# Applying ethics in a complex piloting context

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*Abstract*— **With the increasing culture of applying piloting as part of technology innovation, the need for understanding its societal implications is becoming more crucial. In this paper, we introduce a case in point - a Horizon Europe funded project with social innovation and technology-based piloting at its core - and explore its ethical dimensions. Drawing on a mixed-method approach, we argue that a promising avenue for refining our analysis on ethics would benefit from analyzing the context as a "bundle of logics". With the aim of understanding better the power relations, tensions and agencies pivotal to negotiating and embedding ethics across processes, we consider utilizing a framework of "design logics" to the data.**

***Keywords—piloting, ethics, innovation, technology, design***

## I. Introduction

Piloting and pilots are key elements in present-day innovation policy [1]. The European Union innovation policy steers funding for projects leaning on piloting through its research and innovation programmes [2] while the experimental approach was also consolidated as part of technology governance since the first Ursula von der Leyen Commission principles and Europe fit for the Digital Age – program [3]. At the same time, all research and innovation funding through the EU mechanisms subscribe to the principles of Responsible Research and Innovation, introduced 15 years ago to increase the transparency and inclusivity of innovation processes [4]. RRI's ethical principles aim for societal desirability of the innovation process [5] favouring practices such as co-creation and transdisciplinary interaction between scientists, stakeholders and research subjects. These considerations are applicable for innovation pilots as well, given the expectations that these serve as vehicles for RRI.

In this paper, we introduce a case of a specific Horizon Europe funded project and our work towards analyzing ethics in its setting. During our work, we have been asking questions such as: what is the role of ethics, when a complex, multi-agency project is in fact a "bundle of logics"; what happens to ethics, when different perspectives, claims, expectations, objectives, power relations and positions of power clash and coincide? Below, we outline our research approach, context and methodology. Our hypothesis is that by understanding the myriad logics in a more refined manner, it is possible to also improve the analysis and application of ethics in technology piloting.

Generally, piloting leans on highly conceptualized processes, which aim to scope all aspects of the activity in an applicable format. A closely linked pair of piloting as such is the process for the application and selection of the funded pilots, i.e. the call round preceding piloting. Both phases include an overlapping set of actors, and potentially also research activities. Therefore, the power structures in this setting are complex and include a myriad set of positionings towards the objectives and backgrounds of the pilots [6] [7] [8] [9]. If public sector actors are involved in piloting, additional questions of cumulative institutional learning and eventual scaling based on pilot results emerge [10].

The assumption is that the more complex and contested challenges are addressed, the more collaboration between science, technology, society, and policy is required [11]. Piloting would thus greatly benefit from what Stilgoe et al. [12] call collective stewardship of science and innovation, highlighting inclusiveness of affected publics, responsiveness towards diverse values, and reflexivity about the purpose of a technology. However, when piloting is embedded in complex settings involving diverse actors, contexts, agendas, roles and logics interacting, ethics becomes both paramount and perplexing.

In this paper, we introduce the CommuniCity project (see below) and investigate the project from an ethical lens, asking how ethics can and must be weaved in through the innovation piloting contexts. The motivation behind the process has been to see if a highly ambitious project design can be implemented in an ethically robust way in practice, and if such endeavors can be better incentivized in the future through funding instruments. Approaching this question especially from the perspective of design research, we consider such a context as one affected by diverse issues stemming from research ethics, ethics in technology and ethics concerning the work with marginalized groups. We argue that the CommuniCity project setting is constructed as a bundle of logics that influence the project settings, goals, objectives and outcomes along with the institutional constraints.

The paper first introduces briefly the project's background, then introduces the design research approach to the project and the research setting for subsequent work. Finally, in our conclusions we consider the implications of such an approach on ethics in complex pilot projects and missions.

### A. Background: The CommuniCity project as a case

Our window to the piloting landscape opened through the CommuniCity project, funded by Horizon Europe (as a CSA in Cluster 4). As indicated in its full name, "Innovative Solutions Responding to the Needs of Cities and Communities", the piloting processes in the project were not only supposed to test solutions in order to develop and scale them but also to ensure that they meet a certain societal need. A number of ethical concerns were discussed at the start of, and during, the project. The original ambition of the project was to develop "an inclusive, community-driven, agile innovation and experimentation model" while "pushing the frontier of community-driven innovation to the margins of society". In particular, our role in the project was the research focus in order to build an ethics and inclusivity framework partly for the project's internal use, but also to be applied as a tool beyond the project's lifeline.

