a structure for conversation, and communicate your professionalism and respect for the community. But also be prepared to relax or even let that agenda go. Be flexible enough to recognise when conversations take an unexpected course as sometimes these discussions can reveal new understanding about a community. Sometimes you just have to take a chance and let conversations flow in the direction they choose. When to refocus a discussion is a personal decision. The more time spent with a community de-risks this decision and gives more flexibility about how conversations are managed.

### **Adding value rather than adding work:**

It is not always the case that everybody will immediately see the same benefits as you do when faced with a new approach. Consequently, a shared language is essential to identify benefits for the participants. Different participants will see alternate possibilities and the subsequent range of benefits can be unevenly spread across a community. Recognition of such a disparity is important as the relationship develops. By successfully addressing these disparities trust can be enhanced.

### **Understanding the location:**

Communities operate in a particular physical setting and situation and it is important to understand how location can affect structures and relationships. Is the physical setting changing, how is this occurring and at what pace, what impact is this having on the community? Is the changing physical environment desirable or is it something that the community is struggling to come to terms with? Generally, these situations are not as straightforward as might initially





appear. Take the time to understand the location, walk the location and record what you see at different times of the day and at different days of the week, arrange a local guide to walk with you and to explain the specifics and nuances of the physical setting. The better you know the physical location the more chance you have of understanding the motivations of the community.

#### **Identifying roles, guises and actors:**

It is important to recognise that the roles people can adopt within a group or community can change over time. This change can be either gradual or rapid depending on the particular circumstances. Different projects or activities can also cast the same actors in different roles. To have any chance of recognising, or indeed understanding, such changes in the dynamics of groups it is essential to build relationships with a community.

#### **Learning languages and vocabularies:**

Take the time to learn the language and vocabulary of a community, understanding these meanings will enable productive discussions to occur. By demonstrating an understanding of the nuances associated with a community through the language that you use, trust and relationships can be developed. The creation and construction of clear, mutual understandings requires the shared understanding of what the language means. This is a reciprocal relationship and refers to both a shared understanding of a technology (i.e. DIY networking) and of a given context (e.g. mountain villages in Greece).

#### **Respecting others capital:**

It is vital to recognise that every individual and group brings something valuable and important to the activity. The ownership of both tangible and intangible assets must be recognised and respected throughout the relationship.



## MAZI Zone stories

The library of little stories in the next part of this handbook has been put together by the MAZI partners to show you what is possible using the MAZI Toolkit to create a MAZI Zone on a Raspberry Pi computer. They are intended to inspire you to try for yourself!

The library is growing, and you can include your own MAZI story on our blog here: <http://demo.mazizone.eu/wordpress/index.php/blog>

# The Stories

## Page:

14. Commons Evening School
15. Inura conferences
16. The MAZI archive
17. The Platanos Tree
18. Sensing the Environment
19. Polylogue I
20. The HTML Game Demo
21. Kunstwerk1 & Kunstwerk2
22. Wunderkammer
23. The Room: An Analogue Zone
24. The Solar Roller
25. Kiezanker
26. Babar Luck's Spaceship
27. Stadt von Unten (City from below)
28. Tsepelovo Infopoint
29. National Museum of Natural History Berlin
30. Lause 10
31. L200
32. Tsouflis Archive
33. The Hoy Cafe and Steps
34. Hybrid poster
35. Le Jardin Victor, Coulanges-Sur-Yonne
36. The Kokkinopilos schoolhouse
37. Network Roulette



## Commons Evening School

The Commons evening school started in late 2017 in order to ensure the longevity of the Berlin-based Prinzessinnengarten (urban garden) as a space for collective, civic, and informal learning processes, open for and managed by neighbors. Within the format “Desire production: 99 years Prinzessinnengarten”, the collaborative efforts strive towards activating the neighborhood to imagine different, desirable futures for this particular piece of public land for generations to come.

These efforts of communal storytelling, collective mapping and the participatory development of knowledge bases through public talks, research projects and other formats are being aided by the utilization of a locally installed MAZI zone, serving as an archive and information point, in and through which all of the activities are being documented and presented. Specific use is made of the Wordpress module, serving as representative outlet of the initiative and different etherpads to protocol meetings.

