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Executive summary

This document is the second version of the narrative regarding the outcomes of the MAZI self-reflection exercises, an experiment to record and analyse MAZI partners' interdisciplinary and transdisciplinary interactions during the cross-fertilization events (refer to the task 3.4). On this experiment the MAZI theoretical framework on interdisciplinarity is grounded, which is sketched in the deliverables D3.5 and D3.6 and will be finalized in D3.7. The role of the content included in this report is conceived as a catalyst for action, to build awareness of the relationships and diversity within the consortium, to generate conversations around the project work, and to stimulate the transformation of actions toward collaborative practices in the co-design of the MAZI toolkit.

The content is divided in two parts. In the first part, under 'elements of a conceptual interdisciplinary framework', are gathered reflections on the relationships, perceptions and understandings developed during and after the cross-fertilization events. A special section is dedicated to the pilot scenarios and to the partners' reflections on the MAZI toolkit as a boundary object. In particular, MAZI proposes an initial framework to interpret the transformation of actions taken during the first two years of its implementation, in order to perform collaborative practices. The second part is dedicated to the ongoing construction of a shared vocabulary for the collaboration around the design of hybrid space, under the MAZI glossary. A collection of thoughts and understandings around the terms of free, libre, open source software (FLOSS) is presented, as well as of conviviality, social cohesion, knowledge sharing, and sustainable living. There is also a list of potential concepts to be discussed during our next meetings and subsequently included in the glossary. A few notes conclude on future reflective exercises that MAZI will experiment with in the next cross-fertilization events in Zurich (May 2018), in Volos (July 2018) and in Edinburgh (September 2018).

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1. Introduction

The third self-reflection exercise regarding our interdisciplinary work in MAZI has been sent out to the entire consortium at the beginning of July 2017, in between MAZI summer gatherings that took place in London (Deptford) at the end of June and in Volos in mid July. In this way, it was able to include in the questionnaire some of the ideas, comments, and feedback to the conversations that the partners had during the pilot workshop in London, and also to draw attention to the structure of this questionnaire for the exchanges that were going to take place in Volos. The answers to the questionnaire were received between November 6 - December 11, 2017.

Although the exercise was answered individually, in the following section the information is organized by pilot teams. In the narration of the exercise results, the sequence of the pilot workshops is followed, and so the teams' answers are ordered accordingly as Berlin, London, Zurich, Edinburgh-Greece. In addition, is brought in the discussion information answered to the second self-reflection exercise (February 2017), which is documented as raw material in the Appendixes of D3.11 (the first version of this deliverable). The document is divided in two parts, one that regards the self-reflection on the exchanges and lessons learned during the cross-fertilization events, with impact on the pilot scenarios and on the conceptualization of MAZI toolkit, and another part of the document that continues the construction of a shared vocabulary that we called the MAZI glossary.

The content of this document provides a stimulus for collaborative work in the consortium as well as valuable documentation for other deliverables in the WP3 on interdisciplinarity, namely the deliverables on the boundary object (D3.12 and D3.13) and on the interdisciplinary framework (D3.6 and D3.7). The later is the document that synthesises the multiple project interactions into a proposed methodology for interdisciplinarity. Note that here are taken into consideration three main elements of MAZI theoretical framework relevant for future reflective analyses (see D3.11 pp.8-13).

- First, there is an exploration of the idea of self, to which three confining concepts are attached namely frame, institutions and territorialities to build awareness of how individuals position themselves within the group.
- Second, in communication and collaborative practices these individuals may play different roles, that are also in dynamic transformation during the course of action, and we named them triangulators, facilitators, catalysts and curators. While engaged in action it is suggested to be aware of two practitioners' attitudes that in one way or another would fit any of these roles, namely reflection-in-action, and the stranger's social role, being attached and detached from the group at the same time.
- Third, relational spaces may emerge as suitable context for interdisciplinary collaborations.

2. PART I – Elements of a conceptual interdisciplinary framework

2.1 Self-reflection following the cross-fertilization events

In the following sections answers received during the second and the third self-reflection exercises are included, to show how the various understandings have changed over time. After the end of the first year of MAZI, the partners' reflections were drawn from four cross-fertilization events, each of them having different scope, size and duration. These events were

- the project kick-off in Volos and its subsequent symposium in Sarantaporo, Greece (documented in D3.2 on the boundary object Section 3.2.1);
- the pilot workshop in Berlin;
- the MAZI workshop at the INURA conference in Bucharest and Sibiel, Romania (both events are documented in D3.6 on interdisciplinary framework, Section 5); and
- the DSI Fair in Rome (documented in D3.3 on the boundary object Section 1.2.1).

Now at the end of the second year, the reflections are noted from the interactions during two project events,

- the pilot workshop in London and
- the 2nd CAPS workshop in Volos where also the project review took place (documented in D3.3 Section 1.1).

After twelve months working together in the project, there was agreement among the partners on the importance of exchanging ideas and experiences between peers, facilitated during the cross-fertilization events, to build mutual understanding in the consortium, and further to advance the interdisciplinary collaboration. For instance, from the project kick-off event in Volos and Sarantaporo, OU noted the presence of "**a sense of the shared direction of the project,**" as "Sarantaporo acted as **a boundary object between partners** [...] an example of a DIY network project that was not a pilot." At present after twelve months more, there is some skepticism, for instance, although we are "working and getting closer towards a common vocabulary, **coherence has not yet happened throughout the consortium**" notes CG knowing from the pilot in Berlin that "it takes some effort and much time to get to the level of coherence we have now [in the pilot team]." Also CG noted "I miss an **outcome oriented interaction** between the project partners to systematically go through our insight on pilot level and exchange strategies on this level, **work together on the guidelines for the Toolkit** and speak of the **exit strategy** of MAZI."

The demand for more "**in-depth, small group discussion among the project partners about specific methods and approaches**" was formulated early on by NU, seeing that as a design solution of the cross fertilisation events "to enable all partners to **contribute fully** and learn from each other, as well as from "outsiders". [...] There could be structured **smaller sessions** around a specific issue or topic that only involve project partners. This is key to creating a positive environment where people are comfortable about sharing ideas about how to handle pilot study research activities;" along similar lines, OU stated, "In the lack of explicit guidance then partners might assume a role as they felt appropriate, or play a more listening role, again dependent on cultural norms." And in the current answers such issues came up again as a holding back element, as SPC noted "the lack of **active public reporting and conversation about the issues and interactions at a local level at each pilot** (progress or difficulties)." This critique is taken at the level of action, in the next consortium meeting having a working session to discuss such issues.

However, there is agreement throughout the consortium that **the "contact" of MAZI group with the local community** that was enabled so far by the cross-fertilization events has been essential, as well as the consortium's exposure to other (research and action) communities as a case in point being during the project review in Volos, when "**one reviewer challenged the usefulness of the toolkit**", in defense of which were raised fourteen voices bringing diverse but all valuable arguments.

2.1.1 One partner's understanding of other MAZI partners

In the answers sent out in February 2017 to the second self-reflection exercise, UdK noted with respect to the **interdisciplinary collaboration** in the MAZI project, a perceived "**sense of solidarity and disciplinary openness,**

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both towards the disciplinary diversity of the research actors" and at the same time, an existing "**dichotomy** between researchers and activists/artists as well as between seasoned EU-researchers and novices". The **differences and parallels** between pilot studies in terms of **political context** were also mentioned, as well as a critical aspect of our collaborations that came over in the workshop discussions in London namely "**negotiations about roles** and role-specific approaches", and also "competencies and other values brought by the different partners" (see more in the D3.6 on interdisciplinary framework, Appendix IV).

After the event in London, UdK points at "having a much better idea about the London team" in the mirror of their own pilot in Berlin, and CG considers the cross-fertilization events, "a learning experience in understanding the **structures and cultures** of the different partners"; mostly the "very different **prioritizations** within the project, **motivations** behind the project and definitions of the project goals".

From the OU's answers after the first year (D3.6 Appendix IV), some valuable lessons for their own pilot in Deptford, learned at the workshop in Berlin, were a) the **work in small groups** that "encouraged conversation with individuals and organisation representatives who we might otherwise not sought out at engaged with" and b) allowing "space for **informal conversations** during the event was also valuable: this was something that was present across all cross fertilisation events". In more general terms, the fact that these cross-fertilization events "have been of quite **different [temporal] lengths**" is seen as a challenge for the organizers as well as for the values and content of exchanges that they enable. Also OU noted "the value of the **attending partners documenting the event** so we could understand the key goals, the extent to which planned outcomes were achieved, and unexpected outcomes of note" in the case of the INURA conference, for instance. This year when they have been in the organizing team of the pilot workshop in London, OU had "limited opportunities to interact with other partners," and SPC maintained that these face-to-face exchanges are "essential to build on **a consensus about how we express our collective progress and improve our voice** on the subject of research, [...] developing an understanding of the **toolkit** or advancing its design or development".

The lessons seem to be cyclical, as for instance, in the first year before the workshop in Berlin, SPC organized an informal workshop in Deptford (documented in D3.6 Section 5.3), which set the scene for the more informal and mixed gatherings between project members and local community. About that NH noted in the last years' reflective answers (D3.6 Appendix IV), "In Deptford the most powerful moment of "contact" was during the low-tide walk, where the different groups (MAZI and locals) were separating and merging from time to time similarly to the tide. This **common activity allowed for more intimate interactions of the group with outsiders and revealed more personal aspects** of different people's character. In Berlin, it proved a very nice idea to **create parallel workshops with a mix of MAZI partners and local actors** that allowed us to witness each other. We were still a "separate" entity but much better integrated into the overall objectives. In Bucharest's INURA conference there was also a strong "alignment" of objectives with the non-MAZI group, which made it easy to "blend" even more. [...] **Looking MAZI partners through the eyes of all those different communities helped to transform the MAZI group as a community itself** and help us to understand better each other." More recently, NH mentioned another example of exposure to outsiders' eyes during the 2nd CAPS Community Workshop in Volos, by bringing up the consortium's answers to the project **reviewer's question on the usefulness of the MAZI toolkit.** On a different note, the MAZI partners cover a multitude of roles in the project, each of these roles coming to balance a situation, a necessity, another role, eventually a nicely weaved **canvas of roles** (see the answers documented in Appendix II of this document).

In the initial answer of NU after the first year (D3.6 Appendix IV), the toolkit was also brought into the discussion of the partners' understanding, in terms of "**focus for the toolkit** seemed mostly technical, with the use of environmental technology such as sensors and data gathering", and also by getting an impression of "the **labs** at the Volos campus." The subsequent symposium in Sarantaporo also "revealed some of the **technical and social challenges associated with the deployment of the technological response.**" In commenting on the variety of stakeholders and organisations involved, NU noted in the Deptford context the presence of "**stable, long-term organisations** with premises and funding to carry out specific work", as well as of "more **ad-hoc, based around individuals**, and focusing on social and creative activities, and living within the specific environment of the Creek". The experience in Deptford convinced the unMonastery "not to leave a zone behind in Kokkinopilos, since we did not **find anyone locally who was interested in learning it;**" on the contrary, they are inspired by **the success of the MAZI zone at the Neighborhood Academy** in Berlin (see more in Appendix II of this document).

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2.1.2   Understanding one's personal role in MAZI

UdK's interpretation of their role after reflecting over the first year common activities (D3.6 on interdisciplinary framework, Appendix IV) ranged from a) "**challenging**, as partnerships both with the researchers and their institutions in the consortium as well as the community was **tentative and fragile**" at the beginning of the project in Sarantaporo, through b) "**the mediator** between the consortium/EU-dimension and the local scene of community actors" while they co-organized the pilot workshop in Berlin, and c) "'**design experts'** as well as **institutional protagonists**, placed with the environment of activism somewhat in a mix of synergies, differences and contradictions," and then d) strengthened **design aspects** in our role within the project after the successful adoption of the Letterbox, the guestbook app and the interview tool. As for the CG, the role perceived is e) "to reflect **realities and contexts of community and community organizations** (not meaning that we can fulfill this role in its entirety evidently)" (see Appendix II of this document).

A critical moment during the pilot workshop in Berlin appears in many answers to the second self reflection exercise and regards the "consent form" request from the activists participating at MAZI event. It stimulated various reflections on the role of team members of a EU project and their role in the actions of local communities. OU brought up the issue of consent forms and here is the explanation: "In Berlin, there was debate about **what data would be gathered**, and the OU as Task leaders for pilot evaluation suggested that if data was to be collected that would be analysed and promoted, **consent should be gained from participants**. We wanted to show solidarity with the hosting organisations by offering some active input, and we drew on our disciplinary background. Some confusion occurred about the extent to which consent was required, by whom, and how it should be attained, and it revealed the **importance of the provision of time to enable a participatory approach** to the resolution of interdisciplinary issues and shared actions." (see D3.6 Appendix IV).