On its website, CommuniCity has been coined as "a transformative citizen-centred project running three rounds of Open Calls" [13]. The project's leading ambition was to include marginalized and vulnerable communities in a co-creation process, which would link together social and technological innovation. The project consortium included thirteen partners across Europe, including experts on inclusive technology development, ethics, smart cities, co-creation and design. The rationale behind the project was to combine a high level of ethical reflection with community engagement and the introduction of both AI and non-AI driven solutions in response to specific challenges. At the heart of the project was firstly the challenge formation, which was set to be driven by the communities themselves, and secondly the implementation of a piloting model which would enable replication across cities and socio-economic contexts.

The project was built on two preceding projects, also funded by the European Commission, where the processes for the open calls and piloting had already been developed. Therefore, the model for this key engine of the project included already established procedural knowledge (practices and processes), roles and examples. However, the specific reach of CommuniCity in comparison to the previous work - marginalized communities - meant that the established practices and processes had to be reconsidered in the light of new ethical questions and perspectives. Alongside of the project's immediate needs, the work done for the assessment and development of ethical questions is also envisioned to be utilized beyond the project context to advance ethical piloting run through the EU funding instruments.

During the first round, the Open Calls were run by the three Partner cities, Helsinki, Amsterdam and Porto. The logic of scaling over the call rounds included adding altogether sixteen new cities to the second and/or third round as Replicator Cities. The Replicator Cities were mentored by the three initial Partner Cities. Each of the Replicator Cities had also "identified their unique challenges" [13] for the third Open Call – in one way or another. These challenges should then, in our view, scrutinize the basic understanding of the "digital, urban and social challenges faced by the marginalized communities" [13] which the "tech providers, organizations, cities and their residents" should try to overcome together. The aim of the project is to run up to 100 Tech Pilots in Europe by the time it ends in August 2025. The project partners have also sought to analyze the arising ethical issues through academic literature [14] thereby contributing to the ongoing, and increasing, debate on ethical implications of technology development deployment in Europe. They have, for example, addressed the tension between a pre-designed Open Calls and piloting format and a context-sensitive approach to co-creation and community engagement. In our work, we focus on the possibilities and hindrances of assessing and applying ethics in a complex project setting, which tries to accommodate a diverse, possibly conflicting logics of technology and innovation, marginalization, public local governance, and research.

As part of our role, we maintained a critical stance on whether such a push for building a specific framework is feasible or desirable, and under which conditions. We saw that the RRI principles, aiming for societal desirability of the innovation process, may mean many different things to different actors engaging in the open calls and pilots. For some the desirability may be to achieve quite specific technological goals [15] or to enable that tested tech-based solutions can make market entries and can then be better reached by those that need them [1]. We asked also whether the mentioned "push" could be detrimental to those whose challenges the push then meets in the margins – or fails to meet.

### B. Approach and methodology

This paper draws on the project insights from CommuniCity's Open Call rounds and pilots across five pilot cities. The original first round cities of Helsinki and Amsterdam and their experiences were complemented with insights from Aarhus, Breda and Prague. As part of our role for building the ethics and inclusivity framework for the project, we have during the first two years of the project drawn from theoretical work across critical and feminist pedagogy [16], benchmarked equivalent frameworks, conducted interviews and collected responses for our initial framework.

The specific angle in this paper is that of design. The point is to investigate further if this approach enables us to complement our work with an approach that scopes piloting, technology, social innovation, research and ongoing academic debates about design as an approach. The five pilot cities (with Amsterdam appearing on two rounds) form the backbone of our analysis here. Our methodology for identifying and mapping the various design logics in the piloting process in the CommuniCity project, was to apply a multi-method qualitative approach consisting of the following core phases: 1) A document analysis consisting of official narratives and documents, which were analyzed, along with city-specific piloting calls across various rounds (implementation oriented documents, with the goal to understand the overall project structure and logics; 2) Semi-structured interviews with the 5 pilot cities and their hosts, where we conducted key interviews pilot hosts from three main cities and two replicator cities; 3) Comparative analysis of the cities and their interpretation and translation of the project logics

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in their pilot cities resulting in a mapping centered around piloting processes, challenge formations, ethical considerations and constraints; 4) identifying and mapping design logics, clustered in thematic categories.

