MAZI

ICT - Information and Communication Technologies

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D3.7 An interdisciplinary framework for comparisons and cross-fertilization strategies of MAZI pilots (version 3)

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Executive summary

The object of this deliverable is to present the final reflection on the framework developed and applied within MAZI that allows and supports the interdisciplinary development of four different MAZI pilot studies and the cross-pilot generation of insights and knowledge as well as the transfer of this knowledge into the design of the MAZI toolkit.

For this, this report will first reflect on the very idea of a framework as an evolving concept – as an ever-changing notion that continuously develops as the consortium is moving along – and summarize the components of the framework as developed and enacted throughout the past 28 months. We will then take a step back to synthesize reflections on the different positions and roles taken on by project members and on how the interdisciplinary nature of MAZI manifests itself within and across pilot studies – both in terms of challenges and strategies in dealing with them, as well as in reflections on how the project affects the disciplinary positions of its protagonists.

Concluding this deliverable, we will then discuss the framework depicted in the series of three reports as a negotiated outcome of the working process in MAZI and show how the threads woven here will be taken up and continued in future work.

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1. Introduction

This report represents the third and last reflection on the framework for “comparisons and cross-fertilization strategies of MAZI pilots”. While the first version, D3.5, delivered a layout of the framework by offering descriptions (together with 3.3 and others) of the models depicted to organize the project, and the second version (D3.6) provided valuable theoretical contributions to the topic, this final document (D3.7) will report and discuss on how the project work within MAZI unfolded during the concrete process as the ongoing generation of the framework. As such, it is not to be understood as a synthesis or “final version” of the framework, but as one of three parts that complements the framework as it is produced by acting together over time, by adding an analytical layer that elaborates on the experience of interdisciplinary work in the project.

For this, we will first refresh our perspectives on the concept of the interdisciplinary framework – by revisiting its purpose, by recounting the different elements that it is composed of, and by tracing how the concept of the framework evolved over the course of the last 30 months, by which this document is being set into relation to prior deliverables.

The main body of this deliverable (section 3) then elaborates on describing the interdisciplinarity of MAZI – how the challenges and tensions that have been reported on in earlier deliverables have been concretely encountered in the different pilots, which strategies and tactics have been derived to encounter them by partners, as well as reports on how these activities reflect on the roles and disciplinary guises partners experienced during the process.

We then conclude by discussing the framework as a »negotiated outcome of the working process in the MAZI project«, and project on how this work will tie into perspectives, analyses and reports to come.

2. The framework

Before we elaborate on how moving and working within the framework unfolded during the last 30 months, we will briefly refresh our view on what the framework consists of, what its purpose is, and how it evolved as a concept over time.

2.1 Purposes of the framework

As described in D3.5, the framework aims at » creating a mutual understanding of basic assumptions, world-views and methodologies between researchers from different disciplines, promoting mutual respect and a self-reflective attitude toward our own collaboration, being a highly diverse consortium in which each and every partner comes from a different background and brings a unique perspective«.

For this, the framework provided a means for pilots to continuously reflect on their own practice and themes to be compared across the different pilots. It provoked us to become aware of general as well as specific issues emerging at a very early stage, giving us the time required to share experiences generally across the consortium and towards a wider public (feeding into D3.2-4 and D3.8-10). For example, successful strategies of singular pilots have been able to be carried out across multiple/different contexts, helping pilots to avoid mistakes and face challenges.

Set up as a transdisciplinary project, the interdisciplinary framework has helped MAZI by guiding interactions between the partners (Figure 1).

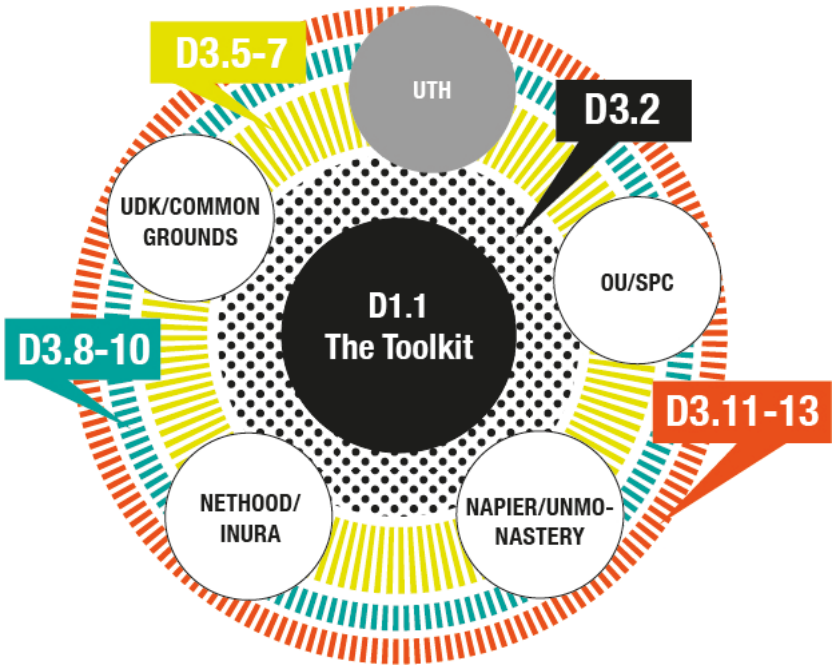

Figure 1, A graphic representation of the main building blocks of the interdisciplinary framework.

The MAZI toolkit positioned in the center of Figure 1 (and described in detail in D1.1.) acted as a boundary object between the different "social worlds" of the project, represented by the "couples" of each the pilot studies

together with the main developers of the toolkit. The framework developed a natural and bottom-up way for initiating conversations within and across pilots through the use of "everyday language" (e.g. initiated in the questionnaires). The integration process of finding a “common ground” between the different perspectives and the required translation to the toolkit's “language” (list of functionalities, customization options, templates, guidelines, etc.) was outlines in Deliverables 3.2-3.4. These different perspectives were compared and analyzed through the comparative framework developed in Deliverables 3.5-7, evaluated through the evaluation framework developed in Deliverables 8-10, while the whole process of differentiation, comparison, evaluation, integration was overseen and documented in a self-reflective mode in Deliverables 3.11-13.

The framework has acted as a vehicle for collectively generating the operational and technical knowledge and the respective ideas needed to successfully engage with the different communities in creating DIY networking frameworks that are based on and answering to the community‘s needs. It enables comparable knowledge of respective partner‘s visions and anticipation of their activities to be gathered, proving to be a useful valuable starting point for the planning of cross-fertilization events. Moreover, by capturing similarities and differences between the disciplinary perspectives of the academic partners it helps identify important tensions between research and action as they have manifested, deconstructing the pilot studies into their core elements. As such, and as noted in D3.5, »[…] the framework is seen as a constant work in progress that provides the necessary structure to overlook and coordinate the different pilot studies toward enabling comparison, cross-fertilization, and the extraction of useful knowledge beyond the activities of the project and beyond specific disciplines.«

In its current form, the framework promotes a natural and bottom-up way of interacting and a good representation of how knowledge has been integrated towards the development of the MAZI toolkit. Going forwards, we hope the framework will be useful for others wanting to facilitate interdisciplinary knowledge sharing and generation; helping them avoid the pitfalls of intimidating or alienating the non-academic partners and the communities connected to them.

2.2 Components of the framework

While the prior section on the purpose of the framework describes what it is for, the following section will briefly refresh the knowledge of the reader about what the framework actually consists of.

As depicted in figure 2, each of the pilots is conceptualized as consisting of multiple variables (such as contexts, and framings/objectives) that will evolve and change over time. The planned experimentation with these complexities is subject of the four different pilots, in each of which a rich set of knowledge will be generated. This knowledge will in the process be discussed and challenged and enriched with perspectives both out of the consortium (e.g. through the self-reflection exercises) as well as beyond the project boundaries (e.g. by disseminating the project in the various disciplinary discourses). This helps us to draw conclusions by comparing the evolvement of the pilots themselves as well as how they are perceived and performed by their respective teams over time. The sum of these reflections circulates back into the single pilots, thereby informing the next stage of the projects iterative process.

As further described in section 3.3: Strategies and Tactics, the formal or institutionalized components of the framework can only account for a fraction of the means and methods applied by partners in navigating the interdisciplinarity of MAZI. Nevertheless, they set the boundaries and define the spaces in which formal and informal, planned and spontaneous actions are conceived and performed, and thus have been subject to ongoing negotiation and development. Thus, as a whole, the framework is a series of events, processes and formats put in place to ensure the iterative development – of both our positions as well as the outcomes of the project, be this the relationships built in the pilot contexts or the MAZI toolkit as the anticipated core result of the project. It ensures that any result is taken up as a “perpetual beta”, by subjecting it to numerous feedback loops and from various, prismatic perspectives.

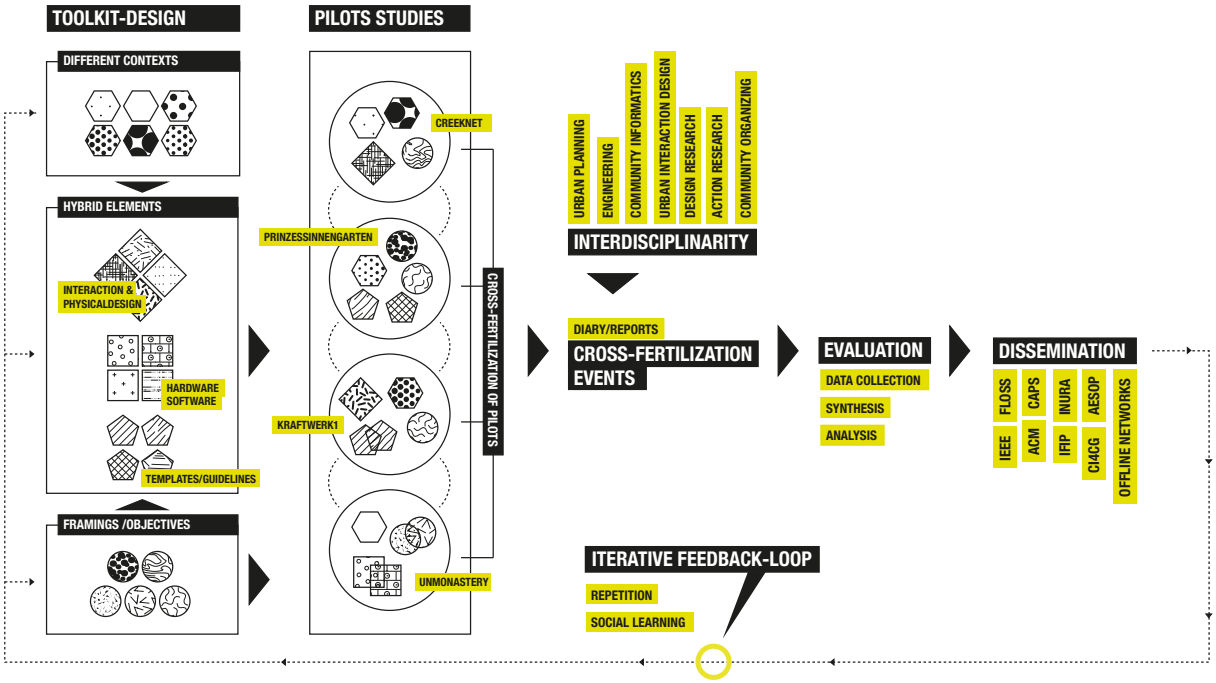

Figure 2: An overview of the iterative process of knowledge generation within MAZI, depicting some of the components of the framework, showing their interrelation.