Regarding OU work on their own pilot, the role has shifted from a) "**understand[ing] the local context of another pilot** – both in terms of local conditions and also to see how an already-running pilot was operating, so in this sense we felt our role was **to participate and also observe**, and **ask questions** (as we were likely to encounter challenges already reached in Berlin)," and b) "**more as facilitators than leaders**: Deptford is SPC's **neighbourhood**" in the informal meeting in Deptford, to the pilot workshop in Deptford forcing OU to c) "**think carefully** about what we are trying to achieve, and what our roles are. Personally it has made me aware of the **balancing act required between the demands of community based action and academic goals**." As for SPC as organizer of the London cross-fertilization event, "My role has been d) one of **mentor and researcher** and on the other hand e) **antagonist and critic of the broader processes**."

A processual shift in the roles played is noted also by NH, mostly regarding the involvement in the interdisciplinary research in MAZI. On the one hand, there is personal "**sensitive**" impact, by being a) "**too engaged in the project**, because of the many years that I am working on this topic," and on the other hand, there are effects at the consortium level, being b) "somehow **disempowering** [...] my continuous "presence" and strong opinions about everything related to MAZI**," which received either critical reactions, or a "going with the flow" attitude (NH). This situation led to c) a more distributed delegation of responsibilities within the Zurich team, regarding "the WP3 coordination and the conception of corresponding deliverables" (see Appendix II of this document), and at the level of the pilot between INURA and NH, as well as d) "**allow[ing] the group to develop its own identity** beyond the initial vision for this project as this was described in the DoW" (see more details in D3.6 Appendix IV).

The NU reflections on their role in the project regards building an understanding of how "to **inform our own pilot study**" for which they felt after the first year that "there has been **less in-depth discussion** between the pilot study groups than we expected" and wishing that "there could have been a greater level of **detailed discussion of method and approach** between pilot study partners in order to examine and understand these different approaches" (D3.6 Appendix IV). At present the role of NU "was addressed through **reflections and discussions after the events**, less so during the events." The role of the unMonastery partners in Kokkinopilos was "**to test whether introducing this technology** enables these very different groups to engage and work together **more efficiently**, and whether introducing a diy networking technology can be a **more sustainable** way to bring remote areas into a more digital, more networked world." (Appendix II of this document).

2.1.3   Reflections on the relationship between research and action

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After the second year of work in the project, UdK notes that the **possible synergies and tensions** between research and action are being underlined, as described also in D3.6 after a year experience in the project. UdK's perception of these tensions shifted from "interestingly unclear" at the very beginning of the project; into the experience of the Berlin workshop (with the so-called "informed consent" incident) where there was on the one hand "**togetherness** in terms of a public appearance and shared identity" and on the other hand, "making ourselves and the project **visible – and vulnerable,**" which suggested the necessity to overcome **skepticism** and **distance,** for a "community ...**to position themselves,**" and ultimately to "**build trust between protagonists of research and action.**" For the consortium as a whole, UdK's perception is that "we work as **a diverse team that negotiates frameworks on the go**, instead of sticking to one particular set of rules" (D3.6 Appendix IV). After two years, CG notes that the role of the pilots and the community organizations is "**shifting from the start of the project**" as that feeling of "Guinea-Pig" is diluted and it became more visible that "the **efforts "on the ground" are very much steering** what is happening in the rest of the consortium" (Appendix II of this document).

From OU first year answers, the reflection that "Given the multidisciplinary nature of the events it is highly likely that unexpected outcomes will occur and these are no less valid than planned outcomes but this emphasises the need to capture what has happened in an appropriate manner. Cross fertilisation events that **engage individuals beyond the MAZI team** enable the researchers to gather more perspectives on the core research problems and to engage in shared activities that through action enable reflection on future research and pilot actions" (D3.6 Appendix IV). After the Deptford cross-fertilization event, which facilitated "to bring separate threads in Creeknet together", reflections shift more to a pragmatic perspective as "**the pressure of time and resources** made us think about what we wanted to achieve theoretically, and how this would be played out in practice," in agreement also with SPC's statement: "Only in action can we test our research and learn from the process" (Appendix II of this document).

Invoking again the "informed consent" exposing moment at the Berlin workshop, NH noted the alarming feeling of "**research** meeting action with **"requests"** and more **"taking"** than **"giving"**, in contrast to other project experiences when "**activism** appeared more like a **"privilege"** rather than a **"sacrifice"**, having the impression "that **activists enjoy a freedom** that is very precious and which most of them do not easily negotiate." At the same time INURA noted that when **research and action come together** due to the nature of the topic of interest, separating them might be advisable sometimes, "by stepping back in times to the one or the other of them" (D3.6 Appendix IV). The same dialectical take was noted by NH after the Deptford and Volos cross-fertilization events in 2017, contrasting **EU funding jargon** to the activist feeling in the project, but also feeling like **a privileged researcher visiting a troubled area** in Deptford. Moreover, during the workshop in Deptford were discussed three shifting research-action positions inspired by anthropological research: an **'outsider'** view, a **border** attitude, and the **"going native"** risk; the MAZI partners position themselves differently in this spectrum.

At the beginning NU took a clear position: "**In our understanding, research is action.**" (D3.6 Appendix IV). After two years in the project, the reflections are, "The events helped to understand more about **real-world action and activities**, but **the role of research** within these processes was not addressed in a very direct or explicit way. Mostly there was a lot of **implicit consideration of the relationships between research and action**, and this left a lot of space for interpretation, and possibly misinterpretation and misunderstandings between partners about methodology, aims and analytical perspectives." After a year of "having conversations with the village to come up with the plans for projects" unMonastery confirms that "**research is an extremely important part of the deployment of this technology**", as it "enabled us **to explain our work** to the village better" (Appendix II of this document).

2.1.4 The impact of the cross-fertilization on the design of every pilot

Together with MAZI project kick-off in Volos in January 2016, NetHood organized the first cross-fertilization event - the symposium in Sarantaporo (documented in D3.6) - to set up a currently working example of community networks, perceived as neutral to the other pilots, which in its aftermath provided inspiration for a range of possibilities to be opened up in the pilots. For instance, the **larger scale view,** that the fourteen village communities in the Sarantaporo Valley has generated in the MAZI consortium, has been mentioned. In reading the following reflections on the impact of cross-fertilization events on each of MAZI pilot projects, it is important to remember that the pilots are **highly diverse** (refer to D3.6, D3.8, D2.1-12 etc) and that they are **phased**

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differently during the project duration. These aspects stand out and have a clear influence on the partners reflections. This section presents how each member of the pilot teams has perceived these effects over time.

The pilot in Berlin is embedded into a very active movement of urban initiatives, thus it has been scheduled to organize the first workshop. That put significant pressure on the team, mostly as they understood from the beginning that it was critical to plan "a very careful approach that initially would **put the technological dimension into the background**" as well as to focus on their roles as facilitators and catalysts "**to engage the wider environment of Nak**". Thus in the weeks before mid July 2016 they scheduled long hours into community outreach and concepts discussions. Having to organize relatively quickly the Berlin workshop, however, the team had to focus on the concrete topic of the pilot, therefore they employed a triangulator, "the design of the **interview tool**" that was a result of the participatory design sessions. It functioned as "a boundary object" between the members of the pilot team, "was elemental in gaining a mutual understanding", and helped "facilitate the different perspectives/worlds that clash and make for synergies in this pilot study."

After they have successfully curated the MAZI cross-fertilization event during the Berlin workshop, the team had various opportunities to reflect upon their work and consolidate their ideas, objectives and design of the pilot process in the following events. That was the case either in the MAZI workshop at the INURA conference in Bucharest and Sibiel (September 2016), the interactions with "activists from Ministry of Space in Belgrade, [who] were conducting interviews for a platform they are creating, [which] provided perfect sparring partner for discussing approaches, goals and experiences," or in the preparation of the pilot presentations for DSI Fair in Rome (January 2017) having as audience the CAPS community, in addition to the MAZI consortium. (These later notes are from the UdK self-reflection on the events of the first year of the project; see D3.6 Appendix IV). Nevertheless, this state of affairs has continued through the workshop of the pilot project in London (June 2017), as well as in preparing for the project review at the 2nd CAPS Community Workshop in Volos. Through the interactions within these meetings "we started to differentiate between **operative and discursive** dimensions of our activities," and in the last year of the project to focus on securing "**sustainability of our actions beyond the limits of the project's runtime**". All in all, after two years of participating in the MAZI cross-fertilization events CG notes that an important role of these events is being "moments to **zoom out of the day-to-day pilot perspective**. It is a possibility to connect to other, sometimes larger issues or contexts." (Notes from the answers are recorded in Appendix II of this document).

The workshop of the London pilot was scheduled for almost a year after the one in Berlin. Allowing more time to prepare the desirable direction of DIY networking implementation was necessary though, having to deal with a pilot spreading throughout an entire neighborhood --the Deptford Creek being its backbone-- and with fast changing situations that are beyond the local communities' capability to influence London's rapid development seriously impacting their locality. No doubt the complexity of the pilot area impacted the team members' perspectives during the cross-fertilization events. Initially the team was inspired "to reflect on the goals and desired outcomes", "to extend our palette of **potential tools or approaches** we might use [after] seeing these in action, [...] to consider carefully what would be **an appropriate scale** of cross fertilisation event for London" and "**engaging a range of local actors, and effectively utilising spaces for gatherings**" (from OU first year self-reflection exercise; see D3.6 Appendix IV).

After functioning as curators of the London cross-fertilization event, the reflections shifted to more pragmatic considerations. On the one hand the event brought to the public eye the activities within the MAZI project, helping thus to advance the definition of **priorities**, and on the other hand it was "a great demand on our time and resources, so it also did have **a destabilizing effect as energies became focused** on making sure it was a successful event for the partners, the public, local MAZI participants, and the Advisory Board." At the same time, SPC notes the need to focus in the next phasing of the pilot, as "we have taken on far **too much diversity and difficulty** for the project as a whole to benefit from or comprehend", but over time there is "more information to go on about our pilot area of focus and interaction. **Now I would be better positioned to design a process from scratch**." (Notes from the answers documented in Appendix II of this document).

Based on the experience of the pilots in Berlin and London, the other two MAZI pilots in Zurich and in rural Greece are now in the phase of defining the offering to the local communities. In the case of the Zurich pilot, the interaction with local activists during the Berlin cross-fertilization event helped to build a clearer understanding was built by the team that, rather than contributing as a EU project toward the objectives of the ongoing cooperative movement in Zurich, "engagement from our side [project team] should come first and should be

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directed to issues that we have **a genuine interest** to work on, the project's available "solutions" should follow as **means to address problems that have become already "ours"** being part of the community of activists ourselves." In parallel INURA mentioned several meetings to allocating "more reflection on **how to approach the people in Kraftwerk1**" and to preparing of "a good ground for the even more complicated part of the pilot, the **knowledge transfer** from Zurich to Athens" (from the self-reflective exercise in D3.6 on interdisciplinary framework, Appendix IV).

After the latest cross-fertilization events in London and Volos, the interactions suggested that pulling from the community needs rather than pushing some technological solutions is imperative. During the project review in Volos NH understood that the **community needs** addressed in the Zurich pilot do not seem that imminent, as they may be placed on the rung of representation and self-expression within the democratic canvas. Moreover, as the Kraftwerk1 cooperative is approaching a more mature phase of development, its lived space shall be expressed in the particular spirit of its residents; hence the selected approach of collecting community art in the context of MAZI pilot (refer to the Appendix II of this document).

In the second self-reflective exercise (D3.6 Appendix IV), NU notes that the cross-fertilization events provide "**some inspiration around what is possible for the toolkit**". However, "there was limited time to discuss details about how research has been carried out, and also the "high- level" aims, for example, **contact, knowledge, information and discourse**, and more importantly perhaps, **how these relate to and connect with the forms of the final technology products, and scenarios for their use.**" After two years of interaction, unMonastery notes that "**knowledge collection and sharing** dominates the application of the technology, and both Creeknet and Neighborhood Academy were an inspiration."

2.1.5   Ideas for MAZI toolkit in general

UdK's initial metaphor of MAZI toolkit as "a bracket that needed to be filled with ideas" was appreciated "in retrospect, the **vague idea of the toolkit** already functioned as **a boundary object between partners** trying to make sense of it and to develop a mutual approach to filling it with life" and the interactions with communities underlines the understanding "to **think the toolkit as an open and, most importantly, accessible concept, as interests and expertise varied widely**" (D3.6 Appendix IV). After the Deptford workshop, for instance, CG noted learning about **sensors and video** that were not yet used in Berlin (and which are noted also in the answers of NH). After two years of MAZI work, UdK strengthened, "experiencing the vast diversity in pilot contexts suggests/underlines the necessity **to understand the toolkit as an open platform** that can and must host a wide variety of applications and functionalities. **I suggest to focus on more development in this direction** in the remaining year."