So far, this methodology has enabled us to collect insights at different stages of the project. While steps 1-3 have been completed, step 4 is at the time of writing an ongoing activity. Below, we base our initial observations and interpretations on the design logics of Human-Centered Design [17], Co-creation and Participatory Design, Systemic thinking [18], Service design [19], and Value sensitive design [20]. Beyond the design angle, we consider the complex piloting context to include the logic of open innovation and collaboration as well as agile prototyping. To assess the role and possibilities of ethics at play, we seek to consider how these logics interact with each other, namely what kind of tensions or reinforcements we can observe.

In a very concise format, the key characteristics of the different design logics are as follows. Human-Centered Design: focuses on understanding user needs and lived experiences through iterative engagement. It places users at the core of the design process ensuring grounding in real-world contexts. Co-creation and Participatory Design builds on this by convening users, communities and other stakeholders in shaping solutions collaboratively and fostering inclusive decision-making. Systems Thinking adds depth by exploring interdependencies between actors, issues and complex dynamics within which problems are defined to affect broader change dynamics. Service Design complements these design logics by orchestrating various actors, relationships and touchpoints with the aim of enhancing overall service experiences, while Value Sensitive Design incorporates ethical, moral and culturally reflective values into the design process from the outset, also while considering the implications for affected stakeholders. Open innovation in turn introduces external and cross-organisational knowledge flows, fostering collaborations across organisational and disciplinary borders. Finally, Agile Prototyping fosters dynamicity within complex environments by focusing on rapid iterations and experimentations for quick learning.

Together, these design logics interact with each in complementary and conflicting ways, influencing ethics in pilot city contexts.

### C. *Data collection and analysis*

For data acquisition, our study followed a qualitative approach. First, official project materials and city-specific documentation were reviewed to understand the overall structure, objectives, and procedural guidance of the CommuniCity approach to piloting. This dataset provided early insights and avenues for identifying the different design logics that were embedded in the efforts of each city.

Secondly, semi-structured interviews were conducted across five cities—Amsterdam, Helsinki, Aarhus, Breda, and Prague. Interviewees included both pilot managers and pilot hosts as well as some solution providers. These interviews explored each city's background, roles of key actors and motivations for subscribing to the innovation piloting via CommuniCity. Discussions also included future plan, including long-term adoption strategies of the piloting results and wrap-up processes. A particular focus was placed on the challenge formation phase, as that was considered central in identifying the "design logics". A comparative analysis of the timelines and milestones across the different piloting rounds was also conducted. This allowed for a cross-city comparison of how the piloting process was interpreted and adapted, shedding light on how these cities approaches phases such as application calls, team formations, collaboration strategies and communication practices with participants and stakeholders including marginalised communities.

Additionally, discussions were held with CommuniCity researchers which provided meta-level perspectives on how the piloting programme was adapted and translated across the various cities. Based on gathered data, the various design logics that emerged across the cities were identified. In the following chapter, we will shows some examples of how they show up in the data set. We will also provide some illustrations about the tensions within specific sites.

## II. Five Cities, Multiplicity of Intertwined Logics

During the project altogether 16 cities took part in the open calls and resulting piloting rounds. Despite the detailed guidance for managing the calls and the pilots, each city's approach reflected an own blend of design logics (see Table 1).

Amsterdam's approach had features from Human-Centered Design, Participatory Design & Co-creation, and Systems Thinking with agile and service-oriented strategies. The Pilot Manager of the City emphasized very social goals and early engagement with the marginalized or vulnerable groups. The city spent time identifying community-specific challenges, in dialogue with those most affected through co-creation workshops, and facilitated robust partnerships between tech companies, social workers, and community organizations. The city prioritized working with marginalized groups such as girls from Muslim backgrounds, parents from Moroccan communities, hearing-impaired individuals to ensure their voices shaped the challenges. On a positive note, Amsterdam's piloting activities illustrate how thoughtful design, participatory engagement, and cross-sector collaboration can yield meaningful social benefits while also driving systemic and commercial gains. A more critical lens reveals how difficult it is to engage communities in meaningful ways that also lead to win-win-outcomes for all involved. Additionally, it was observed that ethics was under-emphasized structurally, especially during the short piloting timeframes and budgeting constraints creating pressure while dealing with complex social issues like health education and sports, intergenerational cultural issues that require trust, time and care. Challenge sensitivity and ownership were also key gaps especially in teams leveraging technology requiring robust facilitation and onboarding. The Pilot Manager concluded that she is 100% happy with only one pilot that the city got to host during the three-year project.