While the components of the framework are being presented in more detail in deliverable D3.3 on the boundary object as well as the first in this series, D3.5., the following lists provide a (non-comprehensive) overview of the mechanisms put in place, both on the level of the project consortium, as well as within the different pilot studies:

2.2.1 Project consortium

- Cross-fertilization events
- Self-reflection exercises & evaluation
- Face-to-face meetings: consortium meetings & internal workshops
- Deliverables (comments, contributions) – especially in WP 2: Negotiation of shared identity & representation
- Emails and online interactions for the toolkit co-design
- Dissemination: exposure to different audiences: Shared identity & feedback from peers
- Review as a point of synchronization
- Temporality: Diagram of staggered pilots & cross-fertilization events

2.2.2 Across Pilot teams

- Work in pilots, applied research
    - Pilot structure in and of itself – inner-pilot negotiation of anticipated pilot projects, how did they evolve, how was a common vision crafted over time, spatial and temporal scale
    - Working together: e.g. Berlin workshop and/or interview archive as manifestation of Berlin-context (NAK) influenced activities of UnMonastery, the expression of 'locality' in Deptford

through artistic interpretations gave an inspiring hint for the Kunstwerk exhibition in Zurich etc.

- Initial framings and their revision during the process: from technical knowledge to community practices (revisit the ways of working in the communities
- Staggered organization of pilots (proved successful in terms of learning from each other and building on partner's activities)
- Evaluation (pilots in comparison)
- Participatory action research approach
- Data gathered through: pilot deliverables; blog posts; semi-structured interviews with partners; focus groups; whole-consortium workshops
- Analysis using 6P's (see D3.8); identifying contexts, mechanisms, outcomes;

2.3 The framework as an evolving concept

Concluding this series of deliverables on the framework of interdisciplinary work within MAZI, it seems right to start with a reflection on the dynamic nature of the framework in discussion, as there are different stages, aspects and modes that all comprise the frame depicted here – as something that is permanently made, negotiated and developed, in opposition to a static and "finished" methodology or project structure.

From the beginning of MAZI, an introduction to the interdisciplinary framework explaining its purpose and use is made in D3.5, which is the first iteration of this deliverable. The aim of the framework was formulated as to facilitate interdisciplinary comparisons of the pilots to enable drawing high-level conclusions in regard to and guided by the dimensions of comparison in alignment to the project objectives (as described in Section 1.2; and further in Section 2). This was reinforced in the second version of the deliverable (D3.6), and also some directions for future research were suggested, on how the interdisciplinary framework might be enriched (D3.6 Section 7). A detailed description of the MAZI elements for interdisciplinary work is included in the deliverable on the boundary object (D3.3 Part 1 and Part 2) and in the deliverable on self-reflection (D3.12 Part1 - Elements of a conceptual interdisciplinary framework). Moreover, describing a learning process, the framework aims at creating a mutual understanding of basic assumptions, world-views and methodologies between researchers from different disciplines, promoting mutual respect and a self-reflective attitude toward our own collaboration, being a highly diverse consortium in which each and every partner comes from a different background and brings a unique perspective (see D3.2).

Noting that the devised frameworks need to be flexible as the project itself, for the evolution of shared understandings (D3.5, D3.6), the surveys at the level of the consortium showed that there were some shifts in the disciplinary perspective during the project time frame, and there are testimonials recorded in various documents. For instance, there is an introductory formulation by the partners of the disciplines in the project (D3.2 Section 2), followed by a comparison between disciplinary perspectives that have been refined through a year of work in the project (D3.6 Section 4). A follow up has been surveyed at the pilot level through the objectives and measures considered by each team, and the answers are recorded in the deliverables on the pilots' evaluations (D3.8 Section 7. Appendix B and D3.9 Section 9. Appendix A).

Other relevant moments in the process of conceiving the framework for interdisciplinary work happened during self-reflection exercises (internal) and cross-disciplinary dissemination (external), when the partners have formulated concept definitions, project presentations, MAZI toolkit explanations, and the like.

Over time these reflections have been accounted for in deliverables, since the initial collective definition of DIY networking in the context of the MAZI toolkit as a boundary object (D3.2 Section 1.1 and Section 4.2) to its imagined and experienced role (D3.11 Section 3.6 & Appendix II), and during the MAZI pilot development in the local pilot teams. Pilot design evolved from speculative scenarios developed at the beginning in the process (D3.5 Section 3.6 First reports on pilots), during the pilot workshops and the related pilot deliverables, as well as later on at different stages through self-reflection exercises (recorded in D3.11 Appendix III - Reflections on the MAZI toolkit by pilots; D3.12 Section 2.2 - Scenarios of the MAZI pilots; and D3.12 Section 2.3 - Reflections on the MAZI

toolkit).

The self-reflective exercises brought about comparisons between anticipation and reality checks, which oriented the focus of interdisciplinary research to the tensions and conflicts that appeared and how they have been released through negotiations. In the next section these distinctions are updated according to the last meeting in Zurich in June 2018.

3. The Interdisciplinarity of MAZI

The following will provide a third and concluding iteration of the self-reflection exercises that have been undertaken in prior deliverables. We present these reflections and their synthesis as a central component of the interdisciplinary framework of MAZI, as they – complementary to the structures, processes and institutions put in place in order to facilitate our collaborations – provide readers and producers of this text alike with the possibility to understand not only the concrete challenges and difficulties that emerged from this collaborative work, but also the ways in which partners chose to navigate them in practice. Furthermore, this deliverable will reflect on the roles and guises partners had the opportunity/obligation to take on, as well as on the implications of this for their understanding of their respective, disciplinary identity in the context of the project. As such, this section is understood as the aggregation of our ongoing discussions on this matter throughout all components of the framework – be it deliverables, cross-fertilization events or informal discussion – and as the attempt to draw the discussions that unfolded on the various pilot levels onto the plain of the consortium. This, we assume, will both lead to a better understanding of how the process unfolded and thus to a better-informed position for future projects for partners within MAZI, as it might provide guidance and advice for others wishing to carry out similar actions.

For presenting this rich material, we will proceed in three separate subchapters: We will start with **Tensions & conflicts**, in which we will proceed from the 8 conflicts identified in earlier work (e.g. in D3.6, from page 29) and take a close look on how the actors within the project encountered and perceived them in their actual project work. In **Strategies & Tactics**, we will elaborate on the ways and means consortium members identified and chose to tackle the conflicts and tensions described before. Finally, in **Roles, Guises & Action Fields**, we speak to the disciplinary implications of the discussion.

In each of these subchapters, we provide an introductory framing, before we discuss information that is derived both by individual answers to a self-reflection exercise from within the different pilots, as well from discussions that have been conducted in smaller groups during an internal workshop in the process of a project meeting in Zurich in May 2018, where we developed our views on these three segments from a cross-pilot perspective. Following this, a synthesizing summary will draw together these three segments, aiming at converging the diverse views on the respective subject matters and the implications for future work.

3.1 Tensions & conflicts

In light of the described differences, roles and fields of action brought into the consortium and performed by the various partners, an early focus of this work package was and is on the identification and the understanding of tensions and conflicts that arise out of the projects‘ inherent diversity. In deliverable D3.3 we proposed a table delivering and overview over some of these dichotomies. For this final version of the interdisciplinarity framework, we updated this overview as a synthesized analysis, which we again and finally flesh out by complementing it with the subjective view of project partners. These testimonials report on how concretely these phenomena manifest within and beyond their pilot study and set the ground for looking at strategies and tactics applied by partners in encountering the bespoken issues.

Hence, the following will display a synthesized version of what partners reported (questionnaires attached in appendix II) in regard to how tensions and conflicts have been concretely encountered in their respective practice. Following this, we will provide a synthesis of strategies and tactics partners derived and applied in light of these challenges, before we will conclude this subchapter by delivering a synthesis of the implications partners perceived with regards to their own, disciplinary stances.

Innovation vs. Pragmatism	MAZI partners need to oscillate between identifying and supplying what community partners need to reach their objectives (which might be Google Docs or no tech at all), while still being open to experimenting with DIY technologies and innovation goals.

Partners report different perspectives on the project as an ongoing negotiation between the promotion and development focus on MAZI, and the open question of which technology is best suited for the respective purpose. Sometimes a technology other than MAZI seems easier or more practical to apply. This hold true both for the researchers (e.g. when realizing an installation for public display) as well as in light of the collaborations with local activist communities, for whom the effort to gain competency in using MAZI technology, and to change work processes for them to accommodate the logics of MAZI, at times stands in contrast to the actual benefits that they expect from implementing MAZI in their work (technology is hardly ever at the focus of the community partners within the consortium).

This is particularly relevant in pilots that work with communities that do not have an actual need to some of the core characteristics of MAZI, e.g. the exclusive access in operating a MAZI Zone in a particular community (for example, Kraftwerk1 residents already have an intranet that fulfills their requirements for internal communication but it is desired to be improved), or the promise to deliver network access, if data plans are not existent or too expensive (e.g. virtually everybody in Zurich has access to 4G-cellphone connectivity).

This problem did not only present itself in the communities we aimed at deploying MAZI in, but also across partners, as collaborations were characterized by constant negotiations about whether to use open-source technologies (as in "eating our own dog food") or to retreat to more corporate solutions (such as Google Docs, within which these lines are written), which are at times more comfortable, or adhere to standards within the respective institutions (such as Universities). With regards to how the actual technology developed within the project is being shaped, partners furthermore express different senses of agency in terms of ability to feel involved in decision making processes, e.g. in light of the question of what types of applications are being offered as pre-installed in the publicly available toolkit image.

Added work vs. Added value	Connected to the above: It is critical to amplify existing processes instead of creating new ones in the pilots' locations. A big MAZI challenge lies in learning together how to anticipate any developments as added values, and not as additional fields for work on top of already strenuous and often precarious working situations.

Many of the pilots involved the collaboration with groups that have limited resources and manpower to apply to the objectives towards which they are working. In one way or another all pilots encountered the perception of MAZI adding something for them to think about, raising their awareness, and to explain to others or get acquainted with, and therefore with the challenge of 'ensuring that the contribution we were requesting from community partner and community groups would add value rather than be a useless burden on top of their already stretched capacity'. This seemed to be particularly the case in the startup phases of the pilots, as discourses have not been interconnected yet, and narratives, arguments and materials that make it easier to think and to talk about MAZI have not yet been developed.

Paid Research vs. Voluntary work	Dissemination happens in all conceivable circles, and with it the generation and accumulation of "capital" of any kind; what seems profoundly different is the "currency", with which the different capitals are denoted (e.g. publications, community credibility, etc).

Although most pilot partners express that the gap between researchers and local communities in terms of an alignment of goals and trajectories was generally possible to bridge, many report on difficulties that arise from entering local, often precarious community structures as an EU-funded research project. These challenges presented themselves in different forms: a) the general question of currency and capital, as in what does MAZI take from local actors, and what does it have to offer? b) An overarching scepticism towards MAZI as a large, well-funded research conglomerate, that is – from the perspective of local community actors – very likely to just disappear, e.g. due to the ending of the funding; and c) a general "research fatigue" that is grounded in the fact

that many of the communities we seek to collaborate with have been subject to prior research, and thus have seen many "observing" intruders come and go.

Facilitation vs. Authorship	MAZI is a collective project, however, there are different roles and responsibilities within MAZI. Partners oscillate between taking authorship and facilitating processes. Ownership of process and outcomes is continuously being negotiated.

Regarding this lens of analysis, there are different levels of perceived ownership that partners express with regards to the project's process. While some found ways of negotiating this tension through time and to find productive position within it (e.g. an oscillating relationship of lead/follow within the pilot teams), others perceive their position as less actionable, mostly due to geographical divisions. Furthermore, for some, authorship and the ability to facilitate processes sovereignly has been limited by a generally perceived "work overload", because of which a) partners had to focus on work they are contractually obliged to do; and b) avoid tasks that might be necessary to be taken on in order to ensure a productive facilitation but appears to be too much to handle in light of the resources available to partners.