## Inura conferences

At the last three INURA conferences in Bucharest 2016, Havana 2017 and Warsaw 2018, Philipp Klaus, who is also the secretary of INURA, proposed to make use of a 'nomadic' MAZI zone. When possible, the Raspberry Pi was powered by a solar power bar.

Two main spatial and temporal characteristics of it are particularly useful. One is its locality, also providing digital networking technology in remote areas like in the case of the Cuba conference where Internet was not available at all for 3 days. The applications mostly used were NextCloud for file sharing and archiving, and Etherpad, to organize the retreat program and take collective notes during workshops etc. In the recent conference in Warsaw, pictures from the parallel city tours were uploaded by nineteen participants, in the specific folders of the inura.zone, so all participants could get informed about tours in which they could not take part. Only four out of the twenty nine tours were not covered/documented, which is a big success considering the intense program and interestingness of activities.

Another successful aspect is the nomadic character within the conference of the inura.zone, being used 'in the backpack' during mobile city tours, while including also an archive with material from previous INURA conferences like photos, slides, and documents. As INURA members are sensitive with respect to sharing photos and documents online, the MAZI zone provides for a more intimate and trusted environment, and the archive created on it will be accessible only during future conferences. And that may be one more reason to be present in the INURA conferences





## The MAZI archive

During the first year of the project, the team of MAZI Berlin was working on establishing and testing a MAZI framework that facilitates and supports the vivid civic discourses about socio-ecological transformation, urban and rural bonds, rights to the city and collective learning.

A first prototype was developed with the particular challenge of transferring knowledge. The Neighborhood Academy (NAK) receives and works with individuals and initiatives whose encounters and conversations are fundamental to the body of content created by the Academy. The challenge lies in transporting the knowledge and the discourses generated in these encounters into the NAK and to make this knowledge accessible and workable.

For this, we developed a tool that simultaneously serves the need to document and also to synergize and to publish knowledge as it is getting generated. The tool consists of a physical recording artifact that helps to create an interview scenario, and a digital application that provides the platform for the content (protocol, questions, tags, recorded answers) that is produced and archived.



## The Platanos Tree

This MAZI Zone installation took place in Tsepelovo, a mountain village in northern Greece during a residential MAZI pilot study visit by the unMonastery group. From discussions during workshops, the idea of the “Platanos” emerged as an idea to raise awareness of the technological possibilities of the MAZI Zones, and to try out the technology in-situ.

The plane tree, or platanos in Greek is a permanent feature of many village squares, called the “plateia”, in mainland Greece. The squares often include the village church and a water spring, and so the shade of the platanos provides a focal point for gatherings. People say that if the platanos could speak it could tell you everything about the village. It was decided to build a MAZI Zone around this concept in the main square of Tsepelovo during a public gathering, based around one of the applications of the MAZI toolkit; the Guestbook application.

The Platanos installation enabled visitors to leave the Platanos tree a message during the gathering so that others could log in and see it. The installation was programmed and built and uploaded to the Raspberry Pi during a process of collaborative learning about the technical aspects of the toolkit itself. Although the Guestbook was chosen to be fairly simple to understand and interact with, there were some deeper ideas influencing the overall concept to a certain extent, including ideas around collective decision making and decentralised democracy. Villagers could upload an image and type a short text message using their own mobile devices. The presence of the MAZI Zone was promoted with posters around the village. The impression gained during the event was that people did enjoy the experience and the provocative nature of the concept opened up opportunities for discussions about possibilities for the use of this type of technology in the village context.





## Sensing the Environment

Creekside Discovery Centre (CDC) is a voice for nature conservation in the Deptford Creek area, London. They run a busy activities calendar, inviting members of the community to find out more about the nearby river course and the surrounding area. A key feature of their work is to guide people along the river bed at low tide, and find out more about its biodiversity, including over 150 school visits in 2017. They are keen to extend their work to collect data about the changing conditions, and find out if urban infrastructure projects are having an effect on the river and urban wildlife.