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TABLE 1. OBSERVED LOGICS AND THEIR INTENSITY (X, 2X, 3X)

| Design logic | Amsterdam | Helsinki | Aarhus | Prague | Breda | Ethics Contribution |
|---|---|---|---|---|---|---|
| Human Centered Design | 3x | 2x | 2x | x | 3x | Commitment to HCD to centre and engage the marginalized users directly in shaping relevant solutions |
| Design thinking | 2x | 2x | 2x | x | x | Adoption of design thinking framework to adjust to emerging insights during implementation in an inclusive manner |
| Participatory Design, Co-creation | 3x | 2x | x | | x | Early engagement of the marginalized communities to ensure the consent, co-ownership, relevance and sustainability of solutions |
| Service Design | x | 3x | 3x | 2x | x | Service design thinking to explicate public services as ecosystems through touchpoints and experiences rather than isolated challenges. |
| Systems thinking | x | 3x | 2x | x | 2x | Identification of hidden interdependencies and interventions that could make or break the success of a pilot |
| Strategic design and policy alignment | 2x | 3x | 3x | x | x | Early engagement of policy stakeholders ensuring long-term accountability and impact more easily |
| Agile software development | 2x | x | 2x | x | | Agile software development approaches support iterative adaptation for emerging ethical concerns through continuous feedback stages |
| Open innovation and cross sector collaboration | 2x | 2x | 3x | x | 2x | Open innovation approaches to define the public sector needs for private sector collaboration in a more transparent manner |
| Value sensitive design | 2x | 2x | | | x | Anticipation of explicit ethical risks upfront to develop inclusive and responsible solutions |

In Helsinki, the logics of Service Design, Participatory Design & Co-creation and Systems thinking prevailed. The pilots were embedded within the city's strategic design goals, notably through SOTEPE (social health services) framework, to ensure the alignment of piloting process with the city's long-term institutional needs. Helsinki focused on integrating municipal professionals into service development, aligning with city goals, and ensuring operational feasibility. There were some structured workshops with migrants and city professionals, while also leveraging insights from cross-sector internal innovation networks to map lived experiences of integration barriers and interactions between the identified vulnerable groups and municipal services. Systems thinking showed in seeing digital exclusion as a multi-layered problem, requiring solutions addressing language barriers, bureaucratic processes, and employer participation. Value Sensitive Design also informed the piloting process, seen in cases where digital exclusion was addressed through a rights-based lens, highlighting how immigrants are often unable to access services without a social security number first, which itself takes time. Embedding piloting into existing frameworks reduced the risk of short-lived pilots without lasting impact but left the power dynamics and structural inequalities unaddressed. Although the city possessed good tacit knowledge, pilot ownership was an issue faced like Amsterdam. In contrast, there was less evidence of continuous ethical reflexivity and institutional learning than in Amsterdam. Finally, legal barriers such as procurement laws created barriers in the formal adoption of solutions, rendering some pilots as disconnected experiments.

The approach adopted in Prague was inclined to Strategic Design and Policy Prototyping as well as Systems thinking and Open Innovation. The pilots in Prague 6 (a district) were structured to ensure alignment with Prague 6's innovation strategy and broader municipal priorities. Prague also framed its pilots as part of a larger city initiative rather than isolated experiments and actively engaged with AI-focused organizations to define challenges, ensuring that digital solutions were both technologically feasible and innovative. This cross-sector collaboration fostered knowledge exchange between the public sector and tech industries and allowed for rapid piloting, seen in pilots where digital infrastructure were reused. Prague's innovation piloting demonstrated strengths in strategic alignment and technological feasibility but the ethical challenges emerging from limited community participation and potential technocratic biases were not fully addressed. The challenge formation process was highlighted as a rushed process, leaving little space for participatory work rendering the involvement of citizens to a lesser degree. Furthermore, certain pilot solutions had to be dropped due to legal constraints, emerging from a gap in legal feasibility analysis and piloting aims.