Formality vs. Informality	In MAZI, different approaches to process and outcomes are coming together. This manifests in ongoing negotiations, for example about what type of information is really needed for the research and whether some compromises can be done, about different ideas on what a collaborative approach, alliance and/or partnership might look like, etc.

Formality and informality are categories that can be looked at very differently, depending on the angle. For example, the formality of processes within a community such as Kraftwerk1 slowed down the deployment and development process from a MAZI perspective significantly, resulting in the need to in-formalize the planned process. The same accounts for the Berlin pilot, within which the external factors in the pilot setting, that were far beyond the control of the pilot team (e.g. change in city government, etc.) presented the team with the necessity to leave the planned path and trade aspects of a formality/"scientific rigidity" for the ability to create meaningful processes within the empirical realities they operate in. This, in turn, resulted in »different approaches to collaboration and decision making, and this has led to tensions as different approaches have not always been universally approved«. This accounts both for the disciplinary presets of the individual partners (e.g. methods), as well as – and here more importantly – the ways in which partners encountered and handled unplanned (and unplannable) changes to their pilots and thus the need to derive from a "clean" research process in order to strengthen the processes on the ground.

Project-logic vs. Engagement in local processes	Between the two goals and objectives (research and action), there is need for an integrated line of collective action, 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 the project.

As already touched upon earlier, several partners encountered a deeply rooted skepticism towards researchers entering local communities, as the general perception anticipates them to appear, make use of what they find, and then leave after the research is done – leaving the community behind with changes and work to cope with. Consequently, partners were presented with the challenge to, on the one hand, derive knowledge actionable for the project's objectives, while at the same time to create value and transparency for partners in the pilots. Here, »the local environment and circumstances of the publics can lead us in directions beyond the project-logic and

funding resources« as well as to »realizing effort and resources may need to be committed to help support the resolution of a local challenge that might not be justified in project-logic terms«. On a more macro-level, this same logic showed itself in the form of a discrepancy between the logic of a technology development-project, which depends on the iterative testing of developed increments (that are in all likelihood not fully functional and/or user-friendly) and the »need to present a technology that can satisfy needs surfaced« within the respective contexts of the local communities.

Disciplinary Openness vs. Comfort of territoriality	Being comprised from many different disciplinary backgrounds, collaboration within MAZI at times demands different approaches to issues than "prescribed" by one's own disciplinary or social canon.

The work in MAZI requires partners to transgress disciplinary boundaries in manifold ways. Hereby, partners report that the difficulty lies not so much in the alignment of »underlying philosophical differences« or differing trajectories and interpretations of the project's objectives. Rather than that, challenging issues were the development of a shared vocabulary (the MAZI glossary, but also in terms of one's own professional position), the synchronization of different modes and tempi of working, that come along with differing, methodological predispositions, and the general setup of the project (that is comprised of »differences in where the approaches sit on a continuum from "high-level" theory to "low-level" practical work) requires the participating actors to »shift from inter-disciplinarily to trans-disciplinarily and trans-locality«.

Unknown roles: curiosity vs. Uncertainty	Resulting from the former, MAZI partners continuously have to take on different roles, as the dynamic pilot processes demand a level of comfort with uncertainty and change.

It is clear that the level of uncertainty presented partners with the need to remain flexible, from which »some overheads as well as opportunities to take a different perspective« emerged, and that not all opportunities to break out of one's own framework were »affordable«, even if they appeared to be potentially promising and valuable. While this constant oscillation between different roles and modes of understanding has been understood as necessary and central element of MAZI project work by all participants, all partners report that it comes with added workload and times of insecurity. Consequently (and dependent on the concrete setup of the pilot environment), some regard it both as more beneficial as well as easier to accomplish than others. While in some pilots, the participating actors perceived the process of increasingly blurring boundaries that unfolded throughout time and process inspiring and enjoyable, while partners in different constellations within MAZI were presented with difficulties to »understand what kind of role to assume«.

In addition to the discussions around the described dichotomies (paid vs. unpaid, etc.) on the pilot level – which essentially means the discussion of such issues between the rough poles of research (universities and research institutes) and action (community partners, activists) – a small group discussion during the pilot workshop in Zurich mapped out some emerging conflicts and tensions that can be observed across the pilots and that manifest on the consortium level:

As a departure point for many of the difficulties under discussion, a profound diversity in disciplinary backgrounds can be described, which does not only manifest in different languages and processes, but also in a very consequential diversity of timescales in regard to the different modes of working. One example for this is the (again) dichotomy between representatives of a more technological/development perspective and actors whose logic of operation is grounded in participatory or human centered design approaches, which became, for instance, very present, when in one of the first project meetings the technical team asked the pilots for a list of requirements, which in turn created confusion and bewilderment among those that base their process on the fact that they cannot possibly determine the requirements prior to extensive interaction with the pilot's social systems.

Hence, we can state that many of the difficulties and tensions among and in-between different consortium members/clusters stem from the necessity to translate and to approximate various, inherently different epistemological systems, in which not only different words exist for different things, but that differ from each other in the basic understanding of how to get things done. This, on the other hand, is now understood as one of the driving forces and primary assets of the consortium, which finds merit in the challenging task to navigate this diversity, as it enables to connect to different stakeholders, lifeworlds, academic communities and discourses in a meaningful way. This need to address many different and divergent recipients s is possible through the development of different narratives and viewpoints that is inevitable within the consortium, as itself consists of of a wide range of interests, perspectives and modes of understanding. As an example, this shows itself in the different meanings that are constructed and attached to the central objective of the project, the toolkit, as different partners express differing versions of narratives concerning the question of what we as a consortium are doing in this development process to which end – e.g. for some, the value of the toolkit lies in its concrete existence and functionality, while others see it as a metaphor that helps thinking about digital sovereignty – and as boundary object to help others to join these discussions.

Another facet of this plurality shows itself when looking at the different levels of commitment with regards to the consequence in use of open source resources as one overarching theme of the project: while for some, the principles around open source and FLOSS discourses and communities are an essential part of their professional and personal lives, other members of the consortium embrace these topics as a design challenge.

These are but two aspects that show that narratives are not only divergent, but also are crafted over time. In this sense, the pilot structure, around which the project is designed to unfold, works rather well in the sense of it providing the development process of the toolkit with a broad range of contexts, experiences and lifeworlds, within which the consortium‘s actions are grounded – and in return provides the four pilot projects with a large amount of freedom to unfold in accordance to the local and personal specifics of the respective subproject.

However, this pluralism in thinking and conceptualizing the very core of the consortium can also be read as a vacuum of direction, or a lacking clarity in vision; which, while being clearly embraced and inscribed into the DNA of the project, acts as source for many of the challenges the project team is facing. This is amplified by the many differences presenting themselves with regards to the range of pilot contexts within MAZI: While some efforts – for example the Berlin pilot – were encountered with fertile ground in the sense of an eager community that was rather uncomplicated to activate, others had more difficulties in identifying and entering social structures in their context due to local specifics. Physical proximity seems to play a crucial role in this: Pilots with partnerships in one city or even one city district is having a clear advantage in organizing activities within their subproject over those that need to communicate and collaborate over great distances. The same accounts for the different contextual settings in terms of already existing interests and discourses encountered in the pilot studies, that made connecting and aligning interests and negotiating relationships with external actors easier for some teams than for others.

Furthermore, some overarching difficulties with the structuring of the project were identified: While its horizontal organization and conceptual openness in terms of its concrete outcomes is seen as a clear asset by all project members, it is clear that these aspects make processes of decision making and converging the different threads time consuming and challenging. Against the backdrop of the consortium‘s general aspiration to fair working relationships with special regards to the research/action gap that has been described elsewhere (everyone should gain, otherwise it would be unethical), organizing activities in the spirit of CAPS, while at the same time maintaining metrics, logics and time frames of a regular research & development project remains a challenging, yet promising task.

3.2 Strategies and tactics

In light of the complexity of the challenges that present themselves in the constant and still continuing co-production of the project as an interdisciplinary artifact, the interdisciplinarity framework discussed in its various components in Section 2 of this deliverable does of course not do justice to the complex sets of actions applied by MAZI partners. While the components discussed in their tendency represent what Michel de Certeau (1984) calls “strategies” – semi-institutionalized constraints or boundaries, within which practices unfold –, another, equally important dimension is, again after de Certeau, comprised of “tactics” – short-cuts, work-arounds, unforeseen solutions, compromises, etc.

A strategy in the sense of our collaboration is a set of choices used to achieve an overall objective, and in interdisciplinary work, to be able to define it collaboratively, it is critical to agree on the main purpose of action. For instance, some strategies pertaining to the MAZI project have been devised during a small group discussion at the pilot workshop in Zurich. When tensions appear during collective work, one might take a 'reducing solution' or consider only a 'stable model' like in computer simulations. The strategy would be to simply ignore the possible tensions and propose a technological solutionism. Of course, another approach is embracing complexity rather than denying it, and thus imagine different strategies in trying to deal with the inherent tensions. In this regard, three overarching, generic strategies represent the interdisciplinary backbone of collaborations taking place within MAZI:

Firstly, **communication** is a generic strategy within which **active listening** (Sclavi 2006) is an important tactic that reduces the risk of conflict. Moreover, acknowledging a problem and also having informal conversations are among related tactics or specific actions used while applying the strategic choice of communication.

A second, generic strategy for interdisciplinary work is **cooperation** either in shaping a **common language and shared goals**. For example, since an early stage of MAZI project, the partners were in agreement with the necessity of a pre-design phase, that was included also in the project proposal, to engage with the local communities and get to know their wishes and needs. For that, a dedicated **time budget** is necessary, a common understanding of the vocabulary like the initiative to produce a MAZI glossary, as well as various tactics to advance in the process of co-design and to monitor the activity. One of such tactics is creating a group around the MAZI toolkit playing the role of a boundary object, which may be understood as a MacGuffin plot device to focus on a common goal (see note on it in the References section). Another tactic is to identify a community actor (or a 'white knight') as a facilitator from inside the community and provide with assistance and training when necessary.

Finally, a third strategy is to **design a process** of deployment and co-creation, in which timing and rhythms are critical, and that requires a commitment to **sustainability**. There is a long-term development of the various components of hardware, software and information, according to different needs and understandings. Providing **guidelines** is an essential tactic, as well as undertaking internal negotiations toward being **critical**, to understand the limitations, and **self-reflective** for managing expectations. For instance, considering how demanding the toolkit's complexity might be for meaningful conversations, preferring pulling rather than pushing the technology, and taking into account possible misuses of the toolkit. **Storytelling** is a good tactic to enrich the toolkit with practical examples.

In light of these overarching sets of strategies, it seems important to mention the fact that any idea of a MAZI "framework", of guiding rituals, formalized practices and institutionalized structures, lives by giving (and by being designed to give) space for exactly these informal, unforeseen and sometimes unreplicable practices. In order to give an impression of the range and richness of this vital, but not easy to describe aspect of the transdisciplinary work carried out within MAZI, we a) asked partners to complement their reports on practical manifestations of tensions and contradictions (as described in the prior section) with practical reports on how they tackled the respective challenges, how they acted within the messiness of the empirical reality and how they developed productive ways of dealing with the contradictions that are an inevitable part of *working with the other*. In addition to that, we b) discussed cross-consortium experiences with regards to strategies and tactics in the aforementioned workshop conducted in Zurich in May 2018. The following is a condensation of concrete strategies and tactics applied and reported on by the pilot teams. This synthesis has been grouped in three overarching categories (Community Engagement, Transdisciplinary Process & Strategic Roles), which is derived from reading the material provided by the pilots. Hence, this categorization as well as the following synopsis is interpretative, naturally arbitrary, but consequently grounded in how project participants experience the project work on the ground.