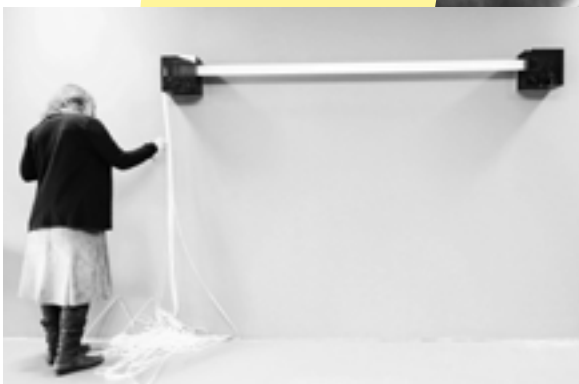
MAZI partners have worked with CDC to build and deploy a Raspberry Pi Zero based sensing system that collects river temperature through sensors and makes it available to CDC for onward distribution. The sensor system can enable school children to carry out data-based research projects; to stimulate community debate about local environmental conditions; and to inform neighbourhood and scientific conversations about the effects of the changing urban landscape.

The team is working with CDC to enable the data to be displayed through a MAZIzone, enabling neighbourhood conversations around environmental data at a very local level, without the need for internet connections and maintaining control over how it is shared.

# Polylogue I

Polylogue is an interactive installation and a hyperlocal message feed created in Berlin as part of a MAZI pilot study. The piece operates through an open WiFi network, where users in reach of the wireless signal can send text messages with their own smartphones, tablets or other devices. These messages get printed immediately on a paper roll that runs in-between two translucent, black boxes and are transformed into a material stream of consciousness. Polylogue offers space for thoughts, questions, claims and nonsense to stand next to each other, contradicting or complementing through juxtaposition. Depending on the time that the messages are sent, they are printed above, under or next to each other, giving the impression of being related to each other, although they are fundamentally separated.

As the messages and their relationships only exist in the situation, commentaries that were up-to-date just minutes ago become obliterated after having had a run of approximately two metres. Unlike digital messages, which often travel for thousands of kilometres, multiple times around the globe, messages submitted to polylogue travel exactly two metres until reaching their final destination. How long it takes for a message to move across to the other box, where it will be shredded and destroyed, is determined by the density of the conversation. The greater the number and the speed at which visitors contribute to the feed, the more short-lived a single message becomes. The obliterated content accumulates at the installation's feet in the form of a paper pile consisting of fragmented conversations.





## The HTML Game Demo

In this version of the MAZI Zone, a Wordpress website was created and hosted on the MAZI Zone. The website provided a link to a simple “Flappy Birds” game, written in HTML. The interaction was kept very straightforward, just tapping on the touchscreen to fly the bird through obstacles. This meant that people could interact with very little instruction.

The game was presented at exhibitions and educational demos to invite audiences, especially children, to interact and engage with the technology. A smartphone was provided so that it was easy for visitors to try out the game straight away. This then led to discussions about how the game was hosted on the zone, and how people could access the game via the WiFi network through the browser on their own smartphone. A physical QR code was provided so that people could navigate straight to the MAZI Zone website to play the game.

This MAZI Zone was built at Edinburgh Napier University.

# Kunstwerk1 & Kunstwerk2

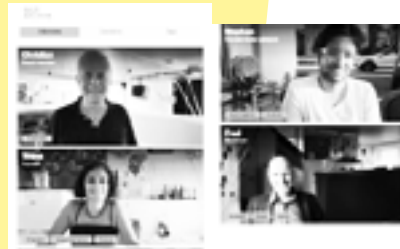
This MAZI Zone was designed and developed by INURA Zurich Institute and NetHood. It is permanently installed in Kraftwerk1's Pantoffelbar, a social space within a cooperative housing complex.