In Breda, the logics of Participatory Design were deeply embraced. Value Sensitive Design and Ethical and Inclusive Design also showed in Breda's efforts to simplify application criteria, jury building, engage underrepresented voices through youth councils, and address language barriers, reflecting a strong commitment to ethical and inclusive design principles. Breda's built their jury for evaluating the applications for the pilots using the ARE IN (Authority, Resources, Expertise, Information, Need) framework, ensuring representation from authority, while balancing the city's social needs. The inclusion of youth councils, NGOs, and community groups in both jury selection and pilot development highlights Breda's focus on participatory practices and democratic innovation. Notably, Breda's challenge formation was informed by academic knowledge on intergenerational poverty and trauma. Specific attention was also placed on simplifying the language and translating jury materials for youth council, who were also jury

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members and uncomfortable with English. By interfacing as facilitators and social workers, translating between tech teams and local NGOs to establish trust and safety, the city also demonstrated an ad-hoc form of Service Design logic. However, Breda could not fully mitigate the ethical challenges related to structural limitations regarding the number of applications per challenge and funding constraints chosen by the CommuniCity project. Without a shared framework for evaluating the impact or co-creation in ethical terms, Ethics also manifested as an afterthought. Finally, despite the attempts to bridge the language gaps, it was also a major issue hindering deep equitable co-creation.

The approach of Aarhus was based mainly on Human-Centered Design, Service Design and Open Innovation. Aarhus consulted city staff more broadly before defining challenges and positioned itself as a facilitator or a 'matchmaker' between private companies and municipal needs, wanting to ensure that tech-driven solutions were viable for public sector adoption. The pilots were focusing on a single challenge, asking how technologies can ease the process of setting up a bank account for foreigners. The pilot approach was structured in iterative phases including check-ins, mid-term feedback sessions, final presentations, demonstrating strong Agile Prototyping logic. Notably, committed problem owners were identified early-on and within relevant city departments to ensure ownership. While Aarhus was leveraging municipal expertise, and positioning pilots for long-term policy impact, there must have been quite some balancing of public-private interests requiring continuous ethical reflexivity. Interview insights highlighted that co-creation was limited and that citizens involvement could have been higher. It was also noted that while ownership was addressed, city facilitators were not deeply involved in the end-end design of piloting solutions creating some detachment in the solution implementation and long-term adoption, owing to the lack of formal mechanisms.

As Table 1. indicates, the initial summary of observed logics shows that the cities had different types of approaches and strengths when it comes to employing the design approach and embedding ethical co-creation. The analysis is still ongoing, but we argue that the approach taken here already renders some promising points of consideration for further analysis, especially when it comes to ethical affordances of the project and process designs.

When we refer to ethical contributions, we mean the ethical affordances or potentials embedded in each design approach. We understand the contributions as inherent strengths within each logic. Each design logic's capacity to promote fairness, care, inclusion in how the CommuniCity programme was adapted, challenges were defined, solutions were ideated, how people were involved and even if long-term thinking was established or leveraged – are all signs of the logics' ethical contributions. The logics can support inclusive and socially attuned pilot processes through their own "strongholds" in varying ways and degrees of success. This kind of contextual approach to ethics may be better suited to innovation piloting than relying only on top-down compliance mechanisms, especially when working with complex social issues and marginalized groups.

### *A. Implications and further considerations*

In piloting processes, ethics can be seen both as a tool and object of negotiation as well as a negotiated practice. To employ a concept introduced by Felt [21], CommuniCity as a project can be understood as a techno-moral regime that aims to exemplify RRI and, as such, also reflects some of the systemic challenges visible in piloting. For example, the Open calls include a set of choices such as the number of pilots for each call; the original project design had limited funding which was solely aimed at teams instead of including pilot hosts; the use of English across the round instead of ensuring the participation of vulnerable groups and communities in local languages. In all of these activities, it seems that there has been a failure to fully integrate and even explicate ethics and ethical considerations beyond compliance requirements. Furthermore, delegating ethical considerations during piloting solely to civil servants and tech parties left marginalized communities worried about privacy and other ethical issues without the means to advocate for themselves.