3.2.1 Community Engagement

Communicating respect

- Translating community needs into the design of the toolkit (e.g. certain applications) and also communicate these transfers back into communities (show effects of their opinions)

- Sharing project capital: Seeking local benefit, compensate local actors when possible, etc.

Building social (community) capital

- Careful & slow approach of communities
- Sensibility towards research fatigue & deeply rooted skepticisms against academic dissemination of community work
- Spending time building trust: not pressuring MAZI into processes, but supporting local actors in their processes while fostering & allowing MAZI-topics to build up when time is appropriate

Creating common grounds

- Connecting discourses & interests of project with external ones
- "Seizing moments": Introducing concepts of MAZI when they make sense to local processes

Mediating technologies

- Helping community partners and local actors to "professionalize": creating an "other" (e.g. tech group at Kraftwerk1), special interest group within INURA
- Doing the legwork: Making it easier for others to get comfortable with less intuitive tech alternatives (e.g. by providing specific material in different languages to make things easier)

Building partnerships of mutual amplification

- Using MAZI to help local processes, even if they are not directly relevant to MAZI. This builds network that later on supports project
- Creating situations of mutual benefit, e.g. by making sure workshop participants go home with new learning, tech, etc.
- Identifying people with the "right" needs within local communities, build work with them & help them to become ambassadors
- Identify & support "border-persons" within or beyond the team as interface and translator between different epistemological & ideological systems

Approaching conflicts proactively

- Taking a proactive, open and transparent stance towards fears of appropriation and other forms of questions and skepticisms of community actors towards research institutions or EU-funding

Managing Expectation

- Establishing open dialogs and clearly communicating boundaries of project and team, e.g. time constraints, skills & diverging interests

3.2.2 Managing transdisciplinary processes

Dedicating space and time

- WP3 as a strategy in itself: Focus on inter-/transdisciplinary challenges & time taken to understand and negotiate different worlds, objectives & approaches
- »Structuring extensive preparatory phase to allow the time for interest & groups to shape«: Focus on social learning instead of on quick wins
- Staggering pilot timelines & communication of pilot processes, learning from the others
- Commitment to contact: Face to face meetings as frequently as possible, to understand each other's challenges and ways of working

Task-based allocation of pilot resources

- Overcoming uncertainties resulting from interdisciplinary setup by breaking work down into smaller projects and tasks, focusing on what can be put into place by pilot teams
- Dissolving disciplinary boundaries within team by shifting from domains of expertise towards task-based skill allocation

Adaptation to pilot environment

- Recognizing dynamics of pilot context as integral part of the project: »Accepting slowness of the process as being part of the local culture of practice«: Staying flexible & reflexive, adapt goals and methods to the unfolding process
- Reacting to developments on the ground, bringing MAZI "into position", e.g. in the case of the planned Google campus in Berlin
- Constant act of balancing opportunities that arise with requirements contracted through the DoW

Designing MAZI's afterlife

- Transferring ownership to local actors
- Providing support for appropriation & continuation beyond the project: Supporting spin-offs, custom solutions, etc.

3.2.3 Strategic roles

Flexible dichotomies

- Insisting on relationships of collective learning: Withstanding the risk of falling into designer/user- or customer/service-provider-relationships
- Within pilots: collaborative work on eye level, but clear communication on who leads which task
- Strategically upholding dichotomies (e.g. researcher/activist) to the outside when needed, e.g. towards CAPS-audience, within university, within activist circles

Assuming responsibility

- Developing the understanding that this kind of work results in social contracts with local groups and individuals, in which we »have to find ways of supporting their challenges that go beyond the remit of MAZI.

3.3 Roles, guises and action fields

By acting strategically and tactically (see the previous section 3.2 of this deliverable) within the project and in facing the challenges described in Section 3.1, partners take on different roles and guises, and act in different fields – all of which is paramount to understand in order to describe the framework within and through which the interdisciplinary work of MAZI takes place. Hence, the following will, similar to the section above, describe a

more general take on these three categories, before a more concrete perspective on how these dimensions emerged in practice gets described. For this, we understand **roles** as those that partners are given or that we take upon ourselves; **guises** instead are the tactical implementations of roles to suit situations and interactions we find ourselves in during the course of our work; and **fields of action** are the areas of work in which various partners in their roles and guises have operated.

Roles can be distinguished by (1) those that partners have been given and (2) those that partners dynamically choose to take upon themselves. The former are: defined by the Description of Work (what partners signed up to, and have to fulfil in the contract); by consortium colleagues (how partners are perceived as a result of our background, expertise, or 'positioning' by other partners); and those applied by others outside the consortium, e.g. neighborhood groups with which we collaborate, or external academics identifying us as 'community partners', 'academic researchers', or 'technical team'. The roles partners take upon themselves are defined in response to those that are given, and those that they choose to take on. In a small group discussion during the pilot workshop in Zurich, there was agreement about the following point. At the initial development of the MAZI project, the project initiators brought together individuals and organizations for roles they considered were required to fulfil the goals of the project. MAZI partners were chosen because of the roles they were seen to fulfil (background experience or expertise), and these roles were formalized through individual negotiation and then articulation in the Description of Work (DoW). Few of the partners were known to each other, so at the beginning of the project, partners established each other's' identities through: what had been written in the DoW; positioning statements made during the initial kick-off meeting in Volos (January 2016), and subsequent conversations. This meeting could be seen as one of the key 'constitutive moments' when the creation of a common identity and narrative was attempted, however partners may have benefitted from further debate to consolidate agreement about roles and how that might weave the consortium together.

Interdisciplinarity was emphasized as a working practice since the beginning of the project, with the expectation that partners would traverse disciplines and extend their work to areas in which they have less practice, in order to gain an understanding from different perspectives, and to bring fresh perspectives to established fields. In the initial project kick-off meeting in Volos there was discussion about the differences between cross-, inter-, and trans-disciplinarily, and what this implies for partners' fields of actions and roles within the project. For many partners, operating across disciplines and 'taking the other's perspective' is an established working practice.

Participatory approaches to action and research emphasize listening and including multiple perspectives in collaborative and decision-making processes. However, academic theorizing and reflection of this approach was a novel formalization of practice for some. As the DoW in its entirety was unpacked and potential complexities and possibilities examined, debate emerged during the project's lifespan as to whether we are primarily a 'technology project', or a socially- or community-focused project, and how this steers the consortium's direction and the roles partners should therefore assume. The consortium members, particularly those working directly in community settings have had to reflect on balancing the tension between to whom partners are most accountable: our communities on-the-ground, or the funders? Dynamic adjustments to roles have resulted for the majority of partners. As a consortium there is a general desire by most partners to contribute outside designated specific identities, and an expectation of the others to also equitably participate in the crossing of roles and engage from new perspectives. This has to be balanced with the capacity partners have to fulfill contracted roles and move beyond them: interdisciplinarity in action requires resources (time, energy, finances) to learn and to also participate in novel roles. For example, practitioner-focused partners have taken on research roles, nontechnical partners have been required to engage deeply with software and networking technologies, and small enterprise partners have need to manage the administrative and accounting processes of EU reporting.

Interdisciplinarity brings with it an overhead of performing both within an expected and agreed-upon role, and also taking on new roles or approaching tasks from a different perspective. At critical junctures with demanding workloads it has at time proved difficult for partners to take on some of the additional or alternative roles: for example, socially-focused community partners needing to become competent in technical skills which are new to them, and then play the 'role' of 'technology advisers' when engaging the wider publics with the MAZI toolkit. One researcher identified that in a community setting they were identified as the 'technical expert' by local people even though they don't consider themselves to be technical. Equally, the technology development partner was pressed to engage in contextual specificities and social realities of individual pilot situations beyond the provision of technical solutions. It was felt to be of crucial importance that the technical team, as well as the

pilot partners, took part in cross-fertilization visits to each of the pilot locations to understand 'conditions on the ground' and how these might influence the direction of the toolkit development. In this way the technical team could better understand the roles that both the pilot partners but also the non-human actor of the toolkit was playing. We can reflect on 'defined' interdisciplinarity prescribed in the project description, or 'relative space'/ territorialities as noted in the theoretical expose presented in the deliverable on self-reflections within MAZI (D3.11) and 'spontaneous' interdisciplinarity, instigated by the members' will and need to cooperate and cross-fertilize, which may be understood as creating relational spaces (refer to D3.3, D3.11, D3.12).

Guises are the tactical implementations of roles to suit situations and interactions we assume ourselves, during the course of our work. Sometimes, partners take on guises to move forward actions. The cross-over to a different role could feel like a guise, and it could take some time to feel comfortable with it. The project's structure imposes a certain temporality and sequence of actions that is not necessarily compatible or synchronized with the rhythm of communities.

This has influenced the different guises and tactics that members must assume to reconcile and cope with the demands of both the project and the communities (temporality-rhythm). The dual roles that partners must play in some situations, for example, both a community activist and an EU project partner, can lead to partners feeling uncomfortable. The engaged publics could also place a guise upon partners. For example, the dual identities of 'small local community project' and 'European project pilot' with community partners acting as both local activists and also representatives of the EU project made some neighborhood participants wonder if partners were assuming a disguise and that there might be hidden agenda, once the fact that the pilot team researchers and activists had been given EU money was mentioned. Guises may at time lead to questioning about transparency and ultimate purpose and could in some cases lead partners to have to participate in ways of working that were 'unnatural' or required additional effort: for example, more formally structuring community events than the accustomed local practices, to include data gathering activities and signing of consent forms.

Fields of action are the territories in which partners carry out work, both within the project (what areas within the Description of Work that partners fulfil) but in the wider sense of where and how partners seek to have an impact. Partners might work to resolve neighborhood sustainability challenges, to shape discourse in the open source movement, and to affect EU decision making and governmental policies. These fields of action are shaped by the roles we play, and the guises taken. Fields of action are chronologically influenced: The Description of Work imposes a structure (e.g. which pilot starts first, the expectation that the first pilots inform the later pilots) and this has influenced how partners can interact. This leads to tensions that need to be resolved; such as the technical partners being tasked with building a first prototype by Month 6, requiring them to request a specification from community partners before the majority had started engaging with their target communities. If the consortium is considered as a network, some of the nodes have held more gravity than others: for example, all have been strongly anchored to technological and engineering requirements. More active reflection may have shifted the gravitational pull of particular nodes during the project.

This is where an interdisciplinary approach has proved useful, for example treating technological prototypes as 'boundary objects' for meeting and negotiating, and allowing for alternative boundary objects such as the 'pre-tech' aspect of the toolkit. Partners reflected that they may have defined roles for themselves too narrowly and thinking of more abstract roles that can contain the journey from one actual role to another, via a guise, for example, is very useful. For example, the project coordinator has acted as 'translator' between EU officials and the consortium members; and the concept of partners as 'knowledge brokers' enables easier cross-overs and shifts of perspective. These roles can reveal individual agency regarding guises, tactics, etc., and, this way, expose with more clarity the dynamic relationship between structure and action 'on the ground'. Actors do not passively and one-dimensionally accept and execute their roles as these roles have been described and assigned to them. Actors constantly reinterpret and renegotiate their roles within the institutional, ethical, social, technical and economic boundaries that delineate the different fields of action.

In addition to these overarching considerations, the following is a synthesis of individual perspectives on roles, guises and fields of action as articulated by pilot actors in the self-reflection exercise (see Appendix II). As before, these condensations have been grouped in categories, which serve as prismatic perspectives on roles, guises and fields of action, in the sense that their order does not necessarily express their weight, represent the "right" way to be understood or ordered, nor do they exhaust the complexity of this description.