It was initiated as a hybrid (digital and physical) exhibition of the early days of Kraftwerk1 (The Sofa University), inviting residents to contribute photos from later times, which would be then printed and influence the evolution of the physical exhibition. The hybrid exhibition implemented simply with a NextCloud folder for collecting photos, In addition, a Guestbook is also available in the local network, which is mostly populated with photos and cards from the times that hybrid letterbox is installed.

The Kunstwerk 2 is a follow-up version of the installation. After feedback from the participants the exhibition was refreshed to curate a series of exhibitions with photos under a specific relevant theme, and the MAZI Zone will play the role of a supporting digital layer. The new splash page of the Pantoffelbar local MAZI Zone invites now people directly to the NextCloud photo sharing folder, made even more explicit through the chosen SSID and URL: [gruempi.photos](http://gruempi.photos). The idea that a MAZI Zone is literally a simple digital representation of the visible exhibition with more photos, and the possibility for upload instead of a more complex set of applications.

From the very first moment that we installed the new photos of the hybrid exhibition a young man that had participated in the previous years of the Gruempi football recognized himself, and looked happy to see those photos exhibited. After a few months celebrating the past of Kraftwerk1, it was time to celebrate its future.





## Wunderkammer

The Wunderkammer MAZI Zone was initiated through two real needs. The first was the framing of Wunderkammer, an open urban garden in the outskirts of Zurich, as a space for innovation and sustainability. The second, was the lack of Internet connection.

In the first installations we experimented mostly with the Hybrid Letterbox - a physical posting box that transfers a hand-written message to a digital platform so the issue can be spread effectively and discussions can emerge around it - and the interview archive, an application for recording speech.

Being a new “actor” in this area, Wunderkammer is very interested in creating collective awareness through playful and engaging approaches.

## The Room: An Analogue Zone

The unMonastery group has been working with a small village in a rural area of continental Greece for two years. A small, although constantly changing team has been returning to the village of Kokkinopilos, and engaging in multi-dimensional relationship building and collaborative planning. Our primary goal was to build trust and lasting relationships with the village, and in exchange for the use of one of their many empty buildings, contribute to addressing some of the issues the local community shared with us.

We ended up using the MAZI Toolkit as an auto-ethnographic tool, which respects data protection and privacy concerns by storing all information on a local network, while allowing for a visibility of our work in progress - however, in Kokkinopilos, a small Raspberry Pi did not make our work visible. In order to engage with the community, we decided to transform our workroom into a walk-in analogue MAZI Zone - a physical place to collate people's thoughts and local knowledge. We marked the walls with the various projects we were planning to do (on the MAZI Zone), and invited people from the village to come and contribute.

This move made our work both visible and comprehensible in the village. Our reputation as hard workers rose, as people who did come could see what we were doing, making what was a hidden workplace into a comfortable walk-in archive (with a kettle and a sofa). We had stories, photos, comments and notes stuck on the wall, under different headings. We turned a rotting blackboard into a hand-made local map (painted it white first and drew the area) and added points manually. It was extremely satisfying to work in this way, and we found it much easier to explain what we were doing to our local 'supporters'.







## The Solar Roller

South East London Community Energy (SELCE) is an energy cooperative. SELCE raised funding to install solar panels on schools in Lewisham and Greenwich and hosts regular 'energy poverty cafes' to support local residents' energy needs. It has an outreach and educational programme with a mobile 'Solar Roller' trailer, making a set of solar panels available to provide clean energy for park events and festivals. The Solar Roller also has a wireless router to provide internet access in the field.

A MAZI Zone was customised and added to present Solar Roller-specific information, reporting on the solar panels' energy capture and usage, inviting comments and providing information about SELCE's energy cafes and other activities. The MAZI Zone, powered by the solar energy collected by the Solar Roller offers WiFi visitors a set of interaction options; a Guestbook, a Sensor monitor (connecting to the Solar Roller's systems), a Blog and Photo library. As the roller travels to different locations and situations, it enables the SELCE team to collect a record of these events and record the progress of the project, as well as welcoming contributions from festival visitors.