The involvement and agency of the communities that, in principle and as per the project's design and ambition, should be able to have extensive agency in the processes through co-creation, is in our understanding key to assessing the project's successes and challenges. It is also a point of negotiating ethics and ensuring they are contextualized enough to suit the actual questions and challenges of the community, developers, pilot hosts, and researchers. Stilgoe et al. [12] have called for the possibility of affected communities to exercise "speaking back" at any time of the process, meaning that they would be able to complement, refuse, terminate or refine any aspect of the pilot process according to their judgement and deliberation. It is therefore a critical question how the pilots can enable groups to speak back and influence the process. Should the pilots serve as test beds for open experimentation and contestation, or to be more strictly regulated spaces for achieving set out project goals and outcomes? Should the requirement for the co-ownership of the technical tool among all stakeholders articulated through community-based methods such as design justice [22], be introduced in the piloting model leading to its structural changes? Based on our initial observations, it does seem that there is indeed a tension between pre-set success metrics and goals, including market validation and possible adoption, and profound co-creation principles and practices, where the process of inclusive and collaborative piloting could have more societal value than the end outcome. This would also enable a continuous reflection of ethical issues and possibilities, without a closed list of questions or frameworks.

In relation to the overall logics of complex innovation piloting, embedding ethics effectively and enabling reflexive structures may require rethinking mechanisms such as the Open Calls process, the project timeline and the sustainability of the pilots beyond the project's timeline. One solution might be to develop ethical frameworks and guidelines and insist on their use as part of the funding, but it is still an open question on what kind of methodology should such a framework be based on. It is clear that at least the process should include a multimethod approach and a timing which enables initial work before the launch of the open call and piloting process.

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For a co-creation based piloting which involves marginalized communities to be ethically effective, ethics should go beyond procedural and legal compliances but also reflexively look at power, agendas, time, participation and impact. A key practical implication following from this is the question of how to embed, and reflect actively, on ethics in the project at various stages across stakeholders and develop tools for addressing power asymmetries in roles and agendas.

## III. Conclusion

In this paper, we have introduced our research setting for an ethical analysis of innovation piloting through the case of CommuniCity project. Based on our previous research and initial analysis, we argue that piloting is not a neutral process, but rather an evolving socio-political dialogue between the actors and agendas. In case our approach supports the development of these considerations, it may be that we can provide a perspective to social innovation piloting and successful implementation of RRI in a way that realizes the transformational potential of technology piloting based on ethical robustness. Ethical piloting in complex projects like CommuniCity requires not only embedded ethical frameworks but also ongoing reflexive practices that challenge the very structures of piloting models themselves.

## References


[1] M. Ryghaug and T. M. Skjølsvold, Pilot Society and the Energy Transition: The co-shaping of innovation, participation and politics. Springer International Publishing, 2021, DOI: 10.1007/978-3-030-61184-2J. DOI: 10.1007/978-3-030-61184-2

[2] European Commission, (2024). “Commission presents new European Innovation Agenda to spearhead the new innovation wave”. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_4273.

[3] European Commission, (2024). “A Europe fit for the digital age. Empowering people with a new generation of technologies. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age_en.

[4] European Commission, Directorate-General for Research and Innovation and Schomberg, R., Towards responsible research and innovation in the information and communication technologies and security technologies fields, Schomberg, R.(editor), Publications Office, 2011, https://data.europa.eu/doi/10.2777/58723.

[5] Braun and J. Starkbaum, “Stakeholders in Research and Innovation: Towards Responsible Governance,” in Putting Responsible Research and Innovation into Practice, vol. 40. V. Blok, Ed.Springer International Publishing, 2023, pp. 229–247, DOI: 10.1007/978-3-031-14710-4_12.