On facilitation: Albeit in different forms and stages of the project, most partners saw themselves taking on roles

of facilitators and educators, in that they took on tasks of mediation, moderation and translation between different groups and epistemological systems, but also felt the need for constant presence in the respective communities to develop the process. In this process of mediation, foci had to be put simultaneously on enabling long-term, participatory processes, as well as on keeping an eye on top-level objectives while at the same time concretizing the projects in "offerings"/concrete, understandable instantiations to community actors and external stakeholders; the need to "focus on concrete projects that are relatively easy to explain and pass on to local actors and develop participatory learning processes". Most partners thought it is necessary to introduce technologies in their communities with an "organic approach", which means pulling DIY-technology instead of pushing the project's objectives. Related to this, partners share a general understanding of their own role as stewards rather than authors, which implicates the challenges of learning to let go, once seeds are planted.

Flexibility & Reflexivity: Roles taken on by pilot members are dynamic, context-sensitive and often not intuitive. For example, a designer has to act as an expert in his or her domain, while on the next day the role entails the provision of technical support to community partners, to act as a community organizer, or to navigate bureaucracy. Hence, processes within MAZI often unfolded as collective learning processes with regards to the perpetual beta of roles being taken on.

For this, many partners reported on experimentally giving up on traditional framings in understanding their own disciplines, while at the same time and constantly negotiating where lines have to be drawn (when do we need a developer, a designer, an urban planner?). This also comes with the importance of not fetishizing the various concepts prevailing in disciplinary discourses (such as "Participation"), but rather of taking them seriously by also exploring their boundaries. Thus, partners acted as triangulators of knowledge, both within as well as outside the project consortium, by constantly acquiring "just enough" knowledge (about DIY tech, urban activism, interaction design, etc.) to be able to understand and pass on discourses & skills as needed.

Navigating contradiction: Creating workable structures of collaboration within MAZI sometimes presented partners with the necessity of partially letting go of academic standards and formalities in favor of adapting to local cultures. This exemplifies the more general and often contradictory challenge of mediating between community goals and project objectives.

Challenges in community work: The setup of the project with its ambition to simultaneously create and test/deploy the MAZI toolkit technology on a community level presented partners with considerable challenges, e.g. with regards to managing expectations while attempting to keep interest levels up. In different aspects of the pilot work, the building of personal connections are crucial, and the process itself often becomes affiliated to someone's ability to build trust. In this regard, some partners experienced that the project-logic (structuring of the work through assigned tasks, deliverables, budgetary constraints, time limits, etc.) does not allocate enough time & resources to do this properly. In addition to that, the measurement of one's impact with regards to the described dimension of community work has been partially perceived as being difficult.

Time and space: Interdisciplinarity takes time, which partners at different levels and to differing degrees found challenging to allocate. For example, various partners expressed the need to informally discuss and learn/exchange in depth between partners and stakeholders, facilitating exposure to different ways of working together and decision making, which often had to be balanced with the more formal, organizational demands and the general limitation of time of project meetings. In reflecting on their role(s) within MAZI, many partners therefore expressed the wish for the appropriate time and space that would better enable them to identify and understand the universality of problems and to allow for inspiration from "outsiders", as well as to better learn from failures and misunderstandings.

4. Summary and future work

The framework presented above is a negotiated outcome of the working process in MAZI. To collaborate in the development of the MAZI toolkit, a shift took place at various levels, from inter- to trans-disciplinary, producing relational spaces. On the one hand, such moments happened while working within the MAZI pilots, between research and action, as well as across pilots while working in consortium face-to-face meetings and online exchanges. On the other hand, the conversations and deliberations moved toward transformative learning, and an attitude of 'critical pragmatism' (refer to Forester 2013, see also the second version of this document D3.6) was built through all these diverse practical experiences toward creative context-specific actions.

The final version of the report on "DIY networking as a boundary object in interdisciplinary research" (D3.4) will present in more detail these moments within the project time frame, in the development of a shared understanding of the common tasks and objectives, and a shared vocabulary exemplified through the MAZI glossary (see Appendix I). The interdisciplinary framework shows an evolution of the corresponding roles, attitudes and tactics of the different actors within MAZI. That has been stimulated by working out the tensions and conflicts, by devising strategies and tactics, and by means of iterative internal and group negotiations.

The interdisciplinary framework shall be transferable, nevertheless, to other work circumstances. Thus, it is important to remind here some of the research design specifics of the project. In MAZI there are planned shifts between more generic, and rather specific forms of collaborative work within the consortium like in the local pilots, and the interdisciplinary research translate back-and-forth between these scales. And as discussed in various reports, the framework under discussion exists and evolves in close interdependence with other tasks of Work Package 3, as visualized in Figure 1, which are 'strongly connected and to some extent overlapping tasks' (D3.6, p.38).

Within processual suggestions for other interdisciplinary projects, note an explanation provided in the "Reflections on the MAZI Toolkit as a boundary object" section, "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 […] and 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" (D3.12 Section 2.3, p.21). Moreover, this complex collaborative interdisciplinary work follows a dynamic process of experimental research and action, which is circular and iterative, implying reports, cross-fertilization events, evaluation, and dissemination activities.

The project proposal put forward a potential structure of this framework for interdisciplinary collaborations, which was applied for co-designing the MAZI toolkit. In the three versions of this document (D3.5, D3.6 and D3.7) the initial proposal has been applied, tested, adjusted to the needs of practice, and also has been abstracted to be useful for future use. There are six other complementary documents that deal with the MAZI toolkit as a boundary object for interdisciplinarity and with self-reflections as a method to refine the project action. Thus, all these documents devise the MAZI interdisciplinary framework that may take the test of time by being applied to other co-designing projects that bridge research and action.

References

Certeau, M. D. (1984). The practice of everyday life. Berkeley

Forester, John. 2013. "On the theory and practice of critical pragmatism: Deliberative practice and creative negotiations". Planning Theory 12(1): 5-22.

Sclavi, Marianella. (2006). The Place of Creative Conflict Management in Intercultural Communications. Conference on Deliberative Democracy: New Directions in Public Policy Dispute Resolution, Cambridge MA June 28-30.

Online sources and MAZI Project Deliverables:

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)

D3.12: MAZI as an experiment in interdisciplinarity: the outcome of a self-reflection exercise (V2)

MacGuffin: “In fiction, a MacGuffin (sometimes McGuffin or Maguffin) is a plot device in the form of some goal, desired object, or another motivator that the protagonist pursues, often with little or no narrative explanation. The MacGuffin's importance to the plot is not the object itself, but rather its effect on the characters and their motivations. The most common type of MacGuffin is a person, place, or thing (such as money or an object of value).” explained online at https://en.wikipedia.org/wiki/MacGuffin

Appendix I: Beginnings of MAZI glossary

C:

Community engagement practices: in MAZI pilots: Co-designing (infra-)structures versus designing solutions (Berlin Univ of the Arts - UdK); Participatory action research (The Open Univ); Interdisciplinary structures for information sharing (NetHood); Speculative design: participatory creation and dialogue (Napier Univ); see (D3.2);

Conviviality: a 'location specific condition', "to live in geographic proximity (neighbourhood, shared house/flat)"; a 'set of shared values' such as trust, respect, reliability, tolerance, care about others, which have to "be refreshed regularly"; 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". (more detailed in D3.12)

D:

DIY networking (D3.2; D3.11): D3.2 Section 1.1 - DIY networking: toward a definition; D3.2 Section 4.2 - DIY networking as a boundary object

F:

FLOSS: free, libre, open source software

Free: as free of charge. yet there is a cost of production + responsibility, as "there is no freedom without responsibility"; "It should be more about "cost-based" and "fairly shared" (more detailed in D3.12)

K:

Knowledge sharing: 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; knowledge may be considered also "the collection of life experiences which can be shared in the sense of 'exposure' (i.e., "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"); "to empower individuals, support their personal development and support relationships between individuals and groups"; "a concern for sustainability of human practices", as we may understand "collective awareness as being ingrained in the process of sustaining life" (more detailed in D3.12).

L:

Libre: 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. (more detailed in D3.12).

O:

Open/ openness: 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" (more detailed in D3.12).

P:

Place: designates a location --geographic as well as imaginary-- that has human and social dimensions attached: "it comes into existence by human consideration an becomes qualified by human experience"; it is invested with meaning generated by emotions, memories, symbolic value associated with a particular lived space (e.g., on lived space Henri Lefebvre, 1991; on identity M. Halbwachs; on experiences, uses and qualities Edward Relph, 1976);

places are “connectors/triangulators of energies, bodies, identities, flows”... a place may be first imagined and later attained, or never attained in the case of utopia; it “might be imaginary or have become highly idealised with time. The physical spaces may no longer exist but the places reside in our memories and contribute to our sense of self.” At the same time, it is "a continuous feedback process or _perpetual beta_, where place is at the same time the material manifestation of social practices, and the trigger of new social practices/relations" (more detailed in D3.11)

Participation: a complex concept that refers to the involvement in collective activities or processes. “The right and responsibility to stay informed and to be part in decision making processes.” It is influenced by the social and cultural contexts, and the environment in which discussions take place. There are several conditions that are mentioned in association with it regarding spatial, temporal, social and political dimensions. Among such factors that exist on a continuum and form several dichotomies are: remote or in physical proximity; direct or mediated (with and through technology); short term or long term; outcome-oriented or action-oriented; group or individual; active or passive; willing or unwilling; equal or unequal; powerless or powerful. In the case of HCI, for instance, interactions are premised on it. If social relations receive also some weight or hierarchy, then the participatory process shall be understood politically, as “Participation is intertwined with the process of placemaking, and this opens up questions of power relations”. It is important to note that the results of such processes affect everybody, those who have been engaged as well those absent. (more detailed in D3.11)

Process: a dynamic flow, a journey to a certain goal, the mechanisms and procedures by which activities are enacted or guided; “it may be perceived through its specific moments, which often imply gradual change”; it is inextricably linked to the concept of participation, and can be “interchanged with “end” or “product”. The results become processual.” “On the one extreme a process can be linear and predefined through a set of "phases", like requirements, implementation, evaluation, etc. On the other extreme, a process could be imagined as an evolution of one more interrelated threads of thinking/acting that could include some unpredictable "events" that cause a significant change in this evolution.” (more detailed in D3.11)

Personal point of view / perspective in an interdisciplinary discussion: When reflecting on what a personal point of view means in an interdisciplinary discussion, the MAZI team considered that a relatively challenging topic. There is agreement that acknowledgement and respect for personal perspectives depends on the social and cultural contexts, indicating contextual factors such as motivations, goals and experiences. Nevertheless, it is important to become aware of how one engages in participatory processes, and what the contribution to the conversation may be, by adding particularities toward shaping collective understandings. “A personal point of view has two elements. The first is one's personal background, knowledge, needs, and objectives. The second is one's personal perspective on the topic of the discussion and the perspective of the others.” (more detailed in D3.11)

Power relations in participatory processes / interdisciplinary projects: Power relations are of interest in the MAZI project, as often in participatory processes they may be uneven, whether that is actual or only so perceived. They reflect the ability to act, to influence collective processes, turning effective personal perspectives, intentions, goals etc (e.g., in the answers Latour’s description is been cited, “power is present where an actor affects the way of being of another actor”). Moreover, if the structures and relationships are unclear or ambiguous, and if expectations are not well understood and accepted, power relations can cause strong emotions and stressful situations. As a particular example for the MAZI consortium, “the ‘community’ partners have power as gatekeepers to access to the pilot study communities; the technical partners have power as they build the tools we wish to try out; some partners have more resources allocated so might have a greater ability to define the direction of a piece of work.” “The very framing of a process or an interdisciplinary project is an exercise of power” and a potential solution is “to alternate and give the chance to different actors to take the positions of power.” (more detailed in D3.11)