## Kiezanker

The Neighborhood Centre Kiezanker (“neighborhood anchor”) is located in Kreuzberg, Berlin. The center is closely linked to a tenant and neighborhood initiative “Bizim Kiez, active in fighting for the rights not only of tenants but also small business owners. The centre is open to the public on most weekdays and is a place of gathering for families, language pupils, local initiatives, and interested publics. Staff members of the centre are professionally tied to the Alice-Salomon-Collage for social work and neighbourhood accompaniment. MAZI was first used for a seminar in the collage, where the students used the MAZI-Archive tool to make interviews with neighbors on the question: “What constitutes the neighbourhood for you?”, starting a collection of viewpoints, anecdotes and stories of locals and visitors alike, showcasing a thick description of the neighborhood as a culturally and socially rich ecosystem.

The collected stories and interviews are now featured in public events of the neighborhood center. Furthermore, the tools provided by MAZI are integrated in several funding proposals as a locally owned, spatially embedded technology. The center – and specifically the social worker we engaged with, serves as a MAZI-multiplier and connection point for other actors looking to integrate alternative approaches to network technology within their social work.





## **Babar Luck's Spaceship**

Babar Luck, a local musician in Deptford, London, home of the Creeknet MAZI pilot study, has been interested in finding ways of reaching out to his audience and promoting his music and philosophy while he is performing at festivals and in venues. Babar wanted to create a platform to take on his travels that would allow audiences the opportunity to leave messages, upload images and recordings of performances as well as make selections of his recorded music available to promote current products and advertise forthcoming gigs.

He worked with the Creeknet team, through the regular community drop in 'MAZI-Mondays' hosted at SPC, to set up and customise a MAZIzone as "Babar Luck's Spaceship". Babar is a musician first and foremost, and it became clear that it's important to give people the time and space to explore what a MAZI Zone might be, as well as providing training and support to give new users the confidence to take ownership of their own MAZI Zone.

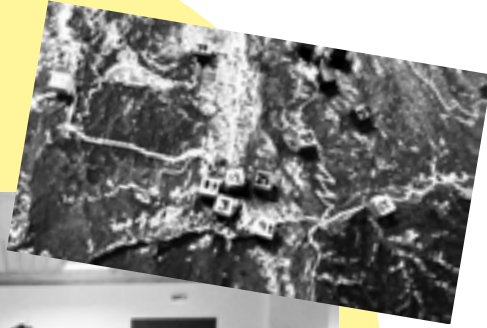
Babar's taken the Spaceship out to events, and other musicians have become interested and asked SPC to help them set up a similar MAZI Zone to help them promote their musical activities.

## Stadt von Unten (City from below)

Stadt von Unten is a initiative working in Berlin on the topic of re-communalization and self-organization. They are specifically invested in a space in the center of Kreuzberg in Berlin. The space (so called Dragoner Areal), 4.7 acres of land, was owned by the German federal government and was set out to be sold to the highest bidder. The initiative took a definite stance against the privatization, arguing that the land had to be left in public hands to be used for 100% social, 100% payable, 100% rented and 100% public for housing and spaces of small businesses. The sale was stopped and the land was given back to the city of Berlin. The borough of Kreuzberg declared it a development area (Sanierungsgebiet) with special mention towards social environmental protection (Milieuschutz). Since then, the Initiative Stadt von Unten (City from Below), has been opening up temporary spaces on the grounds of the Dragoner Areal to activate the surrounding neighborhood to take part in the imagining and planning for the space.

For this purpose, MAZI zones were set up in collaboration between researchers and activists, utilizing the guestbook application to serve as a blackboard for ideas, wishes, fears and questions of residents and other involved stakeholders to be shared and displayed towards a transparent and open, participatory planning process.





## Tsepelevo Infopoint

Tsepelevo is a mountainous village located in Northern Greece where nowadays the sustainability of the inhabitants depends mostly on tourism. Whilst staying in the village the unmonastery group organised a series of MAZI workshops and a 'Tsepelevo infopoint' was one of the projects developed during these collaborative sessions.