From OU notes, similar ideas resonate, for instance the necessity of "**clear documentation for less-technical audiences** [keeping in mind the] constraints in the time they can commit to an additional task", of **enabling customisation and playful engagement,** but also according to "James Stevens (SPC) though has made an interesting point: he has argued (as I understood) that there should be some work required in order to show a commitment: if people have no sense of commitment then maybe there is no real need to use the tool and we might be seeking engagement from people who are not going to offer a commitment in return". Dissemination of the MAZI toolkit is proposed also as a solution **"helping [interested people] become part of a community:** mailing lists, forum spaces, other tools to keep them posted of progress and give them opportunities to contribute or keep aware of progress" (D3.6 Appendix IV). After the cross-fertilization event in Deptford, OU proposes "**cross fertilization events are facilitated and documented through use of MAZI toolkit** (we should "eat our own dogfood", i.e. use the tools that MAZI is promoting). **The toolkit should be more visible in such events, and visitors should be walking away with a copy each**" (see Appendix II of this document).

From the first cross-fertilization events NH notes that "the role of the MAZI toolkit is far from **obvious** to people", however, they show interest "when they experience a MAZI Zone with some **guidance**," thus it should probably be first presented as **an educational device in small groups**, reaching to individuals that could then become themselves "**ambassadors**" (position that resonates the "border" take on the research-action spectrum, where people are trained into the methodologies and tools of researchers). As INURA states, "MAZI toolkit should not only be a technological toolkit but also one that **defines the rules and roles in processes where the technology comes into action.**" All in all the understanding is that "**We don't bring a solution to local communities. We bring the knowledge of tools that could be transformed to solutions if better understood by a few key local**

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actors" (D3.6 Appendix IV). Moreover, the unMonastery has collaborated with Paul Clayton, a Deptford team member, on **a pre-tech part of the toolkit** on which they are working further (see Appendix II of this document).

2.2   Scenarios of the MAZI Pilots

This section reports on the current status of MAZI pilots, as the partners have answered the self reflection exercise #3. In the cross-fertilization event in Deptford (June 2017), the project partners raised some important questions regarding our research and action work in MAZI pilots like why "being local" is important or what elements are critical for the toolkit etc. Hence in the follow up survey we included also these issue that became a part of the scenarios' description.

In the following sections, each pilot is introduced in one paragraph, in two versions marked as (V1) and (V2) or even (V3) for unMonastery's second pilot location. One version is provided by the researcher and one by the active member of MAZI team in the local community of the pilot. Then also both team members provided explanatory answers regarding the question of 'being local' as well as 'using technology in the pilot' with a special mention on 'promoting MAZI toolkit: pushing versus pulling tension.' We kept the accounts as they have been sent by their authors, with a few exceptions of formatting or editing some extended paragraphs into a synthetic and more effective form. We chose to keep the material in the raw form, as primary source for future comparisons within the pilot, and also because we consider the voice of the team members as being specific to the local project, giving personality to each instantiation of MAZI zone.

2.2.1   The MAZI Pilot in Berlin

(V1) The Berlin MAZI-pilot is multilayered. On the one hand it is engaging with community initiatives working in a broader sense on right-to-the-city issues. With the Neighborhood Academy as platform, we are bringing together the topics of self-organization and local ownership in and of city and local resources with the issue of digital self-organization and ownership. Through the hands-on building of digital DIY networks for the use in local urban struggles, we start conversations around the local, collective learning and the meaning of the digital in this practice. On the other hand, the pilot is connecting bottom-up strategies of self-articulation to the conversation around digitalization of cities and trying to build a framework where also public institutions acknowledge the voices from "below" when (re-)thinking technology and digitalization.

(V2) The Berlin pilot is working toward a community of practice around the notion of DIY Networking technology by collaboratively developing, deploying, reflecting on and discussing technology and its political dimensions with a diverse range of actors from the fields of urban activism, policy making and cultural institutions.

The question of "being local"

The "local" is most often the starting point when it comes to working with city initiatives. Their context is very local, and therefore introducing a localized technology makes sense. This does not mean that the "local" quality of MAZI is not also seen as a barrier since we are all very used to the universality of internet, but it is in practicing within the local and temporal restraints, where MAZI technology has had the widest effect.

For many of the individuals we engage with, the "local" aspect helps understanding MAZI ex negativo, in its different to "conventional" cloud systems. While for some, the local constraint is important on an operational level (e.g. because of sensitive data, weak infrastructure, etc.), this symbolic or metaphorical function seems to be even more relevant.

Using technology in the pilot

Physical manifestation of MAZI – we are now at the point where the physical presentation of MAZI is becoming more and more important. The physical artifact as a point of entry for the local community. In this sense we are also seeing the need for informative material and props to explain MAZI and make it self-explanatory.

We have worked with all of the applications presented in MAZI toolkit except for the sensor and video tools. Although we have several ideas on what other tools could be included, I feel that we still have to get acquainted with the versatility of the tools we have right now. One clear need, to mention one at least, is the adaptation of the etherpad tool, since the system at hand makes it very easy to "lose" documents because you forget what file

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name it had. The motto we have been following for the Berlin pilot has been to create a MAZI that is developed enough to be used, but unfinished enough to make the user want to adapt it.

In the contexts we engage in, mainly the guestbook and the interview archive are in use. Some engage with etherpads, though there are many grounds for confusion (finding existing pads, etc.). A recurring idea is to include DIY mapping (geographical) functionalities, maybe also in connection to the interview application. The latter is currently being further developed (the recorder app) as a stand-alone-installation for third parties to record their own interviews, as the original version is too complex. Overall, we need to strive for more simplicity and better documentation in terms of manuals, identity, etc (see evaluation of Berlin pilot study in D2.2).

2.2.2   The MAZI Pilot in London

(V1) Creeknet explores the relationships people have with their networks, how they interact and arrange their activities and use technologies to promote interests and improve outcomes. Our response is to encourage a process of self reflection and evaluation of resources to improve on effectiveness, introduce enhancements bridge relationships and foster awareness of those also active and in proximity.

(V2) Exploring the ways in which local voices can be heard in a rapidly changing part of London, enabling individuals and groups to enhance their practices, take ownership of processes and define how their voices are articulated in the wider world. Providing opportunities for individuals and groups to build contacts in the local area and collaborate towards common goals.

The question of "being local"

We have to be local to understand and appreciate the nature of active processes in play, engage with people openly and support their progress and ambitions for development. Trust, understanding and responsiveness would not be possible if not local and the building of relationships cannot be hurried. As for introduction to MAZI and the expectation implicit in the use of the toolkit there is always a sense they have to bear the sales pitch in order to remain included and continue to receive our help. It doesn't help that in practice the toolkit takes a lot of time and energy to understand. People like the idea or at least express interest when in conversation but it's out of their mind once we are out of proximity. Perhaps that's it, as we are only so local and the arriving and departures just add to the flickering light of interactions experienced in any time period.

With regards to ourselves as instigators of community actions around DIY networking in the Deptford Creek area, being visible and contactable, and hence where possible local is important at this point of the project. OU and SPC have debated this topic – the OU team is conscious of being outsiders, both geographically (from another town) and in terms of practice: do we risk being seen as 'the academics from an ivory tower,' or highly funded EU project representatives, who don't have the best interest of the local community at heart? The best practices in participatory research approaches need to be sensitively applied and continued self-reflection is required. We feel that SPC's credibility as local residents, who have long term, carefully developed relationships and trusted through their historical and ongoing actions are important actors in the process, but even they have indicated that they do not feel immediately local. We need to maintain local interactions as part of the development process in MAZI to appreciate local situations, subtleties and interactions, and be available to build trust. This takes time and energy. As noted by a MAZI colleague 'many meaningless conversations' are required as part of this process (though I would hasten to emphasise, these are not valueless: they build the emotional and social trust building glue that is required before substantial conversations and interaction might occur).

In respect to the digital networking technology specifically, for many of the participants we are engaging with the focus is around achieving a particular goal so they are often technologically agnostic – whether they are connecting to digital networking technology next to them or elsewhere on the planet is not a primary consideration. In some proposed scenarios and initial explorations, local digital networking technology is important because established, more remotely located networked technologies might not have the reach, or other affordances needed to fulfil the purposes. For example, WiFi/mobile phone signals from established infrastructures might not reach the desired locations and enable digital collection and sharing of resources in a specific locality, so a local digital networking technology might be a solution to bridge the gap. We have discussed the advantages of personally carried portable network technologies for this purpose. In principle have talked about the value of an offline network for the purpose of offering privacy away from the internet and it has been debated in a MAZI-Monday workshop with participants who are concerned about the unauthorized sharing of

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data, but have not in practice encountered a scenario where this has been explicitly requested, and recognize that no tools exist in MAZI system to support this functionality.

Using technology in the pilot

We have been keen to make use of every aspect of the toolkit as it has evolved. The addition of the camera controls has opened up opportunities to illustrate how image collection can add to the functionality but we are still quite restricted when it comes to maneuvering, material into the publishing tools or embedding the live camera view into web pages. Within the devices interface the camera controls are impossible to make use of so we pop this view into a page of its own where it can be configured more easily. So it should be presented in a separate menu item inside devices and supported with documentation and reference materials for use of the camera in other ways... using scripts and other embed actions to control camera and extract its output... it's a big subject in itself.

We also note that a) switching between offline connections and conventional uplinks requires regular clearing of browser cache and resetting of preferences; b) in our efforts to engage and support our pilot participants we still have to hand crank all the MAZI specific mechanisms and that means high maintenance and postponement of handover. All this said, we are increasingly being asked to attend working groups elsewhere and explain the process. Central St. Martins School of Art (London) 3D Fine Art course have invited our involvement in a research trip to Sao Paulo to present the mazi toolkit and help social movement improve on their public archiving and communications status.

Few in the pilot have a publishing interest or ambition to add to their workload and even then this minority struggle to keep up with their existing community commitments. When we work together on location the popular tools are those that get the most exposure whilst working so we are conscious to take time when possible to introduce our findings and suggest tools as we discover and use them elsewhere or adopt them for use in our own process. Use of etherPad grows on people and we now have three groups using it for meetings but they access the tools at the friends.sandcats.io server for it remains public and accessible when they return to their respective homes/and workplaces. Its use in the mazizone is limited by this understanding but a most valuable tool for those without internet gateway or whom wish to shelter out of reach of commercial cloud or authoritarian surveillance. More can be made of this aspect of the toolkit and increasingly people will warm to this as an option for reassurance.

Most recently we have dropped the default dashboard/portal completely and concentrated on a more detailed and integrated approach to present the options within Wordpress pages. This is comparatively easy as we are experienced users but this too has issues as despite its undeniable penetration as the world most widely used CMS, few have had more than a fleeting experience in its use let alone setup and configuration. The obvious danger then is that to put the toolkit into use still requires a level of confidence and resourcefulness that is way beyond average for our pilot participants. Tools and guidelines for structuring community workshops and facilitating discussion by communities and individuals around the key MAZI topics and themes are needed. The toolkit should be more than just a hardware and software package, but have guidance for activists to help them engage communities from before the point of introducing the hardware/software system.

The website should be the starting point for a wide range of audiences to engage with MAZI approach to DIY networking so we should ensure that another aspect to the toolkit is a front end to the website that engages individuals in the concepts and leads them to reflect on their circumstances or motivations. Perhaps some more interactive elements that inform initial configurations and lead to a customized download – "you have indicated you are interested in X,Y, Z, now click here for your customized MAZIzone"?

The majority of the participants we are working with do not use technology as a primary focus of their activities so user interface issues will often be commented on regarding the suitability or otherwise of particular tools: the interface needs to be checked by further structured design testing.

On a positive note, shared authoring and recording of notes for capturing conversations in meetings has been a basic function that has been understood and well received. Autonomous powering of hardware units is seen as attractive. The inclusion of WordPress provides familiarity for a number of our participants.

The gathering of environmental sensor data that can then be accessed across networks has been a specific request that we have not been able to fulfil so far but we hope that we can achieve in the project, e.g. one-wire

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sensors to networked devices in locations that enable local collection of data for the purpose of knowledge sharing and triggering debate.

From our perspective, among potential steps to be taken in the future are a) supporting or developing the senseHat; b) including powerful GPU, GPIO or Bluetooth tools for the toolkit; c) using the friends.sandcats.io server in the MAZI zone; d) exploring the many options tools and apps that exist to make much use of these raspberry pi attributes; e) Berryboot is a bootloader for Raspberry Pi that offers so much we could make more use of in development of the tools the backup of the hard work any operator will have to go through to get a mazizone in place. It also opens the door for easier investigation of alternative OS for the Pi that will expand its use as a general tool and use in the workers toolbox overall; f) more comprehensive documentation should be provided within the environment itself (the SD card installation of the mazizone), rather than links to web locations; g) for advanced users, there should be documentation to support editing at a deeper level than through the GUI where possible: for example, well commented css sheets (e.g. the Guestbook tool); h) translation of the MAZI interfaces to alternative languages should be supported as a core element: we have had requests for guidance on how to translate to a range of languages: French, German, Greek, Brazilian Portuguese and an indigenous South American language, Tupi-Guarani (this uses an extended Western Latin script); i) tools that support anonymity, allowing protected storage of data and communication, should be supported within the toolkit. MAZI Description of Work explicitly discusses "privacy" as a potential benefit of DIY networking but we do not address this at present beyond the opportunity for a MAZIzone to function while unconnected to the internet.

Promoting the MAZI toolkit: pushing versus pulling tension

My impression in Creeknet – though James and SPC are the 'gatekeepers' to the local communities and more sensitive to the situation on the ground - is that we are more in a "pushing" than "pulling" situation with the MAZI toolkit at present. James and SPC have considerable local credibility and respect so if he says there's an interesting technological innovation people should take a look at, they will give him some time and come along to workshops to find out more. There's genuine interest from a number of people, and the fact that we have some people returning to workshops suggests there is real interest in what the possibilities might be. My impression is that the toolkit itself, as an early prototype with development work still to be completed (particularly around the user interface), can put people off exploring further. Local people are realistic, they recognize we're not a multimillion euro development team, but it is important that the tools are usable, especially as we're portraying this as something that's easy to pick up and use without a computing background. I think this has meant that people might be willing to explore the tool at workshops, but unless there's a very pressing need, there isn't the motivation to overcome the interface barriers to achieve goals if another tool can be more easily used. This might point to us having to reconsider how we present the MAZI offering – thinking again how we frame the conversation, what the 'pre-technology' part of the initial conversation should look like, in order to engage people to the point that they consider its worth despite any immediate shortfalls in tool functionality (because we cannot make a perfect tool, there will always be some requests for improvement).

I must admit though we do have some situations where there is a "pull" opportunity and we have as yet been unable to fulfill those requests. We have had initial conversations, requests have been made, so we're in the difficult position of keeping contacts engaged while we try to resolve those requests. One example would be environmental monitoring to inform conversations around the conditions of the Creek. We've had clear, positive responses to the idea that offline networks might be able to gather data that could form the basis of conversations, yet it has proved difficult for the MAZI project to satisfy this functionality request. The challenge is lack of resources.

2.2.3   The MAZI Pilot in Zurich

(V1) The Zurich pilot started with the assumption that we have a lot to learn from the participatory practices in cooperative housing projects. It proves to be an extraordinary experience indeed. Over time we are realizing, however, that apparently there is a gap inside those communities between the "early-adopters", typically very politically engaged people that are very active in the beginning of the projects, and those coming after the development of a project, and often mostly searching for affordable housing without necessarily sharing the political values behind MAZI. Our pilot is now in a phase that could play a key role in building a little bridge over this apparent gap, not only with the use of technology per se, but also with the hybrid processes initiated around

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it. That has the potential to opening the space of participation also for the less engaged members of the cooperative (i.e., the Kunstwerk1 community art project). On the other hand, the more politically engaged and experienced in cooperative forms of organization (housing, food, etc) may be interested in MAZI, if they understand it as a project of a similar nature but applied in the case of information and communication technologies. The design of specific applications that can facilitate social interactions inside a cooperative housing project is also important but I think that it can come naturally when the whole concept of ICT is brought "inside" the cooperative as an integral part of the various participatory processes already present (i.e., the "Internet salon" working group). Of course, these two parallel threads are independent and we need to carefully develop them so as not to end up interacting in both domains with the "already converted" "usual suspects".

 (V2) The MAZI pilot in Zurich is constantly developping. A MAZIZONE is now installed permanently. It allows inhabitants to access photos and documents that originate from the beginnings of Kraftwerk1. A vernissage with photos from 22 years ago enhanced a lively discussion and ad-hoc reports by the participants. Events will follow to support people making use of the MAZIZONE in a user friendly and easy way. The evaluation of the Kraftwerk1 Intranet brought some useful insights – mainly that its acceptance and use are much higher than expected. It turned out as a good opportunity to get in contact with the inhabitants and start discussing socio-political issues relevant for MAZI. A workshop in the INURA conference retreat brought 11 people form 8 countries (Cuba, France, Germany, Netherlands, Switzerland, Sweden, Turkey, United States) together and bring the comparison of models, frameworks and projects forward, the very idea of the INURA coop initiative.

The question of "being local"

In Zurich Internet connectivity is abundant, and "being local" is mostly relevant for a special type of applications that would benefit from the "de facto physical proximity" property of local networks like the Guestbook or the Interview archive. Then our focus has been on places and the idea that they can be equipped with a local digital space that only adds options (and not trying to propose "alternatives"). But still it is difficult to stimulate the interest of people when in Kraftwerk1 for example the community has already implemented an Intranet service after a lot of debates and deliberations, which is still not always a comfortable topic to discuss.

In this context, the most convincing point in our pilot is the political dimension and the DIY aspect, beyond practical benefits. And when political arguments are put in front, we may face the problem that such arguments only resonate with (actually) a minority of people, so the right balance should be given between the two if we don't want to end up in a "filtered" bubble.

MAZIZONE without internet meets exactly the aspect of the local. The main topic is here: bring the people together in a specific room or environment and nourish the community.

Using technology in the pilot

The most successful MAZI Zone installations to date are those the include the Hybrid Letterbox which guarantees a certain level of participation and playfulness. However, we soon realized that this artifact distracts a little from the digital dimension, especially in short events when there is not enough time and attention to engage through the Guestbook application. And at the same time, the whole system is not robust enough to leave it permanently in a public space.

Our first permanent MAZI Zone is built around a hybrid photo exhibition, initially depicting an event in Zurich in July 1995, a recollection of the early days of Kraftwerk1 housing cooperative. Through the MAZI zone, we invite the current residents of Kraftwerk1 to collectively transform the exhibition into a community art project, uploading digital photos and comments which will gradually become part of the actual analogue exhibition, by printing a selection of them and overlaying them on the current selection, at regular intervals.

For this, it would be very helpful to have some sort of "evaluation" functionality, not necessarily voting, but a way for people to "interact" with the uploaded material in a way that would help decide which items would make it to the physical collection. The guestbook comments is a very nice feature but there are not "signalled" in the home page and are very difficult to track. It would be helpful to explore and recommend available add-on applications to NextCloud that could help in this direction. For now, not having such a functionality we have recently decided to perform such voting processes "in person", which might turn out to be anyway a better approach since any online voting/reviewing scheme could lead to issues of identification, moderation, etc.

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The option of translation for the admin panel is critical for motivating community members to "take over" the administration since even if they talk English, the language is creating a certain distance and does not help to overcome the natural "barriers" in order to take such a responsibility.

Nextcloud is really easy to use, but more events are needed that the inhabitants share their documents or at least visit the MAZIZONE and have a look at the docs and photos already uploaded.

For this, it would be great if the platform keep track of a more detailed history of activity in the dashboard (e.g., files uploaded, guestbook messages and interviews, etc) which would increase the "interestingness" of joining the MAZI Zone. And even more playfully, some visual indication of the activity in the MAZI Zone (like a source of light blinking when there is new activity) would increase probably the levels of participation.

Promoting the MAZI toolkit: pushing versus pulling tension

The actual deployment of MAZI Zones just started in the Zurich pilot, and we have made a first selection of elements (applications) like the NextCloud, Guestbook, and Interview Archive as the most relevant in the current scenario. But these are presented only as examples since our objective is actually to put the toolkit itself in the centre of the discussion, which is the reason that we have initiated a "technology group" called "Internet Salon" (a note on the side, it resonates with the "Waschsalon", the place where all washing machines are placed) inside the Kraftwerk1 cooperative.

A very central element of the participatory methodology of the Zurich pilot is turning the development of the MAZI Zone(s) inside Kraftwerk1 relevant also for the "initiators" so they can place themselves as members, and not as external actors, of the community. This is a rare situation, which is feasible in our case because of the fact that both pilot partners are already close to the community (NetHood making use of the office space, being members of the cooperative and other related ones like NeNa1, and Philipp Klaus being resident, using office space, and also recently being a member of the Kraftwerk1 board).

2.2.4   The MAZI Pilot in Greece

(V1) The unMonastery Pilot study involves working in new settings, building relationships with communities and introducing DIY technologies into these settings. This work within the local communities is carried out by the unMonastery group. The two settings within the pilot study are villages in northern Greece.

(V2) The unMonastery Kokkinopilos pilot was based on a 1.5 year long collaboration between the unMonastery group and a small village in rural Greece. The pilot has been a slow evolution of the group's grasp on the village's history, its culture, the present situation, fears and dreams. We placed very little emphasis on the technology, and focused on a mutual understanding of needs. The proposed deployment of the MAZI zone was two-fold – for the use of the in-house community of the unMonastery, and for community outreach within the village. The outreach work mainly centered around collecting local points of interest, stories, myths, recipes, and other interesting pieces of local knowledge. (We planned the deployment of knowledge sharing hubs within the area but we have not got there during this time.) The outcome of the pilot is that in this particular situation, the MAZI technology was not appropriate. It became an additional layer of complexity within our collaboration with the village. So we unplugged our MAZI zones and turned the large office room into a walk-in analogue MAZI zone. Each project we planned had a large span of bare wall where we tacked up photos, notes, hand-written interviews. We also (digitally) recorded interviews, GPS points, photos, etc. By the end of the project we digitized everything, and upon discussion with the village president, we put some of the information on the internet (www.kokkinopilos.gr). The bits and pieces of paper we collected into a large (physical) scrapbook. Our parting gift was a big box filled with the various materials we worked on (including the digitized things on a memory card). Because the micro SD cards kept becoming damaged every few days, we did not leave a live MAZI zone behind. If version 3 will prove to be sturdier, we can set one up easily using the existing material.

 (V3) The unMonastery Tsepelovo pilot: This pilot aim is to introduce new technologies to a small community in Zagori and inform the locals about the diy local networks. Also to research the history and culture of Tsepelovo and mapping the village and the trails on the nearby mountains in order to build and establish a local network to the village with these elements. The majority of the people from the Tsepelovo are pleasant, willing to socialize with others and have fun when they get an opportunity. Although they care and help the other members of the community most of them are not willing enough to act collectively and to collaborate with each other for the

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common good but they are eager to share knowledge with others when they have a chance. As regards the sustainability of the community there are few families with children, most of the people who live in Tsepelovo are old age pensioners. The region of Zagori is a tourist destination depending mostly from the domestic and the trekking tourism. The Greek economic recession reduced the number of the Greek tourists at Tsepelovo. The locals make their living mostly from tourism. They plant and produce few products to cover their needs and they collect wild products (berries, herbs, nuts etc) and wood from the area.

The question of "being local"

In both the unMonastery pilot studies the local village context is an important aspect. The unMonastery partners can discuss this more fully due to their first hand experience within the pilot test labs.

We wanted to create layers of accessibility, a small amount of information to be visible online (which is something we were asked to do), some on the local network (sarantaporo.gr) and some only in Kokkinopilos, using the raspberry pis. It is an interesting problem for the unMonastery, how to 'promote' technology without becoming recruiters to unsustainable and extractive practices. (We never got to work on the middle layer at all, and decided to leave the bulk of the material on a memory card and in analogue format rather than on a pi due to the fragility of the system.)

Sharing knowledge is for the benefit of all of us. Collaboration and self organization gives power to the communities. As for a small, distant community like Tsepelovo, the communication and interaction a local network is not useful. In such a small scale as it is for this village, the locals communicate and interact with each other and with the visitors physically, without the help of the new technologies. They need the new technologies to help them to communicate with those who are far away from them. As for the use of the local network as an archive of cultural and environmental information and documents, the small range of the antenna does not give the possibility to connect and use the network from all the parts of the village something that benefits some and not all the members of the community.

Using technology in the pilot

The unMonastery partners can answer with question better from their first hand experience of their pilot work. From other experiences of using the toolkit, it is possibly easier to start from the point of pushing the idea of DIY networking as there may not be a perceived gap or need. Listening to people and interpreting their ideas and suggestions are important, along with trying different approaches and flexibility. Sometimes failures can force different ways of thinking.

We have developed a demonstrator using the main networking technologies in MAZI toolkit, but have found the dashboard and software options rather restrictive. There is a dilemma in that the software is too underdeveloped to be very easy for non-technical people to set up, and the functionality is limited compared to conventional software. On the other hand, a programmer can use the toolkit as a basis for developing interesting applications, but they could do this fairly well anyway without using the toolkit. Perhaps the toolkit could ultimately be more "modular", focusing on the basics, and supporting step-by-step learning of programming.

We could use MAZI zone in a dual mode for our in-house work – to keep a diary, and work on shared documents, and also on various Wordpress sites – because it solved the problem of unreliable internet connection. The Interview tool would have been brilliant for our outreach work but the two Greek speakers had android phones which recorded incomprehensible sound, plus we would have had to take the raspberry pi with us since each interview had to be uploaded before a new one could be started (I think this is now solved.) We did not use the MAZI zone in any lasting way for the village, because we did not want to leave anything there that was so unreliable. Maybe the next edition.

Starting points:

- Technology: Raspberry Pi / Mazizone , Pens, paper, general stationery, Printer/scanner.
- Interaction with locals: Using collected local knowledge to create a document (scrapbook) for reflection, transference of experience for families, and as homage to the place. Pens and paper are the choice of technology for those with little digital interest/ability, thus creating a tangible 'Mazizone', an exercise in pretotyping - finding the right 'it'. Locals are asked around for tea, interviews are given, titles (can't remember names) on walls are given annotations. Being available also meant a system of taking details

from people visiting when no one around too - notepad/pencil on string outside with 'If we're not in..' message.

The Mazizone's primary use was logging the school house participants experiences and thoughts, with potentials attempted in local taverna but not pushed through (points of contact into the village and a jump into digital waters needing a translator/diplomat). As a legacy for the school, a manual was created, using http://bookleteer.com.

Potentials: Discussions and self documentation via video (Bembo's work) not sure what apps he was using...also potential for aiding walking routes with Bluetooth beacons as used in Creeknet, providing the 'tour without a guide' insight. A potential legacy outcome (for tourism) involving the school an option to keep the Mazizone in place, storing documents and information about Kokkinopilos - still needing signposting/indicating.

Missing: Robust interviewing functionality - using mobile phones a variable, too easy to be a mess. (Prinzessinengarten much better with dedicated hardware); Need for projector occasionally and printer/scanner consistently.

Technical issues: Poor/non existent protocols for issue/feature reporting - why is this question being left to a reflective document to say this? Problems with imaging and 'zones after use, weeks to have a dialogue. No point in asking for things? WordPress has multiple language support, only English in Mazizone. Ability for Mazizone to share across mesh network in Kokkinopilos, enabling sharing of services - possible tourist information across the village (as local politics and affiliations are fragmented yet generally passive).

Need for greater technical knowledge in project, better documentation... which lends itself to the question - if a DIY project, why is it so hard to use/administer? User Interface and User eXperience are not approaching a generalised approach for people with only recent access to internet services (this may not be entirely the case). Needs to be more straightforward, making complex user journeys into direct routes, defining admin tasks to be done and enabling individual agency. Webserver installation of PHP (scripting language) had to be adjusted manually to allow local uploads greater than 2MB - a real issue for an offline system.

2.3   Reflections on the MAZI Toolkit as a boundary object

As it is already explained in D3.2 and D3.3 deliverables, MAZI toolkit functions as a boundary object that derives its materiality from action. Thus in this section we propose a possible structure for analyses of the actions performed during the MAZI project, based on Donald Schön's reflection-in-action (1983), in which doing and thinking are complementary, while trying out and probing the experiments in the project; experiments include even this tentative framework for creating a typology of action. These theoretical insights are drawn based on the answers of the first three self-reflection exercises on project interactions, that are documented and presented in an analytic form in D3.2, D3.3, D3.11, and in this document D3.12.

MAZI based on the following premise: through **a dynamic process of research and action**, the relatively 'stable' situation of the project kick-off is likely to **shift toward shaping a relational space** that is prone to **interdisciplinary collaborations to co-designing MAZI toolkit** (refer to D3.11). The self-reflection exercises are tools that the partners employ to facilitate this process, and the subsequent analyses of MAZI partners' answers to these questionnaires make the topic of research mainly to provide the necessary energy for this transformation. We are aware that the concluding notes of such analyses are temporarily valid, as by the time they are drawn, **the process of experimental action in the project has already shifted to a different state**. Therefore, we have structured a complex collaborative interdisciplinary process that stems from the above premise as a spiral shape, rather than linearly. There are other proposals employing qualitative methods to interpret experimental action that may adopt a linear process (e.g. the CAPS project MAKE-IT 2017 D3.2) as such an approach suited their research topic, in which after a set of predefined steps, the researchers draw conclusions after testing the so called hypotheses; this is different than the case of the MAZI project.

The choice for the MAZI working process derives from the project topic itself: **the design of MAZI toolkit**. We understand **the process of design**, as a counterplay of raising issues and dealing with them, inspired by Horst Rittel's description of the peculiar condition of this process, "You cannot understand the problem without having a concept of the solution in mind; and that you cannot gather information meaningfully unless you have

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understood the problem but that you cannot understand the problem without information about it" (1984, p.321). As such instead of defining hypotheses to be tested, from the beginning of the project we have structured a series of **iterative loops** of work in the pilots - cross-fertilization events - self-reflection exercise - interpretation of answers - work in plenary - work in the pilots. As a matter of fact also this document plays a stimulative role in this spiral process, because the deliverables have been designed in such manner to facilitate this process. Furthermore, to support the interdisciplinary generation of the MAZI toolkit, its application and transfer of knowledge, we have outlined the **interdisciplinary framework** (refer to D3.5 and D3.6), **similarly circular and iterative,** implying reports, cross-fertilization events, evaluation (see D3.8), and dissemination activities (see D4.1, 4.2, 4.4, 4.6).

In the project review in Volos, one of the EC reviewers has challenged the group if the MAZI toolkit is needed at all, which generated a diversity of answers representing the many perspectives existing among the MAZI partners. Answers ranged across categories that we identified also in the reflections regarding the consortium's understandings of DIY networking (D3.6 Section 2.1):

- a technology-centered perspective
- a data/information exchange dimension
- the empowering "self"-production point of view
- the experimental dimension of technology
- the community organization perspective

2.3.1   MAZI partners engaged in action

In the first self-reflection exercise (documented in D3.2 on boundary object) the initial situation at the project kick-off is surveyed, including speculative pilot scenarios, the partners' understandings of DIY networking and the disciplinary perspectives existing in MAZI. In the second self-reflection exercise some potential toolkit uses are explored, compiled a shared vocabulary as well as feedback on the cross-fertilization events of the first year. In the third exercise feedback was gathered regarding pilot scenarios, the cross-fertilization events of the second year and more proposals for concepts to be included in the MAZI glossary.

After reading the MAZI self-reflection exercises, as coordinator and editor of this work, Ileana Apostol (NH) made **a first selection** of quotes for the narration in the Section 1 of this document, based on what appeared to be critical in each partner's reflections, by either making a difference with or strengthening the other answers in comparison. The complete answers to the third exercise are included in the Appendix II. It is important to note that the following quotations make sense in the context of the complete answers, and that the intention is not by any means to decontextualize them but to highlight some of the important ideas that appeared in the reflections.

It is critical to note that there are challenges and opportunities in taking this role in the selection, analyses and interpretation of the survey material. It is a time intensive activity. On the one hand, making sense of the answers at a meta level requires deep knowledge of their content. On the one hand, preparing the raw material as a primary source for action analyses implies a degree of anonymisation of the answers, by disconnecting them from the complete narrative of one's answer to the survey, in order to integrate them in a distilled answer to one question.

The second step of analysis was to **annotate the descriptive text** of Section 1 by marking in bold some key words and ideas, to derive an initial structure of analysis that is proposed below. Covering a spectrum of attitudes in action, fourteen ways of acting are first exemplified through quotations, which denominate possibilities rather than research 'findings', and in this document they are briefly illustrated in Table 1. Many more quotations could be identified during MAZI group meetings.

Under *exercising leadership* fall those actions that have an effect on the entire group and promote a dominant view on the project process. The *rigidity in the comfort zone* denominates a personal attitude of partners to keep the project work within the limitations of their frame (personal, disciplinary, institutional etc). When there are controlling forces and rigid attitudes, inevitably *the critique and counterbalancing actions* of other partners come to the fore. Other manners of controlling while staying within the known frame is either by *pushing what I know well* (e.g., from my disciplinary background) or by asking partners for specifications in a passive way,

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which is called here *decontextualized 'requirements' for design.* In response to such uni-directional actions, the other partners might either improvise and respond ad-hoc, by the name *do it on the go* or *doing on the spot* or simply going with the flow in a detached style, *laisser faire*. Of course the alternative to that is *planned action* that is possible by *structuring the collaborative process*, by *providing technical explanations*, by *finding out about community needs* or by *observing what is needed*. Then based on the action plan, there are various steps in *taking action* and in the process there are moments showing some *flexibility in action* and even sometimes a necessary *letting go.*

Table 1. MAZI partners in action

Type of action in MAZI	Quotes from the MAZI self-reflection exercises
Exercising leadership	"too engaged in the project, because of the many years that I am working on this topic … [creating] a somehow disempowering [effect on the project]"
Rigidity in the comfort zone	"focus for the toolkit seemed mostly technical, with the use of environmental technology such as sensors and data gathering"; formulations like "It's lacking…" "There could be…" "I miss…" that are not followed by a plan for action.
Critique and counterbalancing actions	"antagonist and critic of the broader processes"; "critique of the strong feelings with respect to what the project is about"; "going with the flow";
Pushing what I know well (disciplinary background)	"consent should be gained from participants"; "strong opinions about everything related to MAZI";
Decontextualized 'requirements' for design	The initial technologists-bias "what are the requirements for the toolkit?" [that has been transformed into designing in the process "face-to-face exchanges … to develop an understanding of the toolkit or advancing its design or development"
Do it on the go / spot	"we work as a diverse team that negotiates frameworks on the go, instead of sticking to one particular set of rules"
Laisser faire	"going with the flow"
Structuring the collaborative process / planned action	"the balancing act required between the demands of community based action and academic goals"; "to structure smaller sessions around a specific issue or topic that only involve project partners"; "it was critical to plan a very careful approach that initially would put the technological dimension into the background";
Providing technical explanations	*Explanations about the technical requirements of the MAZI Toolkit… about design; about how communities are to be approached etc*
Finding out about community needs	"a learning experience in understanding the structures and cultures of the different partners"; "conversation with individuals and organisation representatives"; "negotiations about roles and role-specific approaches";
Observing what is needed	Necessary "a greater level of detailed discussion of method and approach between pilot study partners"; "small group discussions"; structuring the process;
Taking action	"a more distributed delegation of responsibilities"; *various proposals, including a consortium meeting regarding a specific topic*

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Flexibility in action	"allow the group to develop its own identity beyond the initial vision for this project as this was described in the DoW"
Letting go	"I need to retreat for some time"

The following step was to open up these categories for discussion with all the project partners who responded the self-reflection exercise, and upon **agreement within the consortium**, their feedback is included in the typology of action, which is still work in progress, being a topic in the consortium agenda. In the next Section 3.3, these attitudes are presented in transformation during the two years process of the MAZI project, and the Section 1.3 of the D3.3 on boundary object formulates the effects of these shifts, for the conceptualization and implementation of the MAZI toolkit. Nevertheless, such transformations initiate the process of shaping a relational space as context for interdisciplinary collaborations.

Below in the Table 2 this methodology is presented as a first draft to be discussed in the next plenary project meeting. Note that the elements of analyses do not necessarily follow a linear process, hence the choice to present them in a tabular form.