S:

Social cohesion: a mutable quality, fluid over time, and thus a relative concept; 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 influences, as “external threats can strengthen social cohesion of a community but also place social bonds under stress as individuals deal with external challenges independently.” (more detailed in D3.12)

Sustainable living: “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,” “supporting sustainable lifestyles requires an awareness and examination of potential impacts of actions and interventions.” (more detailed in D3.12)

Appendix II: Answers to the self-reflection exercise

Berlin Pilot Study

Challenge/Tension	In what (concrete) form did you encounter this phenomena in the project and/or your pliot?	How did you tackle/overcome/deal with it (tools, strategies, actions)?	Does this experience suggest any change of view in your disciplinary perspective?
Innovation vs. Pragmatism	Since time and ressources are very limited, the readiness to invest considerable amounts of time to co-create technology was very low in the beginning. If data ownership and digital privacy is not your focus, it is not obvious why you should invest in using etherpad instead of GoogleDocs, which is much more convinient and an established practice. In the process of developing the interview tool in the context of the Neighborhood Academy in Berlin, we were more than once challenged with the question of why we do not utilize already existing, open source software and instead try to come up with something new, which means that a lot of people have to invest a lot of time and energy.	Several strategies seemed useful: On the one hand, UdK & CG carefully crafted arguments and aimed at connecting discourses (e.g. urban commons & digital commons) in order to foster the intrinsic motivation to think about alternatives to the current practices. On a practical level, it meant doing the legwork: Setting up infrastructure, making it easy for others to use the "less convinient" alternatives. In terms of the sometimes tideous design process, we aimed at organizing the workshops as rewarding as possible, e.g. by making sure people learn useful aspects about technology by building it. At a later stage in the project, changing external factors elevated the interest in MAZI. Due to a growing digital start-up scene in Berlin and the opening of several interational digital corporations (e.g. Google), discussions started on the correlation between rising rents, gentrification and the corporate tech-community. In several discussions, the need for decentralized, locally owned and developed technology was voiced and MAZI as well as Freifunk were placed as alternative models for inspiration.	"Participation" is often a rather fetishized term in (Participatory) Design. Exploring the "limits of participation" and contributing to the respective literature of the field from a position of reflexive practice can help differentiate how we look at the complex relationship between professional designers and those affected by the artifacts that are being created. We found some important "roles" of designers or community organizers in this process such as translator, care taker for the process, teacher but also as technical support. The roles were dynamic and dependent on the specific situation.

Added work vs. Added value	Most initiatives and community actors have a very clear political agency or project goal, and this stands in focus throughout the work they do. Therefor, any additional issues (such as digital sovreignity) are seen as competing for resources. This was reflected upon in several interviews from the evaluation in winter of 2017. One example was using MAZI during events of Stadt von Unten, where they felt they had to explain so much about MAZI and didnt have the tools or information to pass on. Therefor it was taking a lot of time during the event to talk about MAZI instead of talking about the future of the space they care for.	The co-creation workshops and the very carful and sensible entry into the community contexts was an answer to this. During this session we specifically highlighted that the MAZI should be seen and used only when it had an added value and not if it felt like a burden. To the very specific example mentioned, the need for easily understandable and transferable information about MAZI (in German) is something we are working on to be able to equip all deployments with for the future. This is also one of the reasons for creating the Berlin specific "book" on MAZI in all its components. As a positive example, we can take the use of MAZI in a neighborhood centre. One issue of the centre was to activly build and visulize the neighborhood and the connection between its residents. Their practice often lied in "activating interviews" and using MAZI for this became very natural and added the value of being able to display (through sound) the impressions of neighbors on their own community. MAZI being local also had the effect of "pulling" people into the centre to be able to listen to the interviews.	From a design perspective, these reflections result in an altered perception of one‘s role conception. Instead of understanding yourself as an intervener or problem-solver, the designers involved in this pilot project had to learn how to not only see themselves as part of a broader coalition, but to also become it: This means both to step away from some role enactions that feel almost "natural" to claim in design processes, as well as to share the domain of a designerly expertise with others. In short: Designers had to become community actors, community actors became designers, and the disciplinary boundaries increasingly blurred. To what extend this is useful or when a line has to be drawn in order to still allow for the value of expert knowledge to unfold should be subject to further research in this context.

Paid Research vs. Voluntary work	The communities we worked with have a long history working with academia and having researchers "enter" their communities to study them and "extract" this knowledge to the benefit of the researcher or his/her institution, not reflecting this knowledge back into the communities. Therefor this was an articulated concern by some of the initiatives involved in the MAZI process. "Cultural capital" feeding off volunaty political work of initiatives, not being fed back. Calling for the Berlin pilot-team to be seen as "service providers" for the initiatives was the solution articulted by some initiatives in the begining of the process. This was even a topic in the very begining of the conversation between UdK and Common Grounds.	Being well aware of the discussions on the topic of cultural capital, we confronted the topic heads on during our first meetings. Being sensible to the issue, we were, however, capable of surpassing the dichotomy between "service taker" (communities and community partner) and "service provider" (UdK). Strategies towards this lay in the continuus conversation on the subject but also by being specific in interlacing the discourses of digital sovreignity, ownership/management of technology and right to the city, alternative ownership models in the urban etc. Framing this, we also had the idea of "collective learning" making the seperation between research/activism less interesting or defining.	Very much connected to the answer above, positions and roles that werw claimed and performed on on both sides had to be conceptualized as perpetual beta, as roles kept changing in a process framed as collective learning: separation between teacher and student blur when making the reality of all actors valid and undisputible within the setting.
Facilitation vs. Authorship	See discussion above.	The porousity that resulted from culturing and maintaining and openness in regards to the roles and levels of ownership across the pilot participants led to the very strong and overarching objective of achiving sustainability by consequently transferring and building up ownership for MAZI in the communities we work with. This was attempted by several measures, for example by supporting spin-off projects (both operatively as well as in the development of grant proposals), supporting the development of custom solutions by external actors, etc.	

Formality vs. Informality	The dynamic nature of our pilot setting forced us to change the course of our initially planned research process several times. Hence, from this perspective our approach can clearly be described as being informal in terms of how it contrasts with a clearly laid out research plan that is being followed through with "scientific" rigour.	We learned how to react to the changes that oocur in our pilot context by accepting them as one of the core characteristics of our project work. Thus, we continuously adjusted the overarching research objective from "developing tech that supports a very specific process of participatory planning" to the "creating of a platform that allows the grassroots activist scene in Berlin to think and enact technology development self-sustained and souvereignly – and continuously documented and explained the occuring changes as well as the adjustments made in our pilot deliverables (D2.1 & D2.2).	Again: Extending designerly self-understanding of planner and intervener with reflexivity & flexibility. Managing processes as "flow", …
Project-logic vs. Engagement in local processes	Not unlike earlier projects undertaken in and through the involvement of others (e.g. neighbors, etc.), we encountered the common scepticisms of participants who feared to be guinnea-pigs for scientific purposes and will be left behind once the project ends. Within the MAZI Berlin pilot, this was especially important as we had to develop joint positions in light of the probels discussed above (in the section added work/added value).	See facilitation vs. authorship: We have put considerable emphasis on "designing" the structures of the project‘s afterlife.	Ever aspect leads to a single, overarching implication for the roles developed by design researchers in the context under discussion: Here, the implication is put into perspective by chronological concerns, as the slow, messy and at times contradictory process of (digital) social innovation can at times stand in direct opposition to the necessity to operate within certain project logics – e.g. the development and the following of a project plan, the evaluation of your activities in accordance to initially phrased objectives, etc. As a consequence, we need to work on developing better fitting metrics and project setups, that better allow for things to fall apart and come together many times, in order for actually relevant social innovation to emerge from a research

			and design process that has strong ties in the at times contradictory nature of our empirical realitiies.
Disciplinary Openness vs. Comfort of territoriality	For this, many examples occured during the Berlin pilot development process. For a collaboration as close as this one, disciplinary boundaries have to be transgressed, different languages and skills have to be aquired and claims to terretoriality had to be softened, in order to move inbetween the different spheres.	After the first 1,5 years, we realized that we work best when we collaborate on a very egalitarian base and consequently worked towards disolving disciplinary boundaries that we had in the beginning. While still maintaining some sort of expert-status in the realm of communicating to the outside world (e.g. the university, activist communities or even within CAPSSI), we slowly ceased to make hard distinctions between institution and community partner, designer and activist, etc. within the pilot team.	
Unknown roles: curiosity vs. Uncertainty	Curiosity, openness and appreciation was leading qualities in the cooperation within the Berlin pilot team. The seperation between research/academia and community partner was present within the first year of the project but was increasingly blurred. Confronted with "external" or "representative" roles, such as a community workshop or consortium public events, this speration was sometimes underlined creating some uncertanty about what position/role to take on. In relation to the technology as such, the feeling of uncertainty changed to curiosity once working directly with the MAZI.	After initial conflicts and tension that resulted from the emergent difficulties in achieving a certain level of plannability, the pilot team learned to embrace the uncertainties with curiosity, which helped to steer the pilot into waters that make actual sense for those affected by our work, which is evidend in the high level of adoption and further, independent development of the initial structures (designed under our supervision) into projects, applications and discourses that are not longer connected to us as persons.	

Zurich Pilot Study

Challenge/Tension	In what (concrete) form did you encounter this phenomena in the project and/or your pliot?	How did you tackle/overcome/deal with it (tools, strategies, actions)?	Does this experience suggest any change of view in your disciplinary perspective?
Innovation vs. Pragmatism	An existing Intranet for internal communications whose design has raised a lot of debates and conflictual. And more generally, the availability of affordable high-speed Internet, Intranet, 4G, throughout Switzerland makes it difficult to engage people through WiFi networks, which are very rarely checked.	Intranet use survey; informal discussions; organization of informal events; effort to create a technology group that addresses the political dimension; seizing the opportunity to create a hybrid neighborhood node that includes a MAZI zone from its inception.	Promoting innovation goals require permanent presence, moderation, and translation in the direction of a role as educator, as well as a hybrid space where face-to-face encounters could take place.
Added work vs. Added value	Time constraints and other priorities of the KW1 residents, and the fact that the pilot being located in a housing estate where the private life prevails.	Organization of 'ready-made' events on the KW1 premises like the Kunstwerk1 exhibition, where people were invited to participate, slowly getting engaged in the process according to their needs, skills and interests. In parallel, the initiation of special interest groups (Internet Salon at KW1, Co-Hab in Athens and L200 in Kreis 5) and projects (INURA coop initiative, PARLA in Kreis 5).	It is critical to formulate the 'offering' through very concrete projects like an easy understandable instantiation (Kunstwerk1 exhibition). And at the same time conceive participatory design as a long-term, slow process.