The residents decided that a local network could help to share information with visitors and create a shared resource for the community. A MAZI zone holding information hoped to serve as means of assisting the permanent residents in the village who are in direct contact with, and facilitators to those visitors and update (eksynronisi) pre-existing traditional notions of hospitality.

Located in the municipality office at the centre of the village the MAZI toolkit was customised to include a map with key landmarks and local businesses in the village. The infopoint also includes information on six trekking trails that start and end in Tsepelevo, a brief history of the village and the wider region and a space for news about local events and activities.

# National Museum of Natural History Berlin

The project “Visitor participation at the Museum für Naturkunde” develops participatory processes and tools that involve different social communities into scientific processes and discourses. The participatory tools are meant to enable visitors to inform themselves about research at the museum and also bring their own knowledge, thoughts and ideas to it.

The aim of this project is to create guidelines and recommendations obtained by the experiences during this project for the design of participatory processes with specialists and nonspecialists at scientific institutions, and the use of participatory elements in public space. The project is also an important preliminary to the planned rearrangement of exhibition halls and education facilities at the Museum für Naturkunde as well as to further research of participatory projects in scientific processes and discourses.

In this context, the MAZI toolkit was used to create an interactive installation that allows both visitors as well as scientific staff to share anecdotes, stories and experiences in relation to the exhibits on show in the museum. The installation was designed by Bianca Herlo and Fabrizio Lamoncha of Design Research Lab at Berlin University of the Arts.





## Lause 10

Several urban activist initiatives have formed in the light of Google announcing to open a Startup campus in a highly dense and already gentrified neighborhood in Berlin-Kreuzberg. Their activities and the subsequent mobilization of neighbors have closely interlinked and politicized relationships between the topics of “right to the city” and relevant discussions around technology development.

With curiosity and knowledge present in their own community, they appropriated and developed their own community wireless networks utilizing the MAZI platform, e.g. for live streaming events to a larger audience not fitting in the venues, or broadcasting texts and other informational material to the public using a “MAZI-mobile” in the context of demonstrations.

## L200

L200 neighborhood space is located at Langstrasse 200, <http://langstrasse200.ch>, on one of the busiest and most urbane streets at the heart of Zurich. This recently created urban node has the potential to become the ideal placeholder for a wide variety of hybrid space experiments hosted on the permanent MAZI zone installed already, by the name "l200.digital". Having the same physical and online address is part of the design choices that express its hybrid identity.

As a first use of the MAZI toolkit, the hybrid whiteboard is an application that is already facilitating the internal collaboration of the L200 members, including photo sharing (NextCloud) or for editing collective notes during or after events (Etherpad). The fact that the MAZI Zone is used as the offered Internet access for all guests, makes it much easier to engage them in "local" digital interactions. Also the engagement of passers by is facilitated by the accessibility to the street level through the large windows and the convivial atmosphere in the neighborhood.

For instance, a short experiment displaying a local Etherpad page titled "playground" on the public screen, with information on how to connect, engaged quickly four-five strangers that wrote on the pad without our guidance. Such quick adoption without active encouragement has not been experienced in previous efforts during workshops or other events. In such a free environment, however, the need for moderation makes the maintenance of the street-facing part of L200.digital a real challenge, and this is ongoing work integrated in the overall design of L200 as a hybrid urban node.





## Tsouflis Archive

Most villages in Greece have a local cultural association run by volunteers and collectively funded by residents. These associations hold a rich resource of stories, anecdotes, recipes and images of local culture and history from the past to the present day.

Unmonastery set up a MAZI zone to host a digital version of part of archive collected by the Tsepelvo's cultural club that would be accessible to locals and visitors. The archive included hundreds of photographs and the downloadable issues of the magazine "En Tsepelovo" published by the club three or four times a year.

The first version was exhibited in the local gallery which had remained closed for many years. Many people brought photographs from their personal collections to upload to the catalogue. The zone is placed in a building belonging to the cultural association and accessible from anywhere in the village square.