[6] P. Cardullo and R. Kitchin, “Smart urbanism and smart citizenship: The neoliberal logic of ‘citizen-focused’ smart cities in Europe. Environment and Planning C,” Politics and Space, vol. 37, no. 5, pp. 813–830, 2019., doi:DOI: 10.1177/0263774X18806508

[7] H. T. Nguyen, P. Marques, and P. Benneworth, “Living labs: Challenging and changing the smart city power relations?” Technol. Forecast. Soc. Change, vol. 183, p. 121866, 2022., doi:DOI: 10.1016/j.techfore.2022.121866

[8] F. Tomasini Giannini and I. Mulder, (2022). Towards a Power-Balanced Participatory Design Process. Proceedings of the Participatory Design Conference 2022 - Volume 2, 111–117. https://doi.org/DOI: 10.1145/3537797.3537819

[9] T. Volkmann, M. Dresel, and N. Jochems, (2023). Balancing Power Relations in Participatory Design: The Importance of Initiative and External Factors. Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems, 1–6. https://doi.org/DOI: 10.1145/3544549.3585864

[10] J. Müür and E. Karo, “Learning from public sector innovation pilots: The case of autonomous bus pilots,” Innovation (Abingdon), vol. •••, pp. 1–24, 2023., doi:DOI: 10.1080/13511610.2023.2286438

[11] G. Wiarda and R. Schuerz, Doorn. Ethics Framework and Guidelines for Participatory Processes in the Activities of Research Funding Organizations, 2024, DOI: 10.5281/ZENODO.8089672.

[12] J. Stilgoe, R. Owen, and P. Macnaghten, “Developing a framework for responsible innovation,” Res. Policy, vol. 42, no. 9, pp. 1568–1580, 2013., doi:DOI: 10.1016/j.respol.2013.05.008

[13] CommuniCity project website (2024). https://communicity-project.eu/.

[14] K. Khutsishvili, “Guidelines for Translating Frameworks, Methods, Tools and Principles of Local Innovations for Marginalised and Vulnerable Communities – 2023,” (version 1; peer review: 1 approved with reservations, 2 not approved),” Open Res. Eur., vol. 2024, no. 4, p. 36, 2024., doi:DOI: 10.12688/openreseurope.16853.1 (Unpublished.)

[15] S. Maasen, S. Dickel, and C. Schneider, Eds. TechnoScienceSociety: Technological Reconfigurations of Science and Society, vol. 30. Springer International Publishing, 2020, DOI: 10.1007/978-3-030-43965-1.

[16] C. M. Shrewsbury, “What Is Feminist Pedagogy? Women’s Studies Quarterly, 21(3/4), 8–16., Magnet, S., Mason, C. L., & Trevenen, K. (2014). Feminism, Pedagogy, and the Politics of Kindness,” Fem. Teach., vol. 25, no. 1, pp. 1–22, 1993.

[17] J. Giacomin, “What Is Human Centered Design?” Des. J. (Aldershot), vol. 17, no. 4, pp. 606–623, 2014., doi:DOI: 10.2752/175630614X14056185480186

[18] R. Buchanan, Systems Thinking and Design Thinking: The Search for Principles in the World We Are Making, She Ji: The Journal of Design, Economics, and Innovation, Volume 5, Issue 2, 2019, Pages 85-104, ISSN 2405-8726.

[19] A. Polaine, L. Løvlie, and B. Reason, Service Design: From Insight to Implementation, J. Simony and M. Justak, Eds.Louis Rosenfeld, 2013.

[20] B. Friedman and D. G. Hendry, Value Sensitive Design. Shaping Technology with Moral Imagination. The MIT Press, 2019, DOI: 10.7551/mitpress/7585.001.0001.

[21] U. Felt, U. (2017). "Response-Able Practices" or "New Bureaucracies of Virtue": The Challenges of Making RRI Work in Academic Environments. In L. Asveld, van Dam-Mieras, R., Swierstra., Lavrijssen, S., Linse, K., van den Hoven, J. (Ed.), Responsible Innovation 3: A European Agenda? (pp. 49-68). Cham: Springer International Publishing.

[22] A. Kalender, G. Sileno, and S. Ghebreab. 2025. Toward Just Smart Cities: Community-based Arts Organisations as Partners in Design Justice. In Proceedings of the Conference on Technology Ethics 2024 (Tethics 2024),Tampere, Finland, November 6-7, 2024. (CEUR Workshop Proceedings), T. et al. Olsson (Ed.). CEUR-WS.org, Aachen, 107–119. https://ceur-ws.org/Vol-3901/



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