Paid Research vs. Voluntary work	Only one verbalized reaction in this sense, in an informal conversation regarding the MAZI pilot workshop. In general this tension was not expressed as the community actor (Philipp) played the role of mediator. There is, however, a research fatigue in the community.	MAZI was a novelty in the KW1 context, and is perceived differently than if it would come from the side of the KW1 Board, of the Management Team or of a Working Group. By working as the 'border person' between the project and the community, Philipp absorbed some of the inherent related tensions, and he brought in the equation trust and personal connections. There was at one point the idea to employ a social worker as facilitator, to explain the technology and engage KW1 residents in the process, but the necessary extra-work to learning the technology, compensate for the personal connections, and the difficulty of passing the project ideas across put this option down.	The strong role of personal connections and associating a person to the actions in building trust and engaging community members in the project actions.
Facilitation vs. Authorship	Two years in the pilot work show that the MAZI team in Zurich has played very well the role of facilitator, by bringing novel concepts into the current discourse, by not discouraging any suggestions and by planting seeds for grassroots initiatives. There was one voice criticizing the 'celebration' of the founding group of KW1 in the Kunstwerk1 kick-off event on the 1995 Sofa Universitaet, (re-)defining this tension as "do-nothing versus authorship"	First, there is a DIY culture in the KW1 community that has shown also during the pilot, and thus the seeds of various residents' initiatives have been planted, including 'authorship' in the form of inclusion of MAZI notions and ideas in an edited book (Die andere Stadt) and also in a forthcoming book authored by p.m., in the newly founded Intranet Support working group at KW1, and through dissemination of ongoing community events such as the new exhibition on the Stadionbrache-Gruempi Tournament. At the same time, the project team facilitated the initiation of two groups (Internet Salon at KW1, Co-Hab in Athens), two projects (INURA coop initiative, PARLA in Kreis 5) and broadened the scope of the pilot to networking beyond the locality of the pilot through the organization of 'knowledge transfer' events in Sarantaporo, Berlin (Transmediale), Zurich (CoHab: Sharing ideas for sharing space), Bucharest (INURA), Venice	Letting go once the seeds have been planted, without claims of authorship but rather as stewards (like in permaculture)

		(Biennale), Athens (a series of events related to CoHab), Havana (INURA), Warsaw (INURA), and also inviting international guests at the pilot workshop in Zurich.	
Formality vs. Informality	Understanding the slowness of the process at KW1; Formality by going by the existing rules, and informality by avoiding the 'formal' participatory practices. There has been an expression of "participation processes fatigue" and at the same time the need for tools for participation regarding important decisions for the community life and projects.	A 'formal' approach was taken at KW1 in the communication, playing by the rules of the game in terms of providing information through the current media (portal, posters, flyers). A less formal take (i.e., the seed approach) in the participatory practices (not asking for consent forms or using other formal tools). Accepting the slowness of the process as being part of the local culture of practice. In parallel organizing and initiating various events, activities, groups and projects within the knowledge transfer framing of the pilot.	Being flexible and adapting to the local culture Less formality than in the academic environment is required while working in the real life laboratory, to create a familiar atmosphere that is conducive to collaborations
Project-logic vs. Engagement in local processes	The timing of technology design and readiness of the MAZI toolkit was not always "synchronized" with the need to present a technology that can satisfy needs surfaced through discussions at KW1. In addition to the participatory fatigue. a research fatigue (such communities being studied a lot by social scientists). Language barriers between researchers (NetHood) and local community.	Structuring extensive preparatory phases to allow the time to shaping groups to whom to pass the 'project objectives' including the understanding of DIY technology, the long-term goals etc Focus on social learning rather than on usability assumptions (the mobilization factor was just as expected by the community actor)	Taking an organic approach that places intensive focus on collaborations with the local groups, 'pulling' the DIY technology rather than pushing to 'achieve' the project goals
Disciplinary Openness vs. Comfort of territoriality	The members of the MAZI Zurich team have already strong interdisciplinary profiles; the challenge was to shift from inter-disciplinarity to trans-disciplinarity and trans-locality	Openness in the collaboration within the pilot team (e.g., the Intranet survey used interdisciplinary methodologies like a questionnaire built on LimeSurvey digital tool to be tested for the toolkit); building understandings of the other 'worlds' also by ongoing engagement in the WP3 on interdisciplinary framework; structuring of the project proposal by NetHood that is defined inter-disciplinary and	Identifying the universality of problems, placing it within dynamic processes, which imply projects, locations, groups and initiatives, and also getting empowered through outsiders' perspectives (also on the tradition of INURA)

		aims at working trans-disciplinary.	
Unknown roles: curiosity vs. Uncertainty	Uncertainty in playing the role of a 'border person' by the community actor; The role of translator and educator, by being actively engaged in collective learning processes, as well as of curator and space manager (L200), in addition to playing the expected roles of facilitator, moderator, catalyst, and also technical expert introducing people to the MAZI toolkit.	Identifying tasks and walking across the moments of uncertainty by formulating concrete projects ('offering') that focus on what the project team could put in practice themselves. Learning new skills like 'translator' of DIY technology, in the local pilot as well as for the knowledge transfer. By planting seeds, and identifying actors who could take on these roles according to their skills and capacity (CoHab, L200, INURA coop initiative)	Focus on concrete projects that are relatively easy to explain and pass on to the local actors, and in parallel develop participatory learning processes (like the Openki course by Panos on the organic internet)

UnMonastery Pilot Study

Challenge/Tension	**In what (concrete) form did you encounter this phenomena in the project and/or your pliot?**	**How did you tackle/overcome/deal with it (tools, strategies, actions)?**	**Does this experience suggest any change of view in your disciplinary perspective?**
Innovation vs. Pragmatism	While working on interactive demo installations with researchers and students, sometimes the pressure to develop a working insatallation to show to the public raised questions about the best technology to use. There seemed to be alternatives to the MAZI toolkit that might be more practical.	A deliberate choice to use MAZI technologies before other solutions. Often these were successful, and shaped our approaches to the use of technology.	An openness to the use of a "restricted" type of technology as a positive design approach. This could help us to question what we wanted the technology to achieve.
Added work vs. Added value	On reflection, this is a particular issue at the beginning of the process of working with the pilot location and other partners. It takes time and communication to understand the motivations and goals of other people. These have to be supported in some way if the work is not to create an addtional burden.	In several situations (within the partners and with the pilot locations) perhaps more structured time and effort could have been allocated to explicitly revealing and explaining what the objectives of each individual and group were.	

Paid Research vs. Voluntary work	Both partners in the partnership of the pilot are "researchers" but of different types. The different forms of output from our discipline are perhaps not fully aligned, although the overall aims do seem to be compatible.	To some extent we have had to reduce our aims of academic publishing as we have less control of the direction that the pilot study has taken.	
Facilitation vs. Authorship	Within out pilot study the roles are less able to be negotiated. We are more detatched from the pilot study situation so we are less able to take ownership of the process.	We have had to be realistic abou the limitations of how we can work within the pilot study. We have developed some projects within our own situation using the MAZI technology.	
Formality vs. Informality	Yes, being at at distance from the location of the pilot study has lead to difficulties in being fully informed about the situation and the process.	We have had to be realistic abou the limitations of how we can work within the pilot study. We have developed some projects within our own situation using the MAZI technology.	
Project-logic vs. Engagement in local processes	This is largely a problem of distance, lack of time and limited communication channels.		
Disciplinary Openness vs. Comfort of territoriality	Reflecting on the whole project process, it seems that the disciplinary differences are more to do with practical/methodological aspects rather than underlying philosophical differences. The approaches that were observed and experienced during the pilot work addressed different levels of detail, process and timescale. There are also differences in where the approaches sit on a continuum from "high-level" theory to "low-level" practical work. These differences make it problematic to collaborate on a day to day basis.	Over time, a greater understanding of the different approaches developed, and various tactics tried out.	Only a greater appreciation of the difficulties of collaboration, and reinforcement of the need for putting effort into developing clarity around each partner's motivations, aims and processes early on in the project. This kind of clarity could help to develop trust.

Unknown roles: curiosity vs. Uncertainty	Working as "co-researchers" at a distance from the site of the pilot studies made it difficult to understand what kind of role to assume. It became clear that the other partners had their own methodologies and aims, and it was difficult for us to fully contribute to the research process.	By the later stages of the project, we have assumed the role of recording some of the processes that happened at the pilot study site. We are aiming to understand how the research work happened from the perspective of the other pilot study partners, rather than taking an active (perhaps contradictory) role in the direct work of the pilot study.	If the work was to start over again, this clarity of roles could have been addressed more directly early in the process. It has revealed the need for effort to be made to expose and clarify aims, goals and methodological processes early on to achieve agreement around roles. This requires time and effort, along with willingness to make decisions about who will do what.

Creeknet Pilot Study

Challenge/Tension	In what (concrete) form did you encounter this phenomena in the project and/or your pliot?	How did you tackle/overcome/deal with it (tools, strategies, actions)?	Does this experience suggest any change of view in your disciplinary perspective?
Innovation vs. Pragmatism	**Issue 1: The challenge of ensuring community voice within the selection of the MAZI tools.** The project process for the selection of tools for the MAZI toolkit was not always clear and we were not always sure how the pilot team (SPC and OU) and the Creeknet community groups could influence the selection. **Issue 2: The desire for tools to be online/remotely accessible.** The MAZI toolkit cannot be accessed at present via the internet and in a number of use case scenarios presented, community groups wanted to access content and tools not only in a hyperlocal sense (in the same room as the MAZItoolkit) but also remotely. **Issue 3: Tension between existing tools, and investment required to gain competency**	**Issue 1: The challenge of ensuring community voice within the selection of the MAZI tools**. We had to plan for which groups the MAZI toolkit set of tools would be most appropriate, and approach suitable groups: e.g. where we knew one group might benefit from shared authoring using Etherpad. We played an active role within the consortium promoting tools that were not in the current toolset where we saw a need and encouraged debate within the consortium through setting up a list of "contender software" to capture	**Issue 1: The challenge of ensuring community voice within the selection of the MAZI tools.** Our goal was a 'participatory research approach' and the dynamic of the project (limited time and resources) meant that we were not able to engage community groups to the extent that we'd hoped for, we had to be pragmatic about what level of 'participation' we'd expect. This is reminiscent of Peter Day's 2004 reference to "project versus initiative perspectives", where projects have a fixed timeline and 'initiatives' are open ended.

	in new tools. Community organisations were cautious of engaging with new ways of working and tools that required additional time and skills development. Many of the groups we work with are limited in their resources and cautious about taking on extra tasks or changing their working processes, and do not consider technology as central to their interests. **Issue 4: Tension between functionalities of MAZI tools and other alternatives.** We were promoting a set of tools which may have had alternative (or perceived as better) closed source or other open source alternatives (e.g. for non-technical community organisations, Google and similar multinational company products can seem more polished). We were promoting Open Source as a political preference and in some cases closed source tools had better functionality: the case has to be made in a broader sense than just technical functionality for why open source, or why the MAZI selection of open source tools. **Issue 5: Tension between using MAZI tools and established software tools within internal project processes.** We wanted to make sure we were "eating our own dog food", using the tools ourselves that we were promoting to community groups, to both show that they were suitable for use and trusted by us, and to build our own expertise is the tools we were promoting. However, for internal project processes sometimes the MAZI tools were not the best fit, e.g. collaborative writing of EU deliverables were more easily written in Google	conversations around potential candidates. **Issue 2: The desire for tools to be online/remotely accessible.** When engaging with communities, we asked them to reflect on how and why they exchanged knowledge and communicated and sought to identify circumstances in which hyperlocal activity might be appropriate, encouraging reflection on organisational processes and goals (identifying in some cases that online tools were used when local tools would be just as suitable, given a change in organisational processes). This also opened up wider debates about 'data literacy': what happens when we use online tools, who looks at or owns the data (privacy), whether it is appropriate to share online. To support the need for remote and online access, a number of the MAZI toolkit tools have been set up and run on an SPC webserver, an instance of sandcats.io, which has allowed community partners to benefit from the toolkit via an online environment. This development has also been a core tool for SPC and OU interaction (as we are geographically separated). **Issue 3: tension between existing tools, and investment required to gain competency in**	'Participation' was limited also by community groups' resources and 'appetite' (SPC's term) and we need to reflect on whether there could be more effective ways of engaging groups. Pragmatically, it might point to the power inequlity where we were being paid for our time whereas community participants were not. **Issue 2: The desire for tools to be online/remotely accessible.** The limitations on what is possible and the framing of the project caused some reflection about what we were trying to achieve and the benefits for participants. It also might influence what is being evaluated and captured, and in a more general sense than just this specific Issue 2, ask us to reflect on how we might measure our impact on the groups with which we've engaged: we have discussed issues of privacy and mining of data that's kept in online/cloud services but not captured this so far to any great extent: how might we better capture evidence of the influence our engagement has had? **Issue 3: tension between existing tools, and investment required to gain competency in new tools/ Issue 4: Tension between functionalities of MAZI tools and other alternatives.** Similar to