## The Hoy Cafe and Steps

The Hoy Cafe in London has a sitting area and is the base for MAZI Mondays get togethers. A MAZI Zone was set up at the Hoy Cafe, and the owner was enthusiastic to engage with our activities, and helped give us access to the neighbouring historic Hoy Steps, owned by the proprietor's family, one of the few locally owned access points to Deptford Creek.

This became a focus of MAZI community activities, with SPC (a MAZI partner organisation) coordinating a clean up of the access steps. The clean-up of the Hoy Steps brought together different individuals and groups around a very hands-on yet analogue DIY networking activity. We wished to engage not only visitors but also locals in considering Deptford Creek's geography from a different perspective, and to elicit associated local stories that could then be gathered and disseminated by a MAZI Zone in the vicinity. This acted as the bridging point into introducing how local networking technologies might support local activities. Enabling contact between people who might otherwise not meet, sharing information and knowledge, and triggering discourse.





## Hybrid poster

The first MAZI Zone deployed by the NetHood team (Ileana Apostol and Panayotis Antoniadis) was a hybrid poster on MAZI's interdisciplinarity framework. The poster was "hybrid" in the sense that it included a projection of a collection of photos taken (and directly uploaded to the MAZI Zone) through the conference, and of course the Raspberry Pi hanging next to it.

People found interesting this innovative installation for a poster session, and listened carefully to the idea behind the MAZI toolkit, and its potential role as a "boundary object" in interdisciplinary and transdisciplinary research.

They even uploaded some photos to the NextCloud folder for the event, under our guidance. To make the MAZI Zone more interesting we were uploading photos throughout the event, and when there were no people next to our poster we were projecting a slideshow of recently taken photos.

# Le Jardin Victor, Coulanges-Sur-Yonne

This beautiful house is the property of Patrice and his sister Brigitte, who would like to turn it into a community hub for organisations working on the common good, while serving the local community. An association is in the process of being formed to bring together all individuals and organisations who are interested in taking part of the project.

The plan is to map the social, entrepreneurial, cultural and communal characteristics of the village, and develop concrete plans how the house can play an active role in the life of Coulanges, as a physical space (community house, co-working space, open living room) and as a hub for visitors, connected to interesting initiative throughout Europe.

The MAZI Zone that we built for the house is in two languages - French and English - and provides information about the building, about the project, and allows communal story-telling using the Etherpad application. We even made a recipe book, since the ideas is to offer the place for close-knit communities who cook and eat together.

One special feature we used here is to use iframe to make the etherpads editable and readable in the wordpress environment, so people don't need to leave the familiar interface of wp in order to add to the documents.



BIENVENUE / WELCOME

Le Jardin Victor, c'est  
un lieu de rencontre  
pour un cadre de vie  
plus agréable et plus  
solidaire.





## The Kokkinopilos schoolhouse

In September 2018, we set up a mazizone - a local information hub - in the old schoolhouse of Kokkinopilos, a Greek mountain village where they host runners, climbers and other visitors regularly. It is a permanent installation, in two languages (Greek and English) providing information about the use of the building (on an editable etherpad, so anyone can update it), a guestbook, and a wordpress which provides information about local sites of interest.

It took us three years to find someone to take care of it, but now it is in good hands, and we will return next summer to give a workshop about building a MAZI Zone to the children who spend their holidays there. It was a very convivial collaboration with the village, and we are very happy to continue to work there.

# Network Roulette

Network Roulette is an game-based exhibition installation developed at Edinburgh Napier University based on the MAZI toolkit. Each Raspberry Pi in the installation is a unique, individual WiFi network zone, providing access to the media stored upon it. The piece consists of three Raspberry Pis, firstly a 'master' element, the white unit, that manages the users' access to a WiFi network via their mobile phones or other personal devices. Once connected, the white unit serves a web page, built in HTML, to the user's phone. The second and third units, red and black, are independent WiFi zones with their own data storage for media files. This media can only be accessed when the user is connected to the respective unit's WiFi zone.