Table 2. A potential methodology for reflections on MAZI actions

Elements of analyses	Observations: what, who, how, why, etc
A first selection of quotes from partners' reflections	What appeared to be critical in each partner's reflections, by making a difference with or strengthening the other answers in comparison.
Annotation of the selected text	Marking in bold some key words and ideas, to derive an initial structure of analysis having in mind the purpose of the analyses (evaluation of the transformative elements of action)
Denomination of possible categories	These possibilities cover a spectrum of attitudes in action, derived from the answers, where various actions during the project shift dynamically
Opening up the proposed categories for discussion	Discussion loops with the project partners who responded the self-reflective exercise toward receiving feedback and reaching agreement regarding them
Configuring a typology of action	Upon agreement within the consortium, the feedback is included in the typology of action
Actions in transformation during MAZI process	Paying attention to the the effects of these shifts, by noting the sequence of actions as well as the mobility of details, one may build an understanding of what may help or may hinder the progress toward the achievement of the project goals, understanding that can initiate the process of shaping a relational space.
Self-reflection and building awareness	It is necessary to record the reflections during the selection, analyses and interpretation, and also the discussions that the framework, transformations of actions and the effects of these shifts generate in the group

2.3.2   Roles in communication and collaborative practices

From the answers to the self-reflection exercises, some **collective spaces** that facilitate collaboration seem to stand out, and in the various narrations they have been identified as:

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- face-to-face exchanges
- informal conversations
- intimate interactions
- working in small groups
- mixing with local communities and other communities (e.g., INURA, CAPS)

Regarding the last space of interaction, **the lens** through which one may look at the partners' relations matters. On the one hand, there is a perspective of the others inside the consortium, and on the other hand, there is a view of the project team projected to the public at various milestones in the project (e.g., INURA community, CAPS community, local communities of the pilots) with high potential to stimulate the exchanges, ties and bonds within the consortium.

The D3.3 Section 2.1 proposes a series of **tools for communication** to be employed in MAZI future collaborations in different spaces are mentioned above such as Liberating Voices; MethodKit; Positioning Cards etc. As for the **negotiations** implied in future consortium deliberations or in those of the pilot teams, the project process may follow a spiral flow crossing through the following moments (refer to Marianella Sclavi, 2006 mentioned in D3.6 Section 7.1.3):

- active listening where attention is very critical
- emotional self-awareness, which is a dialogue between emotions and the way we deal with them, and
- creative conflict management or, also called, alternative dispute transformation.

MAZI partners cover **a multitude of roles** in the project, each of these roles coming to balance a situation, a necessity, the role played by another partner and so forth; eventually the co-design of MAZI toolkit will result also in a nicely weaved canvas of roles. Mostly from the reflections on the personal role of the partners and on their perception of others in the consortium, the roles cover some of the categories advanced in the first version of this document (D3.11 Section 2.2.3) namely **triangulators, facilitators, catalysts and curators** (see above the Section 1.2). Roles may be derived also from the answers to the questionnaire on the impact of the cross-fertilization event on every pilot or in inspiring ideas on the toolkit in general, or from reflections on the organization of a cross-fertilization event, as well as from the participation in shaping MAZI glossary. The next and final version of this deliverable will include a more in depth analysis of the roles played in collaborative practices in MAZI.

2.3.3   The context for interdisciplinary collaborations

The purpose of the action analyses is to discover the intricate relationships that are shaped over time in the collaborative work, to understand what has brought progress toward the project goals and what has been holding back the advancement of the project action. By and large the answers to the surveys depicts a complex canvas of interrelations emerged during the first two years of collaborative work in MAZI, that transcends action as a process of material production and reveals its relational capabilities and implications; if properly understood and taken at heart, this intrinsic potential may stimulate a more fluid process of collaboration with sustainable material and nonmaterial results.

One may note that the different transformations of roles over the first two years of the project are connected to a certain extent to the disciplines of the researchers and activists engaged in the pilot teams.

- Co-designing (infra-)structures versus designing solutions (UdK- CG)
- Participatory action research (OU- SPC)
- Interdisciplinary structures for information sharing (NH-INURA)
- Speculative design: participatory creation and dialogue (NU-unMonastery)

There is a spectrum of attitudes in the collaboration of MAZI partners, and in observing the transitions between them, it is important to note the sequence of actions as well as the mobility of details, for instance, giving up one's own position and shifting personal frame and position in the group(s). That will potentially facilitate to build an understanding of the effects that these shifts may have on the collaborative work toward achieving the project objectives.

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From exercising leadership to letting go: In the NH self-reflection, a transition is expressed from being "too engaged in the project" and having "strong opinions about everything related to MAZI" to allowing "the group to develop its own identity". This shows a first sign transforming the understanding of leadership into partnership, which is to be brought to the fore in the consortium meetings.

From rigidity in the comfort zone to flexibility in action: One transition, NU noted that at the kick-off project meeting the focus for the toolkit seemed mostly technical, and over time it became more inclined toward engaging communities in co-designing the toolkit. From a different perspective, it allows the necessary space for the group to elaborate on possible designs and influence the course of project.

From critique and counterbalancing to taking action: There are many notes regarding what could/should be done differently in the project, and at this point it becomes crucial to transform critique into suggestions for action like, for example, the request by NU and CG for a special working session during the next plenary meeting.

From laisser faire to structuring the collaborative process: NH noted shifting from "going with the flow" to taking action in the coordination of the WP3, including the coordination and editing of the questionnaires and self-reflective exercises.

From do it on the go / spot to planned action: There is a range of answers that fit into this transition, e.g., UdK's observation and subsequent CG requests for collaborative action in small groups on specialized topics.

From pushing what I know well to observing what is needed: On the one hand, the "consent form" story fits somewhere in between these categories of action, as it is a push from OU's disciplinary experience and at the same time it is an observation of an action required while doing research on the pilot location. On the other hand, there is the example of NH's strong view of "what the project is about" shifting into a more distributed perspective on "what it could be about".

From decontextualized 'requirements' for design to finding out about community needs and providing technical explanations: Almost all answers note the importance of interactive work on the ground, based on participatory practices that unfold over longer periods of time, allowing the interested individuals and local groups to engage in the initial phases of design, in 'offering' of technology.

In understanding the sequence of actions, it is critical to note that there is dialectical take and a more linear approach, among the partners' reflections on interdisciplinarity and the relationship between research and action. At the same time, there is one's perspective of the others inside the consortium as well as a view of the project team projected to the public at various moments in the process (i.e., to the INURA community, CAPS community, local communities of the pilots). Finally, there are different roles and degrees of engagement in the project and in the pilot studies, which in turn have their cultural specificities and political contexts that influence MAZI partners' action.

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3.1   Constructing of a shared vocabulary

One of the important tasks in the MAZI interdisciplinary collaboration is to build common understanding(s) of some of the critical terms that concern our collective work. Thus this part reports on the ongoing construction of a shared vocabulary with respect to the design of hybrid space. The content is structured in three parts. The first section refers to the technical term FLOSS and its components free, libre, and open source software. The second section aggregates the answers of some of MAZI partners regarding four concepts that we labeled 'community aspirations' as a generic domain, and they are conviviality; knowledge sharing; social cohesion and sustainable living. These concepts structured the MAZI workshop with local residents in Deptford on June 20, 2017, so the partners could reflect on their meaning also based on their interactions and related discussions during the workshop.

3.3.1   FLOSS means free, libre, open source software

Open / openness

From the aggregated answers, the MAZI shared understanding of the meaning of open / openness in FLOSS is about transparency and about "visibility of the underlying computer code", of the "way things are implemented through software and the corresponding logic, which is more about proper documentation than accessibility to code". Moreover, the code "is available for study, copy and improvement," "within a licensing approach that encourages further exploration" as it is "free from commercial or legal restriction." In practice, there are several levels of openness depending on these and other factors, and in the case of the MAZI developers, one opinion states that it is "important to enable successful strategies to be replicated easily but I suspect that for many potential eventual users it is of less significance and consequence at a technical level, as they are unlikely to want to modify fundamental configurations or change code and replicate their output," which leaves room for further discussions in our plenary sessions.

Free

Free in the case of software refers to free of charge. However, there are various mentions on this condition that refer to the cost of production, and to responsibility, as "there is no freedom without responsibility"; some notes on the meaning of freedom as liberty are transferred to the next section on Libre. Nevertheless, one critical answer states, "It should be more about "cost-based" and "fairly shared". Ideally the cost of producing software should not be absorbed by motivated individuals that often burn out, but through collectives, cooperatives, and other entities that should ensure that both those that contribute are rewarded and that the final product is accessible to all."

Libre

Libre refers to the "free as in freedom", and a sense of rights to be understood and protected, "free from", as in free from control or restriction, having liberty, without limitations, without oppression etc. Libre software makes possible the concept of scaling through replication (and appropriation) instead of growth and it is a fundamental requirement for sovereignty and sustainability. With the following critical notes:

- Libre is the most important from these three terms FLOSS, which actually includes, requires, the other two.
- In the context of MAZI, debates about having the freedom to do something (e.g. share what has been made or configured), and freedom from something (e.g. monitoring and selling on of personal data) are important.
- This is a term that I am not accustomed to using commonly. I recognize its importance within the technical/philosophical debate around software (as a way of distinguishing between free-cost and freedom-to-act) and I have to look it up to remind myself of its meaning. I don't think it is in common parlance and we should reflect on the audiences we wish to engage with and our purposes. It may or may not be necessary to be careful in distinguishing the two terms (free, and libre).
- A confusion of these two states [free and libre] restrains our reach for yet greater freedoms.

Notes on the term FLOSS

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The question asked in the questionnaire was formulated as **What does it mean for you and why is it important or not?** Thus the answers included also generic notes to the topic that we include below in the raw form, as the partners have written them.

(1) These definitions are already very well defined and well documented within the various open software movements. They are important ideas for both philosophical and practical reasons. From a philosophical perspective they can potentially democratize access to information technology, challenge corporations and their business models. From a practical perspective, they can potentially make a wider range of products and services available to more people by providing an alternative model to software development. The development process is open to more people to access in order to produce new products, by building on what other people have done and made available. It enables access to services at low financial cost, and allows people to learn by doing. There is an issue of skills and knowledge, however, as most people do not have the skills or the time to fully develop software for their own benefit without training or payment.

(2) I think these are a set of terms with a distinct heritage (from technical developers and technology philosophers) and more familiar to IT developers than to the intended audience of the MAZI toolkit. These are terms which might be challenging to raise with some of the participating audience, at least at the first point of engagement. There is a tension here between wanting to reach out to a wider audience and to educate the participants in political/philosophical issues around technology. Within Creeknet, the groups we have been engaging appear to be seeking pragmatic solutions to personal and local issues and we are limited in the time we can spend discussing such terminology: so in practical terms, these terms are little debated in our meetings with participating groups. Perhaps we should emphasise this more as part of our approach. However, it would be reasonable to argue that we engage with participating individuals and groups with preferred ways of seeing the world that we implicitly bring as a bias to the guidance we offer and direction we encourage conversations. We therefore are coming as a pilot team that has reflected in varying degrees as to the validity of these philosophical positions.

(3) Software is now part of the main infrastructure supporting human life on the globe. For communities to be able to become sustainable and resilient, it is crucial to have the possibility to build their own IT infrastructure, and FLOSS allows this. So it is very important.

(4) Certainly it is very important as counterweight to the (enormous) concentration of power and resources of private companies. (I think it is still not so much in my consciousness even though I like the concept).

(5) [In general, openness is] an ethical approach taken when engaging with participants and collaborating researchers in a research project; being transparent about goals and motivations. Keeping participants informed of processes, actions, outputs and dissemination, and involving participants in decision-making processes when appropriate. It is very important that we consider this approach.

3.2   Understandings of community aspirations

In the workshop with the Deptford residents the discussions revolved around four community aspirations namely conviviality, social cohesion, knowledge sharing, sustainable living. The following sections present the MAZI partners various understandings of these complex notions.

3.2.1   Conviviality

As main conditional elements in the answers regarding the concept of conviviality occurred, a) **a location** specific condition, "to live in geographic proximity (neighbourhood, shared house/flat)," b) **a set of shared values** such as trust, respect, reliability, tolerance, care about others, which have to "be refreshed regularly," and c) **a temporal element** that determines opportunities "to refresh and build relationships" and to manifest "active communities where skills and knowledge are shared in informal, non-institutionalised ways, where problems are addressed and solved with multiple viewpoints in mind, with an open process, and with shared responsibility for the outcome". It was noted, however, that "openness and agreement are not necessarily required for conviviality, rather it is about the manner in which transactions and discourse are conducted, in an atmosphere of positivity." These conditions make possible to "supporting an atmosphere of pleasant social interactions in day-to-day life", "being naturally together", fulfilling "the desire to live well in addition to merely surviving."

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As the concept was first open for discussion in the workshop with Deptford's residents, it is exemplified through that particular case. One observation comes from the MAZI pilot team in Creeknet that acknowledge, "to have a convivial relationship with community participants we must allow for time for relationships to develop and to be seen to nurture and respect both these and existing relationships and sensitivities. There has been caution about engaging with us as outsiders who are clear about only being engaged for a limited period of time in the community with our project." Another observation is more generic and comes from a partner who was engaged with the locals only during the pilot workshop. "Inspired by Illich's treatment of the subject I would add this the elements of "constraints" and "self-organization". In the Deptford workshop, this idea somehow manifested through a tendency toward the immersion in human interactions, discussing with the interesting people that we met in the workshop at a personal level, beyond the structure of the gathering. This "escape" from norms in moments of genuine human contact is perhaps a key element of conviviality."

3.2.2 Social cohesion

With respect to social cohesion, two essential aspects stand out in the answers. On the one hand, it is a **mutable quality**, fluid over time, and thus **a relative concept**. On the other hand, it gives a particular meaning to the internal characteristics of a group, as it may be "a desirable end", "a means to inclusive development", yet it is **in permanent interaction with the external influence**s, as "external threats can strengthen social cohesion of a community but also place social bonds under stress as individuals deal with external challenges independently."

The dynamic nature of this concept may emerge from the fact that, "in any situation or grouping of people there will be tensions due to different ambitions and goals and this must be recognized: there is no such thing as a single community or single set of values which all adhere to". Moreover, in the presence of difference and diversity, it sounds rather like a "compromise" and may be imagined "as the 'acceptance' of difference rather than its elimination through 'integration'", and ultimately is the "aim to have glue in society which does not allow people drop off a community or society."

Regarding our work in MAZI, "As has been noted by the EU project reviewers, a balance needs to be struck between both strengthening internal community bonds but also supporting 'bridging' between individuals and communities to help reach better shared understandings and achievement of common goals in the wider area (reflection might be made here on the concepts of bridging and bonding social capital)." As if considering the contextual dynamics, "In rapidly changing neighborhoods and communities it is a great challenge to establish platforms where this kind of alignment [of people's views, habits, opinions and actions within a community] can take place: traditionally cafes, communal parks, the town square; nowadays meetup, facebook, etc. How to forge a bridge between groups who live in separate communication silos although they share a physical space in a quartier, village, city, remains to be seen." For that one 'solution' in the project is to play the roles of facilitators and catalysts, "to ensure free flowing information", to "visit other local projects and support their development" as "to reach better understandings all round".

3.2.3 Knowledge sharing

It has been noted that knowledge sharing is "an expression of [a] **democratic attitude**," "**one of the main elements of social cohesion**," "**one of the main characteristic activities of conviviality** – in a broad sense, including not only teaching, but also gossiping, telling tales, helping out, giving a hand," as knowledge may be considered also "the **collection of life experiences** which can be shared in the sense of 'exposure'. Exposing ourselves, our thoughts, desires, concerns, to each other is a form of knowledge sharing process that can be instrumental for conviviality and social cohesion. But also for interdisciplinary work."

One aim of knowledge sharing is perceived as "to **empower individuals**, support their personal development and support relationships between individuals and groups." Another one is noted to be "a concern for **sustainability of human practices**", as we may understand "collective awareness as being ingrained in the process of sustaining life".

To do this there are many mechanisms, "from formal instruction, demonstration and discourse to informal sharing of tacit knowledge through participation in practical activities", through face to face and informal interactions to digital tools like smartphones. In MAZI, knowledge sharing has been through "the socialisation of issues and ideas," "the sustaining of attention across a wide range of activities and interests which are then regularly written up, published and promoted publicly", remaining "accessible to public scrutiny [that] helps with the trust building". In the particular case of the London pilot, "a focus has been placed on offering the opportunity

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to share stories and perspectives, both encouraging individuals and groups to have a voice ('making the invisible visible), and for MAZI team to share its intentions and keep people informed of activities."

Special notes are recorded, as "there is a limit on what people can commit to due to other pressures on the time and energy", and that "it is delicate process to understand 'community aspirations' around knowledge sharing. In several cases the desire to share knowledge has been indicated but not always occurred in ways visible to the MAZI pilot team. It may be that knowledge sharing is occurring through channels unseen by us, that there is resistance to using MAZI promoted avenues, or a range of other social or technical barriers to achieving this goal. As with all community based collaborations, sometimes time and evidence of commitment is required before trust can be developed to the point at which explorations might be made (knowledge shared through a channel visible to us)."

3.2.4   *Sustainable living*

There is a general urban context in which sustainable living can be discussed, as "Nothing about our day to day use of energy, resources and space could be said to be sustainable and at this rate of unsustainable activity it's easy to imagine how a slip into disarray, repression and lawlessness could occur." Although in the context of the MAZI project, "this does not necessarily include ecological aspects", […] "it is primarily about sustaining a quality of social life and limiting destructive influences," "strongly related to the respect of constraints and also locality," "using energy and resources in a very modest and effective way, mainly through an environment friendly behaviour […including] aspects of social justice," "using local, renewable resources to cover one's needs" etc. Moreover, "supporting sustainable lifestyles requires an awareness and examination of potential impacts of actions and interventions."

During the preparation of the Creeknet pilot, there was a previous discussion in the MAZI consortium on the differences between "sustainable living" and "sustainable lifestyle," advancing the interpretation of "'sustainable lifestyle' as placing a focus on the individual and their interaction with others and their environment, whereas 'sustainable living' is more about placing a focus on the collective ecology of people and their collective impact on their local environment(s)." Moreover, 'living' "might indicate external influences, whereas as 'lifestyle' to me suggests more a set of choices that an individual makes over those factors that they can influence."

Thus in Deptford "we encourage social connectivity between our pilots and an increased awareness of the manmade and natural environment," and "have provided Creekside Discovery Centre (CDC) with the technology to gather longitudinal environmental and special index data from their low-tide walks and from a one wire sensor positioned in the creek, hanging off a raspberry pi. These initiatives are helping CDC track changes happening in the creek and creating opportunities for sharing this data with local secondary schools that attend their low-tide walks, e.g. to support students undertaking an extended project qualification; and with local artists to create artistic impressions of observed changes that could be shared with local residence etc." In retrospect, "we haven't explicitly asked people to reflect on their lifestyles, or how 'sustainable' they are. By what measures might we measure how sustainable a lifestyle is? In Creeknet we have asked people to reflect on the challenges they experience in their lives, what challenges their continuing current existence. For the Deptford communities we have been engaging with, my impression is that the rapid development of the urban environment is threatening change without the opportunity to influence the direction or speed in which this occurs."

3.3   Varied proposals for a shared vocabulary

In the survey the members of the consortium were asked to propose concepts and terms to be defined collectively and then included in the MAZI glossary. Note that in the Appendix III, the Table 2 documents the definitions of some terms proposed by the team at the Napier University. In this section all the proposed terms are listed in alphabetical order. Later on the consortium may discuss them according to a few infrastructural categories such as a) hardware (e.g., the suggestions starting with the letter 'R' below); b) software like HCI, functionality or 'captive portal'; c) information content (e.g., proposed terms starting with the letter 'D'); d) community like in 'community needs' or 'usability'; and e) high degree of generality such as 'toolkit', 'design' or 'hybrid space'.

MAZI glossary:

A: Analogue MAZI zone

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C: Captive Portal; Command Line; Community Needs; Contact; Customization

D: Data; Data ownership; Design; Digital identity; Digital sovereignty

F: Facilitation; Filtering; Functionality

H: Hybrid identity; Hybrid space; Human Computer Interaction (HCI)

I: Intranet; Interaction Design; Interface Design

M: Moderation

N: Networks

O: Offline; Offline / independent networking

P: Power Bank; Pre-tech modelling (pretotyping); Privacy; Processor

R: Raspberry Pi; Reboot/Booting; Requirements; Router

S: SD Card "Etching"; siga siga (slowly slowly); Splash Page; SSH

T: Toolkit

U: Usability

W: Web server; WIFI-Antenna (doesn't have to look like an antenna, but can be on-board)

In the current deliverable and in previous ones we have defined collectively the following concepts:

C: Community engagement practices (D3.2); Conviviality (D3.12)

D: DIY networking (D3.2; D3.11)

F: FLOSS; Free (D3.12)

K: Knowledge sharing (D3.12)

L: Libre (D3.12)

O: Open/ openness (D3.12)

P: Place; Participation; Process; Personal point of view / perspective in an interdisciplinary discussion; Power relations in participatory processes / interdisciplinary projects (D3.11)

S: Social cohesion; Sustainable living (D3.12)

5. Future steps

Similarly to the second MAZI Self reflection exercise (D3.11), the third exercise documented in this report the cross fertilization events, and as a result of it MAZI keeps shaping a shared vocabulary, which is open now to suggestions from the partners under the name: the MAZI glossary. For the next exercise is left the question regarding **the role of DIY networking** played in these domains, for instance, in advancing or hindering the community aspirations discussed in Section 4.

In comparison with the previous exercise, besides the temporal gap of one year passing between the two reflections, another difference is that, instead of asking the consortium to reflect on possible scenarios for the MAZI toolkit, through the third exercise **scenarios of the pilot** are documented, in which the partners specify the use of technology in the particular pilot situation, but so far are not recorded the **reflections on the process of convergence** to the presented outcome. That will be one of the tasks of the coming surveys.

The next reflections will be meant to continue to stimulate self-awareness, and at the same time to show some incipient signs of collective awareness. Therefore, in the next steps the MAZI partners will be invited, when applicable, **to record negotiations for the commonly agreed outcome toward co-designing the MAZI toolkit, and to reflect on these transformations**. Possibly the structure presented in Section 3 may provide an initial model for these recordings. Analyses will be performed also on the partners' roles played in communicative and collaborative practices in the MAZI project, differentiated according to the **common spaces** and the **tools for communication and collective action** used to facilitate and engage the actors. Eventually the self reflections will explore also the partners' understanding of leadership during the next MAZI team interactions. If the relatively recent view of **leadership as partnership** is suitable for the current project activities, it may occur in the relational space of interdisciplinary collaboration toward co-designing the MAZI toolkit.

Communication around the **MAZI toolkit** will be significantly intensified, as by now all the pilots have comparable experiences, and also a variety of 'forums for negotiation' have been defined (refer to D3.3 on boundary object). These activities will seed directly into the guidelines (actually one of these forums is the raw guidelines themselves), and it is very likely to create a dynamic environment, in combination with high exposure of the project and building some expectations around the toolkit. In the next meeting of the consortium, we will exercise to describe the toolkit by making use of the current MAZI glossary, as such shaping a collection of variations on its potential design.

Finally, out of the content and 'findings' of the survey on interdisciplinary collaborations, through the self-reflection exercise #3 (documented in the MAZI deliverables D3.3 and D3.12), **the agenda for an extra plenary session** during the next consortium meeting in mid February 2018 in Brussels is in preparation. It includes the issues mentioned above as well as future steps in facilitating the **acknowledgement of voices from below** by institutions at various levels, with references to the history of such processes in the location of every pilot, and the possibilities to sustain the project impact in the pilot location beyond the end of MAZI.

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MAZI Deliverables cited:

D3.2: DIY networking as a boundary object in interdisciplinary research (V1)

D3.3: DIY networking as a boundary object in interdisciplinary research (V2)

D3.5: An interdisciplinary framework for comparisons and cross-fertilisation strategies on MAZI pilots (V1)

D3.6: An interdisciplinary framework for comparisons and cross-fertilisation strategies on MAZI pilots (V2)

D3.11: MAZI as an experiment in interdisciplinarity: the outcome of a self-reflection exercise (V1)

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Concept formation within the MAZI interdisciplinary framework relies on shared understandings shaped during practice in local pilot projects, on experiences at MAZI cross-fertilization events and on self-reflective exercises that document the understandings built from personal knowledge and experience, and exchanges within the project.

Part 1. Constructing a shared vocabulary

1.1 From your knowledge and experience, including the workshop with Deptford residents, please document your understanding of the following community aspirations:

- conviviality
- social cohesion
- knowledge sharing
- sustainable living

1.2 Please list and define some notions that you consider necessary to be included in the MAZI glossary:

1.3 FLOSS means free, libre, open source software. What means for you and why is it important or not?

- open / openness
- free
- libre

Part 2. Recording the pilot scenario

2.1 Please describe in one paragraph the MAZI pilot in which you are engaged.

Note that the purpose of this exercise is to compare each pilot's evolution over time, and not to 'evaluate' one MAZI pilot in comparison with the other three.

2.2 Is being "local'' important for the digital networking technology chosen for the pilot?

2.3 Please mention what elements of the toolkit are suitable for your pilot, and what else would you like to include. How do you consider the tension of "pushing versus pulling" the use of the MAZI toolkit?

2.4 Please describe different options of the use of technology in your pilot using as the main language the current elements available in the toolkit (and guidelines). Highlight concepts and/or functionality that you need and it is currently missing.

Part 3. Documenting the cross-fertilization events

Please reflect on the interactions in past MAZI cross-fertilization events and identify important moments and lessons learned regarding:

a) Your understanding of other partners
b) Your role in the project
c) The relationship between research and action
d) The design of your own pilot
e) Ideas for the MAZI toolkit in general

In particular regarding the recent cross-fertilization event in Deptford, June 2017 (and the same for selected previous events):

1. What was the highlight (or highlights), interesting moments, of the London XF event?

      1a. During your interactions with the locals?

      1b. During your interactions with MAZI partners?

2. What could be done differently to improve the next pilot XF event?

References

MAZI docs online at http://www.mazizone.eu/about/deliverables/

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Section 4.2 DIY networking as a boundary object, p.25 in D3.2: DIY networking as a boundary object in interdisciplinary research (v1)

Section 2. Key concepts and individual perspectives, p.8 in D3.6: An interdisciplinary framework for comparisons and cross-fertilisation strategies on MAZI pilots (v2)

Section 4.1 MAZI Questionnaire Self reflection Exercise #2, p.17 in D3.11: MAZI as an experiment in interdisciplinarity: the outcome of a self-reflection exercise (v1)

James' blog: http://wrd.spc.org/

unMonastery: http://unmonastery.org/bios/

MAZI Toolkit Guidelines wiki: https://github.com/mazi-project/guides/wiki

Appendix II Documenting the MAZI cross-fertilization events

Table 1. One partner's understanding the other MAZI partners

One partner's understanding the other MAZI partners
The cross-fertilization events are opportunities of getting to know the other project partners. I do sometime have the feeling thought, that we all act as if we had the same goals within the project but get the feeling we have very different prioritizations within the project, motivations behind the project and definitions of the project goals. Although we are working and getting closer towards a common vocabulary, the cross-fertilization events don't explicitly work with doing so, for instance. When I look at the pilot team here in Berlin, it took some effort and much time to get to the level of coherence we have now, so it is not strange that this has not yet happened throughout the consortium. For me it is a learning experience in understanding the structures and cultures of the different partners.
The London event gave me a much better idea about the London team, its difference to our situation in Berlin and also the differences between SPC/the wider Deptford context and OU.
Without the formal cross fertilization events at which to meet and exchange with our partners we would not have been able to maintain even the basic image of how others are developing an understanding of the toolkit or advancing it s design or development. Meeting up is essential to build on a consensus about how we express our collective progress and improve our voice on the subject of research. The general lack of active public reporting and conversation about the issues and interactions at a local level at each pilot is holding back some progress and restricting awareness of each others progress or difficulties.
We have limited opportunities to interact with other partners so the cross fertilization events are a crucial opportunity to better understand other partners' activities, share knowledge, and build consensus. For the Deptford XF event we purposely asked partners to present what they were doing to the local audience as well as other MAZI partners as a conscious mechanism to both add richness to the proceedings (giving local people a better understanding of the bigger picture in which Creeknet operated) but also to hear from other partners what they were doing.
The MAZI partners cover multitude of roles in the project, each of these roles coming to balance a situation, a necessity, another role. I expect at the end of this project the canvas of roles will be nicely weaved :)
The pilot Prinzessinnengärten Berlin is upmost interesting in how they support and bring forward networking of different initiatives and communities in a fast-changing neighbourhood. The pilot Deptford Creek is a good example how to bring people in a large and fast-changing neighbourhood together around technology and urban development. Their attempts to involve newcomers in the neighbourhood are very promising and useful. The pilot UnMonastery is active in a variety of communities with different social or socioeconomic structures and a real laboratory in implementing Mazizones for a variety of applications.
During the review, the moment that one reviewer challenged the usefulness of the toolkit … The role of James as social worker

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It was really interesting in London to have the chance to engage with the different participants in the Creeknet project. I particularly enjoyed conversations about long-term engagement and how to build and maintain a community around this diy network technology project. In a way, it contributed to the decision to not to leave a zone behind in Kokkinopilos, since we did not find anyone locally who was interested in learning it. It was also very inspiring to hear how well the MAZI zone worked for the Neighborhood Academy in Berlin.

It was very important to see the other partners' contexts and settings at first hand in Sarantaporo, Berlin, and Deptford. Meeting the other partners and having time to chat and get to know them was very useful to understand more about their motivations, approaches and backgrounds.

Table 2. Understanding one's personal role in the project

Understanding one's personal role in MAZI
I see our role in the project to reflect realities and contexts of community and community organizations (not meaning that we can fulfill this role in its entirety evidently). This community focus is combined with understanding the project in its whole and keeping up with all internal project requirements of course.
My role has been one of mentor and researcher and on the other hand antagonist and critic of the broader processes. Collaborative work cannot be expected to develop and improve without question and reflection even if that's an uncomfortable experience sometimes, so I welcome this opportunity despite it plaguing my Rsi!
The Deptford XF event had a forcing function of making us think carefully about what we are trying to achieve, and what our roles are. Personally it has made me aware of the balancing act required between the demands of community based action and academic goals: Peter Day of the University of Brighton has talked previously about the tension between a closed timescale 'project' approach and open-ended commitment of an 'initiative': we are having to report and work to a strict EU project funding model yet ensure we set up and leave long term benefits for local community participants. The XF event also shows the importance of bringing together all MAZI partners as regularly as we can, and outside of formal reporting-focussed project meetings.
After a year of going with the flow, and of mainly taking a critical side on the "strong feelings" with respect to what the project is about (based on the many years worked in the field and for conceptualizing the project's DoW), in parallel with working on the Zurich pilot, in the second year I took a more active role in the research on interdisciplinarity through the WP3 coordination and in the conception of corresponding deliverables.
Self-managed projects as pilot Kraftwerk1 can give an input of learning about sustainable structures and processes in communities that become a stable environment for hundreds of dwellers, shopkeepers and initiatives.
During the last cross-fertilization events, I felt that I was too engaged in the project, because of the many years that I am working on this topic.
The Kokkinopilos pilot was the designed to be deployed in a rural temporary community which brings together a small village and an urban group. (Since then, the Zagori lab (also by the unMonastery) also became such a testing ground.) Our role was to test whether introducing this technology enables these very different groups to engage and work together more efficiently, and whether introducing a diy networking technology can be a more sustainable way to bring remote areas into a more digital, more networked world.
Attending the events helped a little for this, but mostly this was addressed through reflections and discussions after the events, less so during the events.

Table 3. Reflections on the relationship between research and action

Reflections on the relationship between research and action
I see the role of the pilots and the community organizations as shifting from the start of the project. During the kick-off in Volos, I had the echoing feeling of "Guinea-Pig". This has shifted to where I think the efforts "on the ground" are very much steering what is happening in the rest of the consortium.
Visiting James and the people he works with underlines the possible synergies and tensions we also experience in Berlin or discussed at the INURA meeting and started to describe in past deliverables.
Only in action can we test our research and learn from the process.
The Deptford XF event had a forcing function of making us bring separate threads in Creeknet together, and moving forward some works-in-progress to fruition. The pressure of time and resources made us think about what we wanted to achieve theoretically, and how this would be played out in practice.
During the workshop in Deptford, we discussed some critical points on the role of the researcher, finding out that the various perspectives in the consortium range from an 'outsider' view that undertakes research, without being engaged in the pilot work, to a border attitude (that we described in more detail in the D3.11 regarding reflection in action and the role of stranger) of an anthropological approach to training members of the local community into the design of technology and to developing together techniques of bringing the topic into participatory practices.
The research in the Zurich-pilot is marked by a trial and error research process. The deployment of various forms of Mazizones (kunst.werk1, hybrid letterbox, inura conferences, wunderkammer). Research encompasses research on how to improve the use of Mazizones as action and the deployment of Mazizones within action. Alltogether, the approaches of the Mazi-Pilots towards research and action are similar and follow the design of the Mazi-Project.
Some sessions of the Volos summer school revealed some differences between the research and activist perspective … EU funding jargon … I felt more on the activist side. In Deptford, I felt the opposite, more of a privileged researcher visiting a troubled area.
Clearly research is an extremely important part of the deployment of this technology. Talking to Paul in London about pretotyping inspired the idea of the walk-in analogue Mazi-zone, which enabled us to explain our work to the village better. And we spent a year having conversations with the village to come up with the plans for projects.
The events helped to understand more about real-world action and activities, but the role of research within these processes was not addressed in a very direct or explicit way. Mostly there was a lot of implicit consideration of the relationships between research and action, and this left a lot of space for interpretation, and possibly misinterpretation and misunderstandings between partners about methodology, aims and analytical perspectives.

Table 4. The impact of the cross-fertilization on the design of each pilot

The impact of the cross-fertilization on the design of each pilot
Berlin: The cross-fertilization events are moments to zoom out of the day-to-day pilot perspective. It is a possibility to connect to other, sometimes larger issues or contexts – reflecting over the EU level CAPSI, connecting to different discourses (civil science in London or Next level internet Volos).
Berlin: Our own pilot design was rather advanced at the time of the London meeting and activities took a little dip afterwards., so implications were limited. Preparing for the Volos review meeting on the other hand helped consolidating ideas and further plans quite a bit, as we started to differentiate between operative and discursive dimensions of our activities. This allowed us to now draw the decision put the focus of the remaining year on the latter, in order to secure sustainability of our actions beyond the limits of the project's runtime.
London: Our pilot was more thrown together than designed.. some design was required later as we began working at a point when we had more information to go on about our pilot area of focus and interaction. Now I would be better positioned to design a process from scratch. On reflection we have taken on far too much diversity and difficulty for the project as a whole to benefit from or comprehend. This is a common mistake to have made and in my phasing enthusiasm for the area a difficult one to live with as expectations of the pilot partners expand into the space and opportunity they increasingly recognise. Thats the moment we are seeking, to be overrun with energy and enthusiasm from without!
London: By bringing to the fore our research and activities in a very public way, it helped us think about what our priorities are, and where the gaps are, what we need to do next. The XF event was also a great demand on our time and resources, so it also did have a destabilizing effect as energies became focused on making sure it was a successful event for the partners, the public, local MAZI participants, and the Advisory Board. We were exhausted by the process of setting up and running the XF event but now, with breathing space, we can think about how we should move our design forward. We did learn from other partners and this has influenced our thinking.
Zurich: During the project review in Volos we understood that the community needs addressed in the Zurich pilot do not seem that imminent, as they may be placed on the rung of representation and self-expression within the democratic canvas. Moreover, as the Kraftwerk1 cooperative is approaching a more mature phase of development, its lived space shall be expressed in the particular spirit of its residents; so the necessity of collecting community art in the context of the MAZI pilot.
Zurich: The cross-fertilisation consists mostly in a mutual exchange in checking whether the own pilot is on the right track.
Zurich: Pull rather than push
Greece (Kokkinopilos): Knowledge collection and sharing dominates the application of the technology, and both Creeknet and Neighborhood Academy were an inspiration.
Greece: The events provided a lot of ideas to reflect upon after the events. The unMonastery partners could address how these influenced their work in the pilot studies.

Table 5. Ideas for the MAZI toolkit in general

Ideas for the MAZI toolkit in general
The cross-fertilization event in London was a great way to get to know the tools of MAZI we have not worked with before, i.e. sensors and video.
For me, experiencing the vast diversity in pilot contexts suggests/underlines the necessity to understand the toolkit as an open platform that can and must host a wide variety of applications and functionalities. I suggest to focus on more development in this direction in the remaining year. A benchmark would be if users with limited experience could install third-party open source software on their own MAZI zone without too many complications. We could then even think of a label as in "Suited for your MAZI zone" or "MAZI-ready" :)
We should ensure that cross fertilization events are facilitated and documented through use of the MAZI toolkit (we should "eat our own dogfood", i.e. use the tools we are promoting). The toolkit should be more visible in such events, and visitors should be walking away with a copy each.
The cross-fertilization event in London was a great way to get to know the tools of MAZI we have not worked with before, i.e. sensors and video. In particular regarding the recent cross-fertilization event in Deptford, June 2017 (and the same for selected previous events): despite having ample time and resources at hand in preparation for the event we all felt overrun with anxiety about having our story straight, accommodating the needs of those attending (which we failed to make good use of) and communicating the depths and breadth of our work up until that point. It's a blur to be honest.. and a relief when it was over. We have little documentation available.. and little has been published about it by our esteemed partners perhaps they didn't take pics or enjoy it at all. It was an uncomfortable experience overall one I am happy to let slip away out of mind.
Dedicating time in the design process for 'attractive' voting-functionality, as a 'measure' of collective work
The bridge sensors
As I mentioned earlier, the idea for the pre-tech part of the toolkit was coined by a Creeknet team member, Paul Clayton. I am really interested in working on this further.
Seeing prototypes being used in context was useful, along with talking about ideas.