	Docs/Microsoft Word (challenges: writing across the EU partners, working within OU systems and preferences), coordinating dates for events using Doodle Poll; generally, needing to use an Internet accessible service, not offline. For communicating with OU colleagues, the OU MAZI team needed to work in OU preferred tools.	**new tools.** It was important for us (SPC and OU) to craft arguments for the benefits for exploring new tools, and changing practices. Spending time running workshops and providing ongoing social support was important, but a more critical aspect was building trust with groups through attending meetings and participating in their activities, sometimes not mentioning the MAZI toolkit or specific tools until the appropriate moment. Key to the engagement with groups was winning their trust, before they would consider engaging in additional effort. From the OU/SPC perspective, as a team we committed to spending time and effort testing and trying out how the tools might be used in our own practices. **Issue 4: Tension between functionalities of MAZI tools and other alternatives.** Conversations with community groups focussed around the broader philosophical debates of why open source tools might be chosen over proprietary commercial offerings, particularly given that some proprietary or cloud based tools are more well established and may have better user experiences (e.g. interface design). The	Issue 1, there is cause for reflection on what might be achieved within a project, perhaps our ambitions were too great. There is the challenge within a project that both seeks to develop new toolsets and also to trial them at a community level: for the majority of the project we will be asking community members to engage with an under-development tool set. Perhaps in future projects, field trials should be held back until the final year. **Issue 5: tension between using MAZI tools and established software tools within internal project processes.** Clarity is required about the ambition and purpose of the tools: those that are focussed on supporting community groups' activities may not be the same set that support internal project team requirements.

		same issue is true between OU and SPC: SPC is naturally inclined to working with open source systems, and while the OU team has a desire to use these where possible, organisational constraints could hinder our exploration or adoption, so OU often had to take on the overhead of moving between systems. **Issue 5: tension between using MAZI tools and established software tools within internal project processes.** Our original intention was to move to using the MAZI tools whenever possible, but to achieve goals for the project, and for the OU team to communicate with other OU colleagues, we needed to use existing software preferences where necessary: we cannot always dictate which tools are to be used if we wish the input from other parties. A bridging approach (when working between SPC and OU) was to use the SPC provided sandcats installation where possible. When we were collaborating with SPC we tried to make a conscious effort to use open source software as opposed to the big names such as Google or Microsoft. We even would try to avoid using conventional text messaging apps on our mobile phones and instead opted to use applications such as	

		Signal. However, we struggled to maintain this committment when we would communicate amoungst people that worked on the project but were based at our Higher Education Institution (HEI) or another HEI.	
Added work vs. Added value	**OU Issues 1: Emphasising current practice** Where possible we sought to work with SPC and OU's current working practices rather than invent new systems to minimise overhead **OU Issue 2: Ensuring value:** Challenge of ensuring that the contribution we were requesting from community partner and community groups would add value rather than be a useless burden on top of their already stretched capacity. **OU Issue 3: Recognising failure:** Understanding that sometimes our efforts would not succeed and prove not to be beneficial in the long run	**OU Issues 1: Emphasising current practice:** We sought to meet up as frequently as possible, particularly early on (OU, SPC) and understand each others' ways of working, and where possible incorporate these into the MAZI working practices. **OU Issue 2: Ensuring value:** we tried to anticipate and plan approaches to collaborative working and reflect on what was required, before generating work that might not be of short or long term value. Using the SPC hosted Sandstorms.io server and MAZI toolkit as collaborative planning and note taking systems allowed us to plan and reflect on activities. **OU Issue 3: Recognising failure:** Systems for reflection (e.g. sandstorm) and regular meetings enabled us to adapt to situations and hopefully catch efforts that are moving to dead-ends without expanding too much unneccessary effort (in	**OU Issues 1: Emphasising current practice:** This has emphasised that where possible a great deal of time should be allocated for interaction between partners and stakeholders. Some of the most valuable meetings have been those where we have informally discussed challenges with enough of a losse agenda to steer us through a limited time frame but not to open so as to make it a directionless conversation **OU Issue 2: Ensuring value:** It has emphasised the value of systems for collaboration and alloting time to contribute to them. It has been valuable to learn colleagues approaches and values and we have learned from community approaches to engagement with local communities. **OU Issue 3: Recognising failure:** I think in academia we are often pressured to focus on success and I think recognising, and valuing

		these cases, to recognise value that can be carried on elsewhere). We were keen that project partners communicated progress in their pilots as much as possible so we could exchange practice and understanding of progress and dead-ends. This, I think was the plan for staggering pilots - so we could learn from those that preceded us.	failure needs to have greater emphasis
Paid Research vs. Voluntary work	**Issue 1: MAZI project team as an EU funded project.** There has been local caution about engaging with a funded, EU project team and the project team's interests have been questioned. **Issue 2: OU's outsider status:** OU are seen by community groups as an outside academic partner with no prior track record and likely to disappear at the end of the project so there has been caution about engagement. This may also be true of SPC's perception of the OU. **Issue 3: SPC's community credibility and status:** SPC has a long local presence and this may influence local groups' participation with the MAZI project. **Issue 4: Community groups' expectations:** expectations of what the 'social contract' was and the 'currency' had to be negotiated: what was MAZI offering?	**Issue 1: MAZI team as an EU funded project.** Open dialogue with CreekNet community partners about the boundaries of the project (time limited, what can be covered) and seeking participatory processes to hear concerns and respond with actions that will support the community. Open approach to Creeknet cross-fertilisation event inviting the public to all sessions so they can see the range of activities we are involved in, and get to meet other EU project partners and directly converse with them. The intention is to build community capital so as to encourage trust and participation. **Issue 2: OU's outsider status:** similar to above, through dialogue, and showing willing to engage in activities that are seen as local benefit. Honesty about the time limited	The 4 issues raised from the OU's perspective all illustrate the challenges of engaging in a community based project, as an outside organisation with little or no prior contact with the neighbourhood in which we'd be working. It has reinforced our belief that projects need to allow time to develop trust and relationships. In terms of asking community participants to work for free while we are being paid for our time, it raises the issue of what is fair and equitable research and working to ensure there are benefits for all involved. It has rasied the issues of how we can fund community participants for their time and involvement. This is also true of SPC's involvement - it became clear that SPC have to commit voluntary, unpaid time beyond the funding of the project and there's a potential tension or imbalance

		duration of the project, and also looking for networking opportunities that may benefit Deptford communities beyond the range of MAZI. We seek to build trust and share our 'capital'. **Issue 3: SPC's community credibility and status:** For the OU it is important that we are seen to recognise their local credibility and status and show due respect to SPC's preferences Equally it is important to differentiate our roles and show that we bring expertise that can compliment SPC's current activities. **Issue 4: Community groups' expectations:** Ensuring we seek to be clear around the OU's role and what it can offer clarity about what we can ask of community individuals and groups who are working for free, and ensuring we were effective in our contacts and requested as little time as possible of participants.	between the community partner SPC and the academic partner OU.
Facilitation vs. Authorship	**Issue 1: Limited time** There has been much more work than time available: this has meant that in some cases facilitation of other partners has been limited as partners focus on the tasks for which they are contractually responsible. The expectations of the project exceed the resources available and the challenge has been to avoid work becoming too isolated and not collaborative: this is the first casualty of work-	**Issue 1: Limited time** Communication and encouragement of partners to participate has been a key tool. **Issue 2: Pilot roles** Regular contact and communication; agreement via interrogation of the Desrciption of Works of how work should be allocated, and pragmatic reasoning: SPC led on community focussed activities, OU	MAZI has shown how important it is to manage expectations, and enable opportunities for facilitation and collaborative action to take place: this often gets squeezed out.

	overload. **Issue 2: Pilot roles** Within the pilot, SPC and OU oscillate in leading and supporting each other's identified lead roles	led on academic write ups.	
Formality vs. Informality	**Issue 1: Tension between different practices across partners** Across the different organisations, there have been different approaches to collaboration and decision making, and this has led to tensions as different approaches have not always been universally approved. The challenge with interdisciplinary work is that each of the partners comes to the overall collaborative activity (the research project) with a strong sense of what works for them, so it is potentially difficult to give up what has been tried and tested, and consider other approaches that may have previously been discarded as not effective, or novel approaches that feel as if they are close to methods that have been proven not to work in the past in the partner's own experience/domain.	**Issue 1: Tension between different practices across partners** Ongoing commitment to make time for face to face communication and regular email contact has been the most effective tactic.	**Issue 1: Tension between different practices across partners** Participating in collaborative activities have been valuable in exposing us to different methods for collaborating and decision making.
Project-logic vs. Engagement in local processes	**Issue 1: Tension between project logic and engagement in local processes.** At a pilot level, the local environment and circumstances of the publics can lead us in directions beyond the project-logic and funding resources. Initial contact may suggest an interaction which both matches with local needs and also responds well to the project-logic (as set out in the Description of Work). Ongoing engagement may lead the pilot team to realising effort and resources may need to be committed to help support the resolution of a local challenge that might not be justified in project-logic terms.	Transparency with groups with which we are engaging as to our purposes and limitations, and ensuring alignment as best as possible. This has not always been possible and in some cases a social contract with local groups has meant we've had to find ways of supporting their challenges that goes beyond the remit of MAZI	This has emphasised the participatory, on-the-ground nature of community based research.

Disciplinary Openness vs. Comfort of territoriality	**Issue 1: Tension between disciplinary openess vs comfort of territoriality.** Being comprised from many different disciplinary backgrounds, collaboration within MAZI at times demands different approaches to issues than "prescribed" by ones own disciplinary or social canon.	**Issue 1: Tension between disciplinary openess vs comfort of territoriality.** As the project has progressed some of the initial diciplinary boundaries have blurred. At times they have seemed to have disappeared. This latter point has not been the norm but where this has occurred its usually happened as a result of having the luxury to have indepth conversations with partners. For example, as an evaluation reseracher disciplinary openess has always overcome the challenge of territorilaity but this has happened as a result of spending time to really listen and hear the project partners perspective.	**Issue 1: Tension between disciplinary openess vs comfort of territoriality.** The need to make a cencerted effort to spend time with project partners to really hear first hand from them what the issues are etc. Also, given the nature of an EU-wide project I have learnt that its important to take the initiative early on in the project to strognly request this informal indepth communication is prioritised across the project periodically.
Unknown roles: curiosity vs. Uncertainty	**Issue 1: opportunities and risks of exploring different roles.** Participation in the MAZI project has provided the opportunity and requirement to take on different roles and these have come with some overheads as well as opportunities to take a different perspective. There are always more exciting and potentially valuable activities to engage in than we can afford to do. The challenge has been that when community partners have been required to take up the role as an academic researcher this has come with an administrative burden.	**Issue 1: opportunities and risks of exploring different roles** We have had to balance opportunities with requirements to complete project tasks and had to work hard to manage time allocations appropriately: some opportunities (e.g. to technically develop and explore the MAZI toolkit at a greater depth than we originally expected we would) have had to be managed as they could consume more time than we can allocate to the tasks.	**Issue 1: opportunities and risks of exploring different roles.** Sufficient time needs to be allocated in a project where interdisciplinarity in practice is expected, and outcomes accordingly managed.