To interact with the installation, the user must connect to the white unit's WiFi network and navigate the browser to the URL: <http://10.0.01>. This can be achieved either by typing the URL into the mobile browser bar or by scanning the QR code provided as part of the installation. Once the user has successfully connected to the first network (white), the user's phone displays a roulette wheel game consisting of red and black segments. As a result of spinning the wheel, the white unit will randomly connect the user's device to either the red or the black unit's network. Each of these networks contains a gallery of different images that reflect either a red or black theme. In addition, each plays a related piece of music that is streamed to the user's device via the local network. Once the users have viewed the images and listened to the music, they can disconnect from the specific network and return to the original roulette wheel game to spin again.



## Further Reading

**How to build a more organic internet (and stand up to corporations)**, by Panayotis Antoniadis, in *The Conversation Global*. February 2017

**DIY networking: the path to a more democratic internet**, by Panayotis Antoniadis, in *The Conversation Global*. November 2016

**CAPS projects: An Interview with Panayotis Antoniadis**, co-founder of the nonprofit organization nethood.org, and a partner in the MAZI project, by Maritina Stavrakaki. *Agroknow blog* July 2016

### **MAZI Academic Publications:**

Antoniadis, P. (2016). Local networks for local interactions: Four reasons why and a way forward. *First Monday*, 21(12). doi:10.5210/fm.v21i12.7123

Antoniadis, P. (2018) *The Organic Internet: Building Communications Networks from the Grassroots*. In: Giorgino V., Walsh Z. (eds) *Co-Designing Economies in Transition*. Palgrave Macmillan, Cham

Davies, G.; Hausel, K. & Stevens, J. (2018). Community partners acting as insider researchers to facilitate a Do-It-Yourself networking. In: *British Autoethnography Association Conference 2018, 23 & 24 Jul 2018, Bristol, UK*.

Davis, G. Gaved, M. (2017). Seeking togetherness: moving toward a comparative evaluation framework in an interdisciplinary DIY networking project. In: *Proceedings of the 8th International Conference on Communities and Technologies (C&T '17)*, Association for Computing Machinery, pp. 96–99.

Kazdaridis G., Skrimponis P., Zographopoulos I., Symeonidis P., Korakis T., and Tassioulas L. (2017) *Demo: Enabling Asynchronous Awakenings in Wireless*

Sensor Networks Towards Removing Duty-Cycle Barriers. WiNTECH'17, October 20, 2017, Snowbird, UT, USA ACM ISBN 978-1-4503-5147-8/17/10. <https://doi.org/10.1145/3131473.3133330>

Kazdaridis G., Zographopoulos I., Symeonidis P., Skrimponis. P., Korakis T. and Tassioulas L. (2017) Demo: In-situ Power Consumption Meter for Sensor Networks supporting Extreme Dynamic Range. ACM ISBN 978-1-4503-5147-8/17/10. <https://doi.org/10.1145/3131473.3133331>

Smyth, M. Helgason, I. Kresin, K. Balestrini, M. Unteidig, A. B. Lawson, S. Gaved, M. Taylor, N. Auger, J. Hansen, L. K. Schuler, D. C. Woods, M. and Dourish, P. 2018. Maker Movements, Do-It-Yourself Cultures and Participatory Design: Implications for HCI Research. In Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (CHI EA '18). ACM, New York, NY, USA, Paper W32, 7 pages. DOI: <https://doi.org/10.1145/3170427.3170604>

Smyth, M., Helgason, I. (2017). Making and unfinishedness: designing toolkits for negotiation. Volume 20, 2017 – Issue sup1: Design for Next: Proceedings of the 12th European Academy of Design Conference, Sapienza University of Rome, 12-14 April 2017

Unteidig, A. B., Domínguez Cobreros, B., Calderon-Lüning, E. & Joost, G. (2017). Digital commons, urban struggles and the role of Design. Volume 20, 2017 – Issue sup1: Design for Next: Proceedings of the 12th European Academy of Design Conference, Sapienza University of Rome, 12-14 April 2017

**More resources on the MAZI project website: [www.mazizione.eu](http://www.mazizione.eu)**



The Mazi project (2016-2018) has received funding from the European Union's Horizon 2020 ICT CAPS initiative under grant agreement no 